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PART IA

Together we can make a difference

Child Support Enforcement System Replacement
Design, Development & Implementaion Services

RFP 3462

PART IA - TECHNICAL PROPOSAL

September 21, 2017

Deloitte.

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September 21, 2017

Ronda Miller
Purchasing Officer II
State of Nevada, Purchasing Division
515 E. Musser Street, Suite 300
Carson City, NV 89701

RE: RFP 3462, Child Support Enforcement System Replacement Design, Development, and Implementation Services

Dear Ms. Miller:

The Nevada Division of Welfare and Supportive Services (DWSS) is modernizing its child support systems to respond to expanding needs and to address limitations within the current NOMADS system. You chose a California CSE transfer approach in order to implement an intuitive and easy to use system, support data exchanges with systems and partners, bring your technology platform up to date, and deliver a system that operates in an efficient and cost effective manner. Deloitte's qualifications to meet your requirements for the NCSEAS project include:

- Spending the last six years maintaining and improving the California child support enforcement (CSE) solution as the state's maintenance and operations contractor
- Serving as Oregon's CSE DDI partner, transferring the CA CSE system to Oregon, and developing best practices and lessons learned from our experience
- A strong track record of successfully working with Nevada DWSS and other state agencies for seven years
- A proven team who has achieved federal certification in eight states
- A focus on new business and technology innovations in child support enforcement for all states

Endorsing our experience and performance, Oregon Child Support Program Director Kate Cooper Richardson recently had this to say about our current project transferring the CA CSE system:

> "With the Deloitte team's deep knowledge of the California child support system, they were able to stand up a solution in Oregon's proof of concept environment during the early stages of the project. This proof of concept provided a broad understanding of the functionality during requirements and design sessions, which helped us identify areas that needed to change to meet Oregon's specific requirements. We are now in the System and Integration testing phase of the project, and our confidence in Oregon's decision to partner with Deloitte continues."

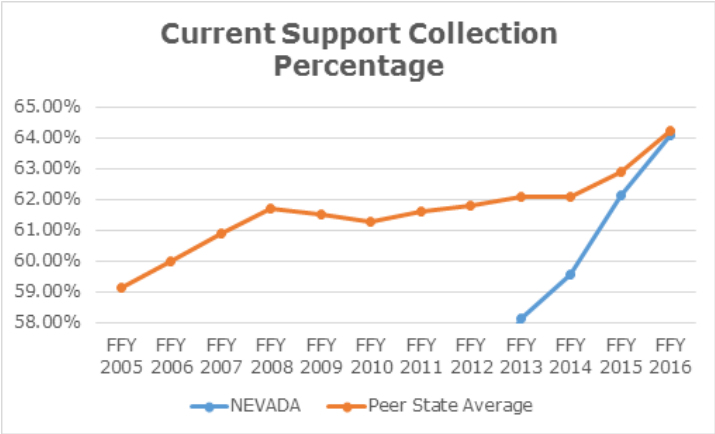
As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

SUPPORTING NEVADA'S CHILD SUPPORT IMPROVEMENT JOURNEY

As Nevada sets out on the process of replacing the child support functionality in NOMADS, the State is continuing on its journey of improving performance, timeliness and accuracy of the program. In doing so, the State will improve caseworker efficiency and effectiveness, services provided to case members, third party interactions, and relationships with employers.

Looking back to 2010, Nevada has made tremendous progress toward your goal of improved operations and state rankings. Since then, you have risen in the rankings from 51st to 42nd for overall performance. Also, in 2010, Nevada was ranked 54th for Current Collections and now is ranked 27th, while the Arrears Percentage improved from 46th to 24th nationally. Lastly, another example of your improvement in Current Support Collection percentage, as demonstrated in the figure below, shows a swift rise to the peer state average.

In addition, since 2010 the State has seen performance improvements in Percent of Orders Established (76% to 87.02), and Percent of Current Support Payments (49% to 62.10%).



These performance achievements have been achieved even with the limitations that NOMADS creates for the CSEP organization and its workers. With the implementation of NCSEAS, Nevada will be positioned for continued improvements in its child support program and its performance metrics. We have seen performance improvements in states we have implemented new systems for, such as Florida, which improved its overall performance ranking from 37th to 12th. With an effective NCSEAS implementation, Nevada should see overall program performance improvements and improve the likelihood of capturing Federal incentive payments.

CALIFORNIA CSE AND THE TRANSFER TO OREGON

You have chosen to transfer the California CSE solution to Nevada. This is the current industry standard, and accessing lessons learned from that implementation and the transfer to Oregon are extremely important for your success:

The State of California has implemented the CSE system you would like to build upon in Nevada and Deloitte has maintained it since 2011. Supported by Deloitte, California has also implemented a mobile application, electronic document delivery via self-service portal to reduce print and mail costs, improved support for tribal communities, and many other enhancements.

The State of Oregon also decided to transfer the California CSE system, supported by Deloitte. Oregon chose a hybrid California transfer solution and expects to significantly improve maintenance and operations, federal reporting, self-service, and all CSE functional subsystems. The system is currently in the System and Integration Testing phase and is on schedule for implementation and roll out starting in July 2018.

These types of learnings transfer directly to Nevada and will provide a foundation you can build upon. In addition, through working with a total of 24 states on their child support enforcement programs, Deloitte has many more stories and lessons learned to share with you as we continue on this journey together.

EXPERIENCES FROM ACROSS THE US THAT SUPPORT NEVADA

Nevada is not alone in its CSE improvement efforts—many other states are on the road (or have been down the road) with the same goals. Our access to the lessons learned from numerous implementations can create an enhanced base point from which to guide and execute the project. Deloitte's desire to improve children's lives across the nation drives our commitment to programmatically empower our clients and the families they serve—this is a national priority for our practice. Our broader child support experience includes:

CALIFORNIA

Transferring the California CSE solution has provided Deloitte with current, hands on experience:

- Delivering more than 70 maintenance builds with over 1,200 system fixes, 400 change requests, and 180 major system enhancements
- Providing agile transformation services to DCSS related to process design and improvement, coaching, and training
- Helping DCSS move their current infrastructure to a cloud based environment

OREGON

Oregon chose a hybrid transfer approach, selecting all core components other than reporting and document generation from the state of California. The new system, Origin, is expected to significantly improve maintenance and operations, federal reporting, self-service, and all CSE functional subsystems to aid caseworkers in performing their day-to-day functions. Some of the key focus areas of this project include: upgrade of Java from 1.4 to 1.8, upgrading core technical framework such as struts and hibernate, enhancing the user experience, building a mobile enabled self-service portal, upgrading the financials sub-system, and making necessary changes to the functional subsystem to make it Oregon-specific. The project is currently on schedule and is in the system testing phase.

FLORIDA

Florida is the most recent large child support system (Florida CAMS) to achieve federal certification by the federal Office of Child Support Enforcement. In the four years since state-wide implementation, the program increased support order establishment performance by six percent, current collections increased nine percent, arrears collections increased 10%, and delivered $149 million more per year in collections for children and families. With the new system in place, Florida's Child Support Program gained enhanced reporting capabilities around key federal and management reports, better data accuracy, and enhanced data granularity. These new tools and data insights has allowed the program to reach for larger goals, year-after-year, and has led to improved federal performance measures and increased child support collections from parents who pay support. We continue to help the Florida Child Support Program conduct data analysis to inform and implement tools which drive improvements in the Program's Federal performance measures.

PENNSYLVANIA

Pennsylvania was the first—and only—child support program in the nation to achieve the required 80 percent on all of the federal child support performance measures. The state has achieved a six percent increase in establishment of orders, a ten percent increase in collections on current support, and a nine percent increase in collections of past-due support. The program has earned numerous awards for program performance and technology enhancements. In addition, Pennsylvania is known for its innovation in technology, including case management, data exchanges for enforcement, analytics, mobile, self-service, and forms and notice automation to improve program outcomes.

INDIANA

Indiana has undertaken a business process analysis which developed a systems and process implementation plan that identified 25 key child support program projects and is currently gathering more than 15,000 requirements for their new automated case management system. The state has improved performance of the existing system in managing and reporting case and participant data, plus it has realized cost savings, improved federal reporting, and implemented more efficient business processes through the business process analysis project. Since 2009, the child support program has consistently improved its national rankings across all the federal performance measures, moving from 39th in the county to 6th in overall performance on child support measures.

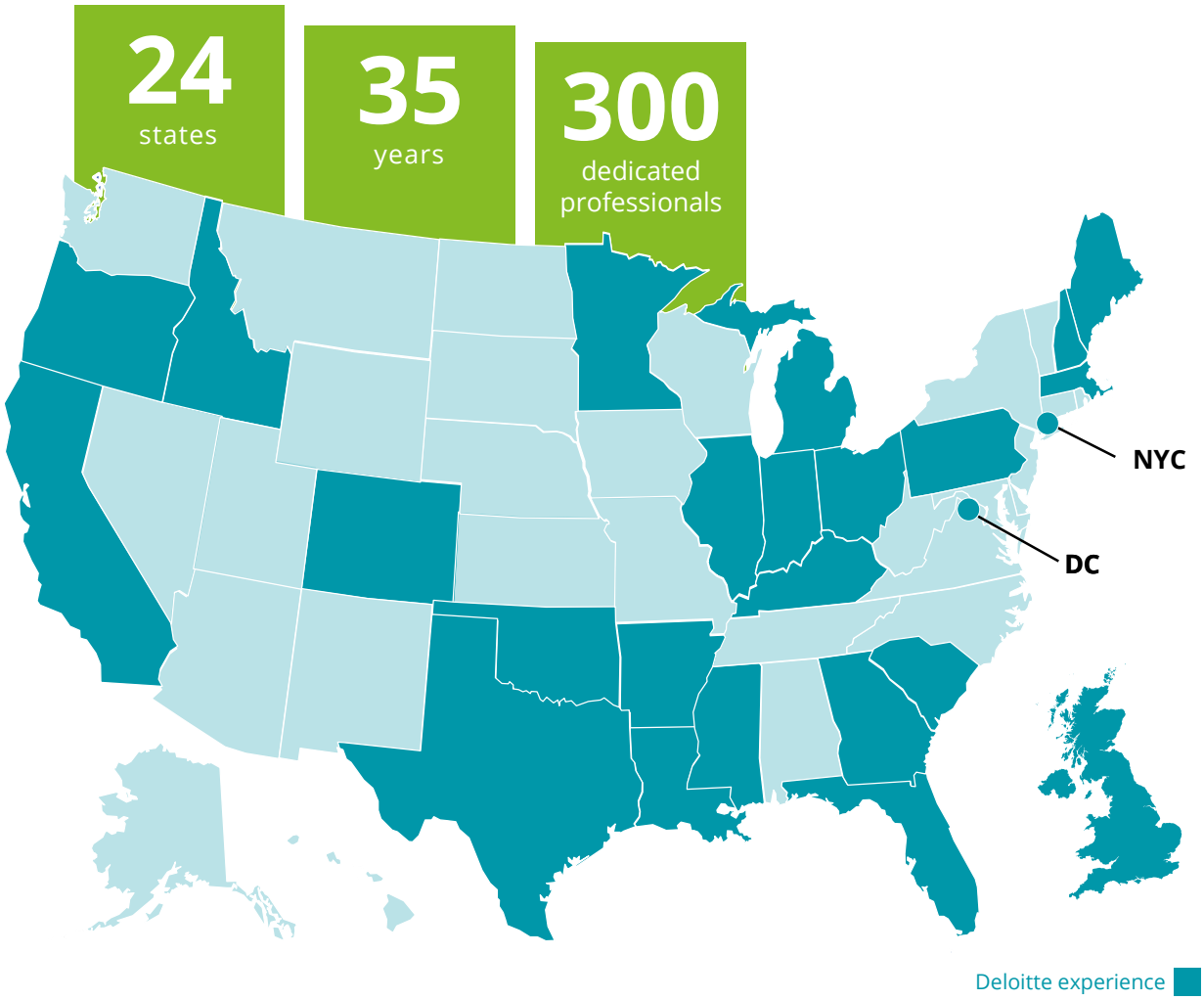
Here's what people are saying about us:

Deloitte really changed the way we think, through pushing us to see the potential beyond what we could see.
Ann Coffin, IV-D Director, Florida

I think it's a large part of what distinguishes Deloitte staff, or many of them—the sense of interest in what we do, their knowledge of it, and their ability to communicate and talk through what we think we need and what we're going to get.
Dan Richard, *IV-D Director, Commonwealth of Pennsylvania (Retired 9/12/14)*

My experience with Deloitte within the context of child support has been extremely positive. As a consultant, they were highly focused on client needs and nimble in their efforts to meet those needs. Their knowledge of the child support regulations, and knowledge of our particular state program was impressive. They were an invaluable resource in promoting necessary change and urging positive buy-in from our workforce.
Wendy Yerkes, Former IV-D Director, State of Indiana

DELOITTE'S CHILD SUPPORT ENFORCEMENT PRACTICE



TECHNOLOGY

- Statewide CSE system implementation
  ID, PA, FL, NH, MI, OR, CO, ID
- Incremental Modernization/Refactoring
  CO, ID
- Customer service solutions
  PA, FL, KY, LA, OR
- Document management solutions
  TX, PA, FL, WI, OR
- Data warehousing
  PA, GA, FL, IN, KY, NH, OR
- Data mining and predictive analytics
  PA, KY, NYC, GA, KY, IN, FL, NH, Federal OCSE
- Packaged solution implementations **FL**
- CSE system maintenance and operations
  PA, CA, IN, FL, MI, NH

STRATEGY

- Business process reengineering
  TX, MN, IN, NYC, OH, PA
- Technology strategy and roadmaps
  TX, MA, MN, IN
- Program performance analysis
  PA, TX, FL, IN, NYC, MN
- Program and policy review
  MN, TX, PA
- System planning and quality assurance services **AR**

ORGANIZATION

- Service delivery model assessments
  MN, TX, UK, Ontario
- Organizational assessment **TX, UK**

In addition, Deloitte brings Child Support experience from the United Kingdom and Canada

A ROADMAP FOR NCSEAS SUCESS

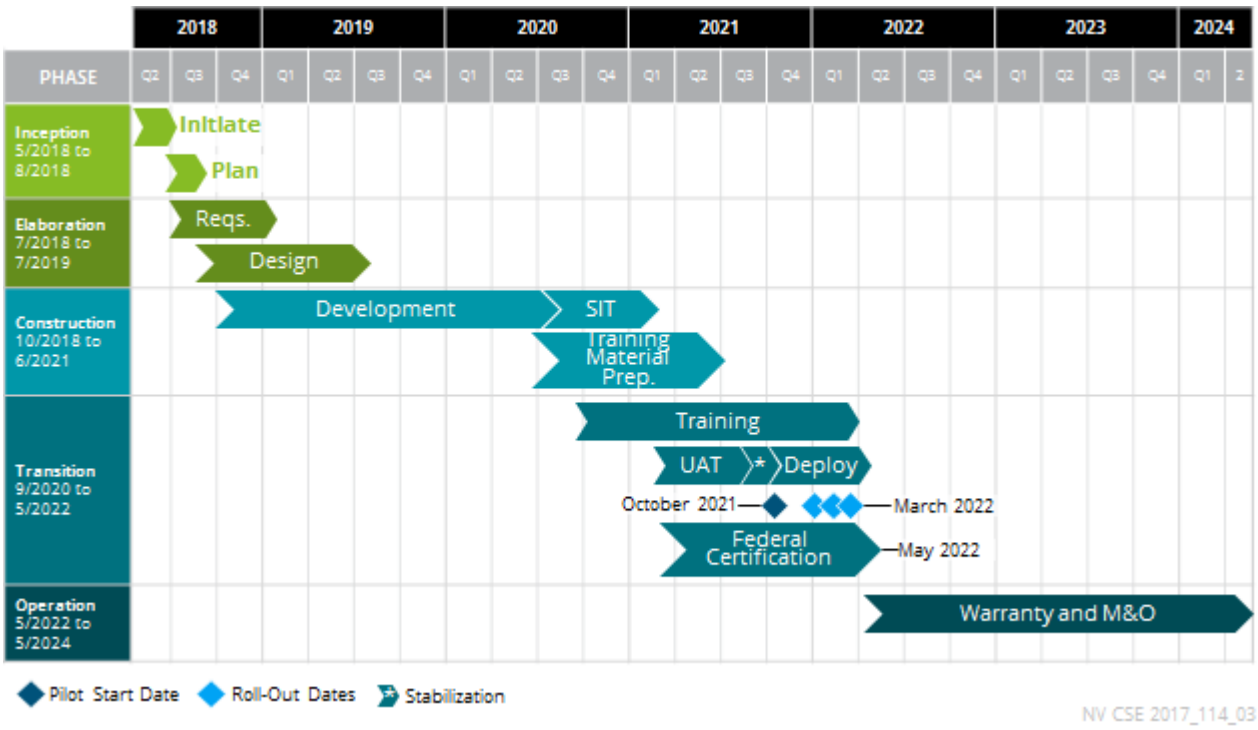
Based upon on our success with child support agencies across the country for the past 35 years, including our experience in maintaining the California CSE system and transferring it to Oregon, we have developed a well thought out approach and plan for the NCSEAS Design, Development, and Implementation Project.

Deloitte's preliminary project plan includes a projected overall time frame for the project, beginning in May 2018. Inception, Elaboration, and Construction are planned to be completed in forty-two (42) months, Implementation and Operations follow subsequently for a period of six (6) and twenty-four (24) months respectively.

The Gantt chart below highlights the Inception, Elaboration, Construction, Transition, and Operation phases of Deloitte's Enterprise Value Delivery (EVD) —our SDLC Methodology for transfer solutions.

The Inception, Elaboration, Construction, Transition, and Operation phases are further broken down into sub phases. At a high level, Inception is the phase where the plans and tools are established. Elaboration includes the fit-gap analysis, requirements, and design sessions that lead to the final design of the system. Construction is comprised of the activities to code and test the system. Transition includes the training, user acceptance testing and deployment of the system. The Operation phase includes the ongoing maintenance and operation of the system and project close out.

The preliminary project plan assumes a project start of May 1, 2018. This Gantt chart shows the major phases of the project, followed by the primary tasks or modules that comprise each phase. The proposed plan provides for a phased implementation by geographic region, addressing the need to maintain data in both NCSEAS and NOMADS and delivery of training for each phase. Our proposed project plan calls for full, statewide deployment by March 2022.



WHY DELOITTE?

Choosing the right firm to work with you on this major undertaking is core to the project's ultimate success. Please consider the following.

A DELOITTE TEAM THAT HAS SUCCESSFULLY DELIVERED CHILD SUPPORT CALIFORNIA CSE TRANSFER SOLUTIONS

With an overall HHS background spanning over 35 years in child support, integrated eligibility, child welfare, and child care human services across 30 of the country's largest state government agencies, we work hard every day to maintain this shared success with our clients. Key members of the engagement team carefully chosen to support Nevada have done this before in California and Oregon. On top of that, Deloitte's national HHS and CSE eminence have enabled us to build a deep bench of qualified professionals. The leaders we have chosen for the Nevada CSE engagement are hands-on practitioners who you will see on the ground in Nevada.

RAKESH DUTTAGUPTA — Project Executive

Rakesh will lead the engagement, bringing the strong understanding of your business and your people gained through leading multiple DWSS projects in Nevada and over seven years of on the ground proven results for all of his Nevada clients.

KENT WHEELER — Project Manager

Will serve as the Deloitte Project Manager for the NCSEAS project. Kent managed the State of Florida Child Support project "CAMS" from design through Federal Certification and then five years of production support and enhancements. Kent has spent the last two years managing the State of Oregon "Origin" project where they have just begun testing the transfer of the CA CSE system. He has over 25 years of consulting experience in which he has developed deep project management and specific domain experience in implementing successful child support systems.

JOHN WHITE — Advisor Leader

As a 17-year veteran of CSE system implementations in Pennsylvania, Ohio, Florida, Indiana, Massachusetts, Texas, California and Oregon, John will direct Deloitte's national child support resources and ensure that the right resources from our work in California and Oregon are deeply involved in the NCSEAS project.

MARGOT BEAN — Federal Certification Lead

As the former federal OCSE Commissioner and IV-D Director for the State of New York and for the Territory of Guam, Margot will bring her national perspective and strong experience in the federal certification process.

KEITH KETCHER — Quality Assurance Leader

Keith led the original California child support implementation. His level of experience with the California solution is an invaluable asset to our team and DWSS on the NCSEAS project. He will be involved in transferring the solution to Nevada leading our quality assurance team.

A LONGSTANDING TRADITION OF SUPPORTING DWSS AND NEVADA

Our Deloitte team for the NCSEAS project already has hands-on experience and deep technical knowledge of DWSS systems. These systems include those with whom NCEAS will exchange and manage data, and that serve many of the same clients that NCEAS will help serve. All CSE system transformation projects come with a high level of complexity—and that complexity correlates to a significant risk of failure, without proper management. Our firsthand experience and knowledge of DWSS systems, coupled with proven working relationships with your staff, serve as significant project accelerators and risk mitigators for the NCEAS Project.

Our experience with Nevada, your people, processes and systems, combined with our experience maintaining and transferring the CA CSE system, will significantly mitigate this risk. Examples of the relevant, beneficial knowledge we bring to the NCSEAS project through our prior work with DWSS include:

- Key partner in implementing the DWSS vision for Nevada citizens
- Deep knowledge of legacy NOMADS and existing systems, including data model, batch jobs framework (i.e., orchestration, sequencing), case management, and interfaces
- Understanding of integration with IV-A systems (37 common tables)
- Document management/imaging/printing
- Supporting the DWSS operations group for large scale project implementations and maintenance activities
- Awareness of DWSS Infrastructure related constraints
- Understanding of system performance related constraints

A true desire to help you drive major operations improvements and a significant rise in the national reporting rankings will be top of mind for us throughout the project.

We are committed to serving the people of Nevada. We are a part of your landscape, with a local project site at 1717 College Parkway, Carson City, and a local team. We recruit new employees in Nevada, and our people serve their local communities through volunteering at nonprofits, including across the state of Nevada.

ONE VENDOR

With Deloitte, there are no hand-offs to multiple unrelated vendors and there is no gray area when it comes to decision-making—the whole project will be executed by one vendor, Deloitte. There are no dependencies on getting consensus from other vendors because Deloitte leadership has the sole authority and accountability to make staffing, scope, and project execution decisions.

DWSS will be best served by the vendor with the right technology resources in-house—resources experienced in the entire modernization process, from planning through implementation, with deep experience leading large-scale system replacement implementations across a wide range of HHS clients plus Nevada specific experience. For example, members of our technology practice have directly related experience working with child support enforcement organizations in areas such as system integration, digital—enterprise content management and mobile, information management—data warehousing and analytics—maintenance and operations.

THE ABILITY TO HIT THE GROUND RUNNING ON DAY 1

The combination of experience running and enhancing the California system and transferring it to Oregon provides the foundation for a low risk and successful transfer to Nevada. In fact, key team members who will be staffed on the NCSEAS project originally built the CA CSE system and/or assisted in executing the Oregon transfer. Our team has leveraged insights and lessons learned from our experience in Oregon in developing our proposed project approach for Nevada. Based on this direct experience, we will start building the plan for user acceptance early, work on the ground side-by-side with you, and bring the immediate value of leading practices and lessons learned to NCSEAS—on day one of the project!

- Examples of project accelerators Deloitte brings to the NCSEAS Project include:
- Refined set of detailed requirements
- Transfer items inventory list
- Customized Enterprise Value Delivery methodology, tailored for the California CSE transfer
- Pre-Built Toolkits for to guide developers through framework upgrades and data clean up
- Test scripts
- Project reporting and dashboards, built for State IV-D program leadership and Federal OCSE partners
- Federal certification requirements mapping

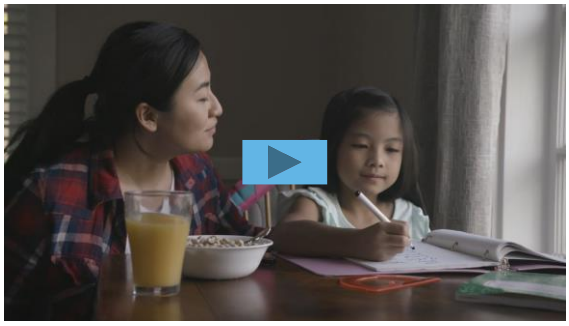
COMMITMENT TO ONGOING INNOVATION

Beyond our commitment to helping our child support agencies achieve their program performance goals through our engagements, Deloitte anticipates future needs and invests in the development of child support innovative products and solutions. These include predictive analytics, mobile, process reengineering, and change management tools:

- **Support Beacon.** Deloitte has developed an innovative, market leading child support predictive analytics and casework enablement tool—*Support Beacon*—designed to assist directors, supervisors, and caseworkers improve program performance.
- **Mobile Beacon.** Deloitte's child support practice built and deployed *Mobile Beacon,* an innovative mobile solution that enables agencies to maintain contact with parents, drive child support collections, and help parents be proactive partners in their child support cases.
- **IndustryPrint™ for Child Support Enforcement.** Deloitte's IndustryPrint for Child Support Enforcement is a business process analysis tool that incorporates best practices and efficient business processes for child support agencies to guide business and technology transformation initiatives.
- **ChangeScout™, Culture Path™, and EngagePath™.** Deloitte has developed a comprehensive suite of tools to support organizational change management and development initiatives within systems implementation projects or to address organizational barriers to change.
- **Program and policy research.** Deloitte's child support practice team continually conducts and publishes research regarding program and policy changes that are making an impact for child support agencies. Most recently, Deloitte University Press published: NextGen Child Support: Improving outcomes for families outlining strategies to help child support agencies adapt to a changing landscape. Click here for the full document

Our ongoing investment in innovation underscores our commitment to child support agencies and will enable us to bring insights to the NCSEAS Project. Moreover, these investments are part of our long term commitment to improving the child support program and helping our clients create better outcomes for the children and families they serve.

Please see our video highlighting our commitment to serving state child support agencies and our point of view on the important role the program plays.



Video: Working together…to bring families together.

Thank you for this opportunity to build the right system to support your team and serve Nevada's families and children.

Very truly yours,

Deloitte Consulting LLP

_____

Rakesh Duttagupta,
Principal

Title Page

Section I

11.2.2.1 Section I – Title Page with the following information:

Part IA – Technical Proposal	
RFP Title	***Child Support Enforcement System Replacement (DD&I)***
RFP:	***3462***
Vendor Name:	***Deloitte Consulting LLP***
Address:	***980 9th Street, Suite 1800*** ***Sacramento, CA 95814***
Opening Date:	***9/21/2017***
Opening Time:	***2:00 PM***

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PART II – COST PROPOSAL

Section I, Title Page

Section II, Cost Proposal

PART III – CONFIDENTIAL FINANCIAL INFORMATION

Section I, Title Page

Section II, Financial Information and Documentation

Vendor Information Sheet

Section III

11.2.2.3 Section III – Vendor Information Sheet
The vendor information sheet shall be completed and signed by an individual authorized to bind the organization.

Deloitte provides the following completed and signed Vendor Information Sheet, taken directly from the RFP.

VENDOR INFORMATION SHEET FOR RFP 3462

Vendor Shall:

A) Provide all requested information in the space provided next to each numbered question. The information provided in Sections V1 through V6 shall be used for development of the contract;
B) Type or print responses; and
C) Include this Vendor Information Sheet in Section III of the Technical Proposal.

V1	Company Name	Deloitte Consulting LLP

V2	Street Address	980 9th Street, Suite 1800

V3	City, State, ZIP	Sacramento, CA 95814

V4	Telephone Number		
	Area Code: 916	Number: 288	Extension: 3100

V5	Facsimile Number		
	Area Code:	Number:	Extension:

V6	Toll Free Number		
	Area Code:	Number:	Extension:

V7	***Contact Person for Questions / Contract Negotiations, including address if different than above***	
	Name:	Rakesh Duttagupta
	Title:	Principal
	Address:	980 9th Street, Suite 1800, Sacramento, CA 95814
	Email Address:	rduttagupta@deloitte.com

V8	Telephone Number for Contact Person		
	Area Code: 916	Number: 288 3977	Extension:

V9	Facsimile Number for Contact Person		
	Area Code:	Number:	Extension:

V10	***Name of Individual Authorized to Bind the Organization***	
	Name: Rakesh Duttagupta	Title: Principal

V11	Signature ***(Individual shall be legally authorized to bind the vendor per NRS 333.337)***	
	Signature:	Date: September 21, 2017

State Documents

Section IV

11.2.2.4 Section IV – State Documents
The State documents section shall include the following:
A. The signature page from all amendments signed by an individual authorized to bind the organization.
B. Attachment A – Confidentiality and Certification of Indemnification signed by an individual authorized to bind the organization.
C. Attachment B – Vendor Certifications signed by an individual authorized to bind the organization.
D. Attachment J – Certification Regarding Lobbying signed by an individual authorized to bind the organization.
E. Copies of any vendor licensing agreements and/or hardware and software maintenance agreements.
F. Copies of applicable certifications and/or licenses.

Deloitte provides the following completed documents:

- ***Signature Page of Amendments***
- ***Attachment A – Confidentiality and Certification of Indemnification***
- ***Attachment B – Vender Certifications***
- ***Attachment J – Certification Regarding Lobbying***
- ***Vendor Licensing Agreements and Hardware/Software Maintenance Agreements***
- ***Applicable Certifications and/or Licenses***

Signature Page of Amendments

Deloitte provides the following signed Amendment 1 and Amendment 2.

State of Nevada
Department Administration
Purchasing Division
515 E. Musser Street, Suite 300
Carson City, NV 89701

Brian Sandoval
Governor

Jeffrey Haag
Administrator

SUBJECT:	Amendment 1 to Request for Proposal 3462
RFP TITLE:	Child Support Enforcement System Replacement Design Development & Implementation Services
DATE OF AMENDMENT:	August 22, 2017
DATE OF RFP RELEASE:	August 3, 2017
OPENING DATE:	September 21, 2017
OPENING TIME:	2:00 PM
CONTACT:	Ronda Miller, Purchasing Officer II

The following shall be a part of RFP 3462**.** If a vendor has already returned a proposal and any of the information provided below changes that proposal, please submit the changes along with this amendment. You need not re-submit an entire proposal prior to the opening date and time.

RFP CHANGES:

Old Language:

Section 3.6: Refer to ***Attachment N (Requirements Matrix)*** and ***Attachment O (Implementation Vendor Requirements)***.

New Language:

Section 3.6: Refer to ***Attachment L (Requirements Matrix)*** and ***Attachment M (Implementation Vendor Requirements)***."

Old Language:

Section 3.3 TECHNICAL REQUIREMENTS For the functional requirements, see ***Section 2 of Attachment O, Implementation Vendor Requirements.***

New Language:

*Section 3.3 TECHNICAL REQUIREMENTS is revised to read***,** "For the technical requirements, see ***Section 3 of Attachment M, Implementation Vendor Requirements****."*

Old Language:

Section 3.4 FUNCTIONAL REQUIREMENTS: For the functional requirements, see ***Section 2 of Attachment O, Implementation Vendor Requirements.***

New Language:

Section 3.4 FUNCTIONAL REQUIREMENTS is revised to read, "For the functional requirements, see ***Section 2 of Attachment M, Implementation Vendor Requirements***."

Old Language:

*Section 11.2.2.10: Section X – Requirements Matrix**:*** Vendors must include their completed requirements matrix (refer to ***Attachment ??, Requirements Matrix***) in this section.

New Language:

Section 11.2.2.10: Section X – Requirements Matrix: Vendors must include their completed requirements matrix (refer to ***Attachment L Requirements Matrix***) in this section.

QUESTIONS & ANSWERS

1. Section 3.6, requirement 3.6.3 indicates that we should "Tie each data element/function to the vendor's project plan by task number." Is this a requirement for the proposal response or a task/deliverable to be produced during execution of the project?

   Refer to beginning of this amendment. Subsection 3.6.3 is a requirement for the vendor's proposed project plan to be included in the vendor's response.

2. To the extent that a vendor has rights to the CCSAS solution from California and has made significant upgrades to both the software and application architecture to allow it to more closely match the Nevada requirements (for example; making all data exchanges NIEM compliant) would the State consider that solution?

   DWSS conducted a feasibility study, which concluded in early 2016 and found that transferring California's Child Support System (i.e. CCSAS) is the most appropriate approach for replacing Nevada's current CSE system. This approach has been approved by the federal Office of Child Support Enforcement (OCSE). We expect the selected vendor to modify and modernize California's system to meet Nevada's requirements.

3. Requirement 4.38.3.4 states "Any subsequent deliverable dependent upon the State's acceptance of a prior deliverable will not be accepted for review until all issues related to the previous deliverable have been resolved." Would the State consider the possibility of a 'conditionally approved' deliverable, where the team can acknowledge that a deliverable substantially meets the State's requirements for approval, as long as certain conditions are completed? Thus, subsequent dependent deliverables could continue to be submitted so that significant project delays do not occur.

   Requirement 4.38.3.4 will not be changed. Exceptions to this requirement may be considered on a case-by-case basis.

4. Attachment M: Implementation Vendor Requirements: Limited Services
   (#19) The system must accommodate and identify cases for recovery of state debt only.
   Is this tracked as a non-IVD case or other new case type?

No, these are IV-D cases.

5. Attachment M: Implementation Vendor Requirements: Contact Documentation (#768) The online contact function must provide:
• Provision for setting up future messages for the operational report for specific cases and specific staff.
What is 'the operational report'? What future messages would be 'set up'?

Refer to Attachment M, requirement #656 for an explanation of operational reports. Future messages will be defined during the detailed requirements phase.

6. Attachment M: Implementation Vendor Requirements: Contact Documentation: (#768) The online contact function must provide:
• Provision for expedited follow-up on frequently occurring events that follow on contact with case participants (e.g., review and adjustment, administrative review, document generation, deferral of pending case closures, address changes and verification, employer changes and verification).
Is this proactive outreach regarding significant events occurring on a case? In what way is document generation (which is a form of outreach itself) one of those events that we would inform a client about?

Yes, this is proactive outreach regarding significant events occurring on a case. The outreach could be internal (e.g. to a caseworker) or external (e.g. to a client).

7. Will the State consider extending the response deadline for this RFP by three weeks to allow bidders to develop complete, accurate and compelling proposals?

No. Due to time constraints for meeting the project start date, the State cannot extend the response deadline.

8. The RFP currently requires a Performance Bond of 30% of the total contract value. Would the State consider reducing the Performance Bond requirement to 10% of the total contract value to be more in line with Industry Standards? Another option would be to limit the performance bond amount to the value of the current contract year versus the entire contract value. This change would most likely increase the number of compelling bids submitted by the vendor community.

The vendor must raise, in their proposal, any concerns they have with the performance bond requirements and any concerns may be discussed during contract negotiations with the awarded vendor at that time.

9. Response Section V - System Requirements.
Attachment M and Attachment L both have a Project Requirements section to respond to; there is no response section for Project Management in Response Section V - System Requirements. Please confirm if the only Project Requirements response is in Attachment L Requirements Matrix.

Section V - System Requirements is related to RFP section 3.0 SYSTEM REQUIREMENTS.

Section X - Requirements Matrix is related to Attachment L, which is provided for vendors to record their responses to each Implementation Requirement listed in Attachment M –

Implementation Requirements including section 4, Project Requirements. The only Project Requirements response is in Attachment L - Requirements Matrix. Section 3.6 provides instructions for completing the Requirements Matrix.

Refer to the beginning of this amendment.

10. RFP Section 2.1.3, page 8
Can the state clarify the intent of the statement "In addition to California's data warehouse and reporting components, Nevada's existing data warehouse and reporting components need to be modernized and incorporated into the new child support system"?

Nevada CSE currently uses numerous reports that are based on the structure of its existing data warehouse. To continue using those reports, the new CSE system will need to populate our data warehouse using its existing structure.

11. Our understanding is that the State would like to transfer concepts of California 's data warehouse and reporting components to modernize Nevada's existing data warehouse and reporting components to be incorporated in the new child support system. We request the State to confirm our understanding.

Refer to response to question 10.

12. Response Section VI - Scope of Work
In regards to the 5-page limit for each of the 38 subsections within Response Section VI Scope of Work, could this requirement be changed to a total 190 page limit overall, allowing some of the task-level subsections to go beyond the 5 pages?

Yes, we will allow this change.

13. RFP 3.5.10, page 23
Question: Is there currently a Network Access Control (NAC) solution in place? If so, what solution is in place?

No, we do not currently have a Network Access Control (NAC) solution in place.

14. RFP 3.5, page 21-24
Question: There are several references to items (events) that need to be logged and designed to interface with the current DWSS Splunk implementation. Is the vendor expected to perform the integration of the log sources with Splunk or will the State be responsible for that activity?

We expect the vendor to perform the integration of log sources with Splunk.

15. The RFP requires that the responses be submitted in Bold Italics. Is it acceptable to use a standard font that is bold and italicized?

Yes, it is acceptable to use a standard font that is bold and italicized for the responses.

16. Is it acceptable to provide technical solutions that are competitive and provide significant value to the State? How different can the proposed solution be, from the technical, functional and transfer specifications of the RFP?

Refer to response to question 2.

ALL ELSE REMAINS THE SAME FOR RFP 3462.

Vendor must sign and return this amendment with proposal submitted.

Vendor Name: Rakesh Duttagupta

Authorized Signature:

Title: Principal Date: Sept. 21, 2017

This document must be submitted in the "State Documents" section of vendors' technical proposal.

State of Nevada
Department Administration
Purchasing Division
515 E. Musser Street, Suite 300
Carson City, NV 89701

Brian Sandoval
Governor

Jeffrey Haag
Administrator

SUBJECT:	Amendment 2 to Request for Proposal 3462
RFP TITLE:	Child Support Enforcement System Replacement Design Development & Implementation Services
DATE OF AMENDMENT:	
DATE OF RFP RELEASE:	August 3, 2017
OPENING DATE:	September 21, 2017
OPENING TIME:	2:00 PM
CONTACT:	Ronda Miller, Purchasing Officer II

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1. Section 1.1.5.2 Staff Augmentation: How may we be informed of RFPs for expert and specialized skills per noted section (1.1.5.2)?

   At this time we do not anticipate releasing a separate RFP for staff augmentation services. We will notify the selected vendor through a contract change order at the time augmentation services are required.

2. Section 1.1.5.2: What will we need to provide to respond only to the expert/specialized skills section?

   The vendor selected to provide DD&I services as outlined in RFP 3462 may be called upon to provide staff augmentation services.

3. Can the State confirm the current version of the SAP Data Services (ETL Tool for the Data Warehouse)? Does the State have adequate licenses for the SAP Data Services tool to perform the necessary ETL services?

   All vendors must submit total licensing and implementation costs for all components of their proposed solution.

4. Can the State confirm if vendors are required to include pricing for a Database monitoring tool?

   Refer to question 3 response.

ALL ELSE REMAINS THE SAME FOR RFP 3462.

Vendor must sign and return this amendment with proposal submitted.

Vendor Name: Rakesh Duttagupta

Authorized Signature:

Title: Principal Date: Sept 21, 2017

This document must be submitted in the "State Documents" section of vendors' technical proposal.

ATTACHMENT A – CONFIDENTIALITY AND CERTIFICATION OF INDEMNIFICATION

Submitted proposals, which are marked "confidential" in their entirety, or those in which a significant portion of the submitted proposal is marked "confidential" **shall not** be accepted by the State of Nevada. Pursuant to NRS 333.333, only specific parts of the proposal may be labeled a "trade secret" as defined in NRS 600A.030(5). All proposals are confidential until the contract is awarded; at which time, both successful and unsuccessful vendors' technical and cost proposals become public information.

In accordance with the submittal instructions of this RFP, vendors are requested to submit confidential information in separate files marked "**Part IB Confidential Technical**" and "**Part III Confidential Financial**".

The State shall not be responsible for any information contained within the proposal. If vendors do not comply with the labeling and packing requirements, proposals shall be released as submitted. In the event a governing board acts as the final authority, there may be public discussion regarding the submitted proposals that shall be in an open meeting format, the proposals shall remain confidential.

By signing below, I understand it is my responsibility as the vendor to act in protection of the labeled information and agree to defend and indemnify the State of Nevada for honoring such designation. I duly realize failure to so act shall constitute a complete waiver and all submitted information shall become public information; additionally, failure to label any information that is released by the State shall constitute a complete waiver of any and all claims for damages caused by the release of the information.

This proposal contains Confidential Information, Trade Secrets and/or Proprietary information.

Please initial the appropriate response in the boxes below and provide the justification for confidential status.

Part IB – Confidential Technical Information			
YES		NO	
Justification for Confidential Status			
Section V: 3.4 Functional Requirements and Functional table of Section X Requirement Matrix content have confidential information provided through the entirety of each section. This confidential information is Deloitte's proprietary detailed analysis of the California child support system which is based on our gap analysis methodology. For Section V: 3.4 Functional Requirements, this covers pages V-88 to V-210. For Functional table of Tab X Requirements Matrix, it covers pages X-2 to X-33.			

Part III – Confidential Financial Information			
YES		NO	
Justification for Confidential Status			
Confidential Financial Information has also been provided as requested by the RFP.			

Deloitte Consulting LLP

Company Name

Signature

Rakesh Duttagupta, Principal ***September 21, 2017***

Print Name Date

This document shall be submitted in Section IV of vendor's technical proposal

ATTACHMENT B – VENDOR CERTIFICATIONS

Vendor agrees and shall comply with the following:

(1) Any and all prices that may be charged under the terms of the contract do not and shall not violate any existing federal, State or municipal laws or regulations concerning discrimination and/or price fixing. The vendor agrees to indemnify, exonerate and hold the State harmless from liability for any such violation now and throughout the term of the contract.

(2) All proposed capabilities can be demonstrated by the vendor.

(3) The price(s) and amount of this proposal have been arrived at independently and without consultation, communication, agreement or disclosure with or to any other contractor, vendor or potential vendor.

(4) All proposal terms, including prices, shall remain in effect for a minimum of 180 days after the proposal due date. In the case of the awarded vendor, all proposal terms, including prices, shall remain in effect throughout the contract negotiation process.

(5) No attempt has been made at any time to induce any firm or person to refrain from proposing or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal. All proposals shall be made in good faith and without collusion.

(6) All conditions and provisions of this RFP are deemed to be accepted by the vendor and incorporated by reference in the proposal, except such conditions and provisions that the vendor expressly excludes in the proposal. Any exclusion shall be in writing and included in the proposal at the time of submission.

Deloitte has provided some conditions and provisions regarding the terms and conditions that they wish to discuss with DWSS if awarded the contract. These conditions and provisions have been provided in Section XI: Other Informational Material, 11.2 Conditions and Provisions

(7) Each vendor shall disclose any existing or potential conflict of interest relative to the performance of the contractual services resulting from this RFP. Any such relationship that might be perceived or represented as a conflict shall be disclosed. By submitting a proposal in response to this RFP, vendors affirm that they have not given, nor intend to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant or any employee or representative of same, in connection with this procurement. Any attempt to intentionally or unintentionally conceal or obfuscate a conflict of interest shall automatically result in the disqualification of a vendor's proposal. An award shall not be made where a conflict of interest exists. The State shall determine whether a conflict of interest exists and whether it may reflect negatively on the State's selection of a vendor. The State reserves the right to disqualify any vendor on the grounds of actual or apparent conflict of interest.

(8) All employees assigned to the project are authorized to work in this country.

(9) The company has a written equal opportunity policy that does not discriminate in employment practices with regard to race, color, national origin, physical condition, creed, religion, age, sex, marital status, sexual orientation, developmental disability or handicap.

(10) The company has a written policy regarding compliance for maintaining a drug-free workplace.

(11) Vendor understands and acknowledges that the representations within their proposal are material and important, and shall be relied on by the State in evaluation of the proposal. Any vendor misrepresentations shall be treated as fraudulent concealment from the State of the true facts relating to the proposal.

(12) Vendor shall certify that any and all subcontractors comply with Sections 7, 8, 9, and 10, above.

(13) The proposal shall be signed by the individual(s) legally authorized to bind the vendor per NRS 333.337.

Deloitte Consulting LLP

Vendor Company Name

Vendor Signature

Rakesh Duttagupta, Principal ***September 21, 2017***

Print Name Date

This document shall be submitted in Section IV of vendor's technical proposal

ATTACHMENT J – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or shall be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federally appropriated funds have been paid or shall be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

By: ***Rakesh Duttagupta, Principal*** ***September 21, 2017***

Signature of Official Authorized to Sign Application — Date

For: ***Deloitte Consulting LLP***

Vendor Name

Child Support Enforcement System Replacement, Design, Development, and Implementation Services

Project Title

This document shall be submitted in Section IV of vendor's technical proposal

Vendor Licensing Agreements and Hardware/Software Maintenance Agreements

Deloitte provides the following licensing agreements and hardware/software maintenance agreements:

- ***Adobe***
- ***Articulate***
- ***Atlassian***
- ***Cisco AnyConnect***
- ***Eclipse***
- ***Erwin***
- ***HP***
- ***IBM***
- ***JAMA***
- ***Javadoc***
- ***JMeter***
- ***JUnit***
- ***Liquibase***
- ***Microsoft Software***
- ***Perforce***
- ***PuTTY***
- ***SAP***
- ***Selenium***
- ***Smart Communications***
- ***SoapUI***
- ***SonarQube***
- ***Total Validator Basic Edition***
- ***USPS***
- ***WebSurveyor***

ADOBE

Software License Agreement

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1.2 “Adobe Runtime(s)” means Adobe AIR, Adobe Flash Player, Shockwave Player, or Authorware Player.

1.3 “Compatible Computer” means a Computer with the recommended operating system and hardware configuration as stated in the Documentation.

1.4 “Computer” means a virtual or physical device that accepts information in digital or similar form and manipulates it for a specific result based on a sequence of instructions, including without limitation desktop computers, laptops, tablets, mobile devices, telecommunication devices, Internet-connected devices, and hardware products capable of operating a wide variety of productivity, entertainment, or other software applications.

1.5 “Customer” means you and any legal entity that obtained the Software and on whose behalf it is used; for example, and as applicable, your employer.

1.6 “Internal Network” means a private, proprietary network resource accessible only by employees and individual contractors (i.e., temporary employees) of a specific corporation or similar business entity. Internal Network does not include portions of the Internet or any other network community open to the public, such as membership or subscription driven groups, associations, and similar organizations.

1.7 “Output File” means an output file Customer creates with the Software.

1.8 “Permitted Number” means one (1) unless otherwise indicated under a valid license (e.g., volume license) granted by Adobe.

1.9 “Software” means (a) all of the information with which this agreement is provided, including but not limited to: (i) all software files and other computer information; (ii) any proprietary scripting logic embedded within exported file formats or used in an Adobe Online Service; (iii) sample and stock photographs, images, sounds, clip art and other artistic works bundled with Adobe software or made available by Adobe on Adobe’s website for use with the Adobe software and not obtained from Adobe through a separate service (unless otherwise noted within that service) or from another party (“Content Files”); (iv) related explanatory written materials and files (“Documentation”); and (v) fonts; and (b) any modified versions and copies of, and upgrades, updates, and additions to, such information, provided to Customer by Adobe at any time, to the extent not provided under separate terms (collectively, “Updates”).

1.10 "Redistributables" mean the files identified as Adobe Redistributable in the REDISTRB.TXT file located (a) on the Software CD-ROM, (b) if the Software was downloaded, in the unpacked installation folder or (c) in the Adobe RoboHelp folder on the computer hard drive.

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2.1.2.2 Evaluation Software. The Software, or portions of the Software, that are provided with a serial number designated for "evaluation purposes" or other similar designation (such as Software or a serial number supplied as "EVAL" under a separate agreement) ("Evaluation Software") may only be installed and used on Permitted Number of Compatible Computers during the License Term for demonstration, evaluation, and training purposes only, and only if any Output Files or other materials produced through such use are used only for internal, non-commercial, and non-production purposes. THE EVALUATION SOFTWARE IS PROVIDED "AS IS". ACCESS TO AND USE OF ANY OUTPUT FILES CREATED WITH SUCH EVALUATION SOFTWARE IS ENTIRELY AT CUSTOMER'S OWN RISK.

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2.1.4 Restrictions on Secondary Use by Volume Licensees. If the Software was obtained under an Adobe volume license program or agreement (such as Adobe Volume Licensing) by any licensee other than an educational volume licensee, then the second copy of the Software made under Section 2.1.3 must be used solely for the benefit and business of that volume licensee.

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2.1.6 Distribution from a Server. As permitted by the Documentation, Customer may copy an image of the Software onto a Computer file server within Customer's Internal Network ("Server") for the purpose of downloading and installing the Software onto Computers within the same Internal Network for use only as permitted by this Section 2.

2.1.7 Server Use.

2.1.7.1 As permitted in a separate purchasing document or Documentation and subject to license restrictions stated in this Agreement, Customer may install the Software on a Server only for the purpose of allowing an individual from a Computer within the same Internal Network ("Network User") to access and use the Software. The Network User who has access to such Software on the Server is referred to as "Server Software User". The total number of Server Software Users (not the concurrent number of users) may not exceed the Permitted Number. By way of example, if Customer has purchased 10 licenses of Software (Permitted Number is 10) and Customer

elects to install the Software on a Server, then Customer can only allow up to 10 Server Software Users the access to the Software (even though Customer may have more than 10 Network Users or fewer than 10 concurrent users of the Software).

2.1.7.2 For clarification and without limitation, the foregoing does not permit Customer to install or access (either directly or through commands, data, or instructions) the Software: (a) from or to a Computer not part of Customer's Internal Network; (b) for enabling web hosted workgroups or web hosted services available to the public; (c) by any individual or entity to use, download, copy, or otherwise benefit from the functionality of the Software unless licensed to do so by Adobe; (d) as a component of a system, workflow or service accessible by more than the Permitted Number of users; or (e) for operations not initiated by an individual user (e.g., automated server processing).

2.2 Membership. This Section 2.2 applies to Customers who have purchased a membership-based license or service such as the Creative Cloud membership (collectively, "Membership").

2.2.1 Adobe Online Services Related to the Membership. Subject to Customer's continuous compliance with this Agreement and payment of the applicable membership fees, if any, Adobe grants Customer a non-exclusive, Territory-wide and limited right to access and use the Software and related Adobe Online Service (as further described in Section 16.4.1) as part of the Membership, subject to the terms stated in this Agreement and the Additional Terms of Use (as the term is defined in Section 14.1.3 below).

2.2.2 Software License Related to the Membership. Subject to Customer's continuous compliance with this Agreement and payment of the applicable membership fees, if any, Adobe grants Customer a non-exclusive and limited license to install and use the Software: (a) in the Territory, (b) during the period that the Membership is current and active ("Membership Term") and (c) in a manner consistent with the terms of this Agreement and applicable Documentation. Upon the expiration or termination of the Membership Term, (x) some or all of the Software may cease to operate without prior notice and (y) Customer may not use the Software unless Customer has renewed the membership. All terms related to the specific Software as stated in this Agreement shall remain effective and continue to apply to Customer and its use of such Software.

2.2.3 Restrictions. Customer agrees to the following additional terms and restrictions related to the Membership: (a) Adobe may change the type of Software (such as specific products,

components, versions, platforms, languages, etc.) included in the Membership at any time and shall not be liable to Customer whatsoever for such change; (b) Customer may be required to connect to the Internet and log in at any time during the Membership Term; (c) Software may automatically connect to the Internet to verify Customer's Membership without notice at any time; and (d) Customer may not enable or allow others to use the Software as Customer.

2.3 Content Files. Unless stated otherwise in the "Read-Me" files, Documentation, or other license(s) associated with the Content Files, Customer may use, display, modify, reproduce, and distribute any of the Content Files. However, Customer may not distribute the Content Files on a stand-alone basis (i.e., in circumstances in which the Content Files constitute the primary value of the product being distributed), and Customer may not claim any trademark rights in the Content Files or derivative works thereof. Nothing stated herein shall affect the ownership of the Software as stated in Section 3.

2.4 Sample Application Code. Customer may modify the source code form of those portions of the Software programs that are expressly identified as sample code, sample application code, code snippets, ActionScript class files, or sample components (each, "Sample Application Code") in the accompanying Documentation solely for the purposes of designing, developing, and testing websites and applications developed using Adobe software programs; provided, however, Customer is permitted to copy and distribute the Sample Application Code (modified or unmodified) only if all of the following conditions are met: (a) Customer distributes only the compiled object code versions of the Sample Application Code with its application; (b) Customer does not include the Sample Application Code in any product or application designed for website development; and (c) Customer does not use the Adobe name, logos, icons, or other Adobe trademarks to market its application. Customer agrees to indemnify, hold harmless, and defend Adobe from and against any loss, damage, claims, or lawsuits, including attorney's fees, that arise or result from the use or distribution of its application.

2.5 Programming Languages. The Software may include portions of the ExtendScript SDK and Pixel Bender SDK. Subject to the restrictions contained in this Section 2, Adobe grants to Customer a nonexclusive, nontransferable, royalty-free license to use the items in the ExtendScript SDK and Pixel Bender SDK only for the purpose of internal development of application programs designed to function with Adobe products. Except as expressly provided in this Section 2.5, no portions of the ExtendScript SDK or the Pixel Bender SDK may be modified or distributed. Customer agrees to indemnify, hold harmless, and defend Adobe from and against any loss, damage, claims, or lawsuits, including attorney's fees, that arise or result from such distribution.

2.6 Documentation Copies. Customer may make copies of the Documentation for its own internal use in connection with use of the Software in accordance with this agreement, but no more than the amount reasonably necessary.

3. Intellectual Property Ownership.

The Software and any authorized copies that Customer makes are the intellectual property of and are owned by Adobe Systems Incorporated and its suppliers. The structure, organization, and source code of the Software are the valuable trade secrets and confidential information of Adobe Systems Incorporated and its suppliers. The Software is protected by law, including but not limited to the copyright laws of the United States and other countries, and by international treaty provisions. Except as expressly stated herein, this agreement does not grant Customer any intellectual property rights in the Software. All rights not expressly granted are reserved by Adobe and its suppliers.

4. Restrictions and Requirements.

4.1 Proprietary Notices. Any permitted copy of the Software (including without limitation Documentation) that Customer makes must contain the same copyright and other proprietary notices that appear on or in the Software.

4.2 Use Obligations. Customer agrees that it will not use the Software other than as permitted by this agreement and that it will not use the Software in a manner inconsistent with its design or Documentation.

4.3 No Modifications. Except as expressly permitted in Sections 2 or 16, Customer may not modify, port, adapt, or translate the Software.

4.4 No Reverse Engineering. Except as otherwise expressly permitted in Section 16.1, Customer will not reverse engineer, decompile, disassemble, or otherwise attempt to discover the source code of the Software.

4.5 No Unbundling. The Software may include various applications and components, may allow access to different Adobe Online Services, may support multiple platforms and languages, and may be provided to Customer on multiple media or in multiple copies. Nonetheless, the Software is designed and provided to Customer as a single product to be used as a single product on Computers as permitted herein. Unless otherwise permitted in the Documentation, Customer is not required to install all component parts of the Software, but Customer may not unbundle the component parts of the Software for use on different Computers.

4.6 No Transfer.

4.6.1 CUSTOMER WILL NOT RENT, LEASE, SELL, SUBLICENSE, ASSIGN, OR TRANSFER ITS RIGHTS IN THE SOFTWARE (INCLUDING WITHOUT LIMITATION, SOFTWARE OBTAINED THROUGH A WEB DOWNLOAD), OR AUTHORIZE ANY PORTION OF THE SOFTWARE TO BE COPIED ONTO ANOTHER INDIVIDUAL OR LEGAL ENTITY'S COMPUTER EXCEPT AS MAY BE EXPRESSLY PERMITTED HEREIN.

4.6.2 Except with regard to Educational Software Products (as defined in Section 16.3), Pre-release Software (as defined in Section 16.2), Evaluation Software, not-for-resale copies of the Software, or Software obtained through an Adobe volume license program and further subject to Section 4.6.3, Customer may permanently transfer all its rights to use the Software to another individual or legal entity provided that: (a) Customer also transfers (i) this agreement, (ii) the serial number(s), the Software affixed to media provided by Adobe or its authorized distributor, and all other software or hardware bundled, packaged, or pre-installed with the Software, including all copies, Updates, and Prior Versions (as defined in Section 5, below), and (iii) all copies of font software to such individual or entity; (b) Customer retains no Updates, Prior Versions, or copies, including backups and copies stored on a Computer; and (c) the receiving party accepts the terms and conditions of this agreement and any other terms and conditions under which Customer purchased a valid license to the Software. Additional information on transferring volume licensed software is available at http://www.adobe.com/go/volumepolicies.

4.6.3 If the Software requires recurring activation or registration and Adobe grants Customer's request to be exempted from the requirement of such recurring activation or registration, then in addition to the restrictions set forth in the Activation Terms (as defined in Section 14.3), then the right to permanently transfer as stated in Section 4.6.2 shall terminate immediately upon the grant of such request.

4.7 No Service Bureau. Customer will not use or offer the Software on a service bureau basis. Section 16.6.3 provides a limited exception for font software only.

4.8 Adobe Runtime Restrictions. Customer will not use Adobe Runtimes on any non-PC device or with any embedded or device version of any operating system. For the avoidance of doubt, and by example only, Customer may not use Adobe Runtimes on any (a) mobile device, set top box, handheld, phone, game console, TV, DVD player, media center (other than with Windows XP Media Center Edition and its successors), electronic billboard or other digital signage, Internet appliance or other Internet-connected device, PDA, medical device, ATM, telematic device, gaming machine, home automation system, kiosk, remote control device, or any other consumer electronics device; (b) operator-based mobile, cable, satellite, or television system; or (c) other closed system device. Additional information on licensing Adobe Runtimes is available at http://www.adobe.com/go/licensing.

4.9 Territory. Customer shall only use the Software and access the Adobe Online Services in the Territory and in a manner consistent with the activation policy described at http://www.adobe.com/go/activation. Adobe may terminate the license granted herein or suspend the Membership or access to the Adobe Online Services if Adobe determines that Customer is using the Software or Adobe Online Services outside the Territory.

5. Updates.

If the Software is an Update to a prior version of Adobe software (the "Prior Version"), then Customer's use of this Update is conditional upon its retention of the Prior Version. Therefore, if Customer validly transfers this Update pursuant to Section 4.6, the Customer must transfer the Prior Version along with it. If Customer wishes to use this Update in addition to the Prior Version, then Customer may only do so on the same Computer on which it has installed and is using the Prior Version. Any obligations that Adobe may have to support Prior Versions during the License Term may end upon the availability of this Update. No other use of the Update is permitted. Additional Updates may be licensed to Customer by Adobe with additional or different terms.

6. Limited Warranty.

Except as otherwise stated in a separate agreement between Adobe and a Software licensee, Adobe warrants to the individual or entity that first purchases a license for the Software for use pursuant to the terms of this agreement that the Software will perform substantially in accordance with the corresponding user manual for the Software for the shorter period of (a) the ninety (90) day period or (b) License Term following receipt of the Software ("Warranty Period") when used on the Compatible Computer. Non-substantial variation of performance from the user manual does not establish a warranty right. This limited warranty does not apply to the following, which are made available AS-IS and without warranty from Adobe: (i) patches; (ii) font software; (iii) Pre-release Software, trial, starter, evaluation, product sampler, Evaluation Software, and not-for-resale copies of the Software; (iv) websites, Adobe Online Services; and Third Party Online Services; (v) Certified Document Services (see Section 16); and (vi) any software made available by Adobe for free via web download from an Adobe website. All warranty claims must be made, along with proof of purchase, to the Adobe Customer Support Department within such Warranty Period. Additional information on warranty claims is available at http://www.adobe.com/go/support. The entire liability of Adobe and its affiliates related to such warranty claim and Customer's sole and exclusive remedy under any warranty will be limited to either, at Adobe's option, support of the Software based on the warranty claim, replacement of the Software, or, if support or replacement is not practicable at Adobe's determination, refund of the license fee Customer paid for the Software (if any). THE LIMITED WARRANTY SET FORTH IN THIS SECTION GIVES CUSTOMER SPECIFIC LEGAL RIGHTS. CUSTOMER MAY HAVE ADDITIONAL RIGHTS UNDER LAW WHICH MAY VARY FROM JURISDICTION TO JURISDICTION. ADOBE DOES NOT SEEK TO LIMIT CUSTOMER'S WARRANTY RIGHTS TO ANY EXTENT NOT PERMITTED BY LAW. Please see Section 16 for jurisdiction-specific provisions or contact the Adobe Customer Support Department.

7. Disclaimer.

THE LIMITED WARRANTY IN SECTION 6 AND ANY STATUTORY WARRANTY AND REMEDY THAT CANNOT BE EXCLUDED OR LIMITED UNDER LAW ARE THE ONLY WARRANTIES AND EXCLUSIVE REMEDIES APPLICABLE TO THE SOFTWARE. OTHER THAN THOSE OFFERED AND STATUTORY WARRANTIES AND REMEDIES, ADOBE, ITS AFFILIATES, SUPPLIERS, AND CERTIFICATE AUTHORITIES (DEFINED BELOW) DISCLAIM ALL WARRANTIES, CONDITIONS, REPRESENTATIONS, AND TERMS, EXPRESS OR IMPLIED, WHETHER BY STATUTE, COMMON LAW, CUSTOM, USAGE, OR OTHERWISE AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO PERFORMANCE, SECURITY, NON-INFRINGEMENT OF THIRD PARTY RIGHTS, INTEGRATION, MERCHANTABILITY, QUIET ENJOYMENT, SATISFACTORY QUALITY, AND FITNESS FOR ANY PARTICULAR PURPOSE. OTHER THAN SUCH OFFERED AND STATUTORY WARRANTIES AND REMEDIES, THE SOFTWARE AND

ACCESS TO ANY WEBSITES, ADOBE OR THIRD PARTY ONLINE SERVICES, AND CERTIFICATE AUTHORITY SERVICES ARE PROVIDED AS-IS AND WITH ALL FAULTS. THIS DISCLAIMER OF WARRANTY MAY NOT BE VALID IN SOME JURISDICTIONS. CUSTOMER MAY HAVE ADDITIONAL WARRANTY RIGHTS UNDER LAW WHICH MAY NOT BE WAIVED OR DISCLAIMED. ADOBE DOES NOT SEEK TO LIMIT CUSTOMER'S WARRANTY RIGHTS TO ANY EXTENT NOT PERMITTED BY LAW. The provisions of Sections 7 and Section 8 will survive the termination of this agreement, howsoever caused, but this will not imply or create any continued right to use the Software after termination of this agreement.

8. Limitation of Liability.

EXCEPT FOR THE EXCLUSIVE REMEDY OFFERED BY ADOBE ABOVE AND ANY REMEDIES THAT CANNOT BE EXCLUDED OR LIMITED UNDER LAW, ADOBE, ITS AFFILIATES, SUPPLIERS, AND CERTIFICATE AUTHORITIES WILL NOT BE LIABLE TO CUSTOMER FOR ANY LOSS, DAMAGES, CLAIMS, OR COSTS WHATSOEVER INCLUDING ANY CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES, ANY LOST PROFITS OR LOST SAVINGS, ANY DAMAGES RESULTING FROM BUSINESS INTERRUPTION, PERSONAL INJURY OR FAILURE TO MEET ANY DUTY OF CARE, OR CLAIMS BY A THIRD PARTY, EVEN IF AN ADOBE REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSS, DAMAGES, CLAIMS, OR COSTS. IN ANY EVENT, ADOBE'S AGGREGATE LIABILITY AND THAT OF ITS AFFILIATES, SUPPLIERS, AND CERTIFICATE AUTHORITIES UNDER OR IN CONNECTION WITH THIS AGREEMENT WILL BE LIMITED TO THE AMOUNT PAID FOR THE SOFTWARE, IF ANY. THIS LIMITATION WILL APPLY EVEN IN THE EVENT OF A FUNDAMENTAL OR MATERIAL BREACH OR A BREACH OF THE FUNDAMENTAL OR MATERIAL TERMS OF THIS AGREEMENT. Nothing contained in this agreement limits Adobe's liability to Customer in the event of death or personal injury resulting from Adobe's negligence or for the tort of deceit (fraud). Adobe is acting on behalf of its affiliates, suppliers, and Certificate Authorities for the purpose of disclaiming, excluding and limiting obligations, warranties, and liability, but in no other respects and for no other purpose.

THE FOREGOING LIMITATIONS AND EXCLUSIONS APPLY TO THE EXTENT PERMITTED BY APPLICABLE LAW IN CUSTOMER'S JURISDICTION. THIS LIMITATION OF LIABILITY MAY NOT BE VALID IN SOME JURISDICTIONS. CUSTOMER MAY HAVE RIGHTS THAT CANNOT BE WAIVED UNDER CONSUMER PROTECTION AND OTHER LAWS. ADOBE DOES NOT SEEK TO LIMIT ITS WARRANTY OR REMEDIES TO ANY EXTENT NOT PERMITTED BY LAW. SEE SECTION 16 FOR JURISDICTION-SPECIFIC STATEMENTS.

9. Export Rules.

Customer acknowledges that the Software is subject to the U.S. Export Administration Regulations (the "EAR") and that Customer will comply with the EAR. Customer will not export or re-export the Software, directly or indirectly, to: (a) any countries that are subject to U.S. export restrictions (including, but not limited to, Cuba, Iran, North Korea, Sudan, and Syria), (b) any end user whom Customer knows or has reason to know will utilize them in the design, development or production of nuclear, chemical or biological weapons, or rocket systems, space launch vehicles, and sounding rockets, or unmanned air vehicle systems, or (c) any end user who has been prohibited from participating in the U.S. export transactions by any federal agency of the U.S. government. In addition, Customer is responsible for complying with any local laws in Customer's jurisdiction which may impact its right to import, export or use the Software. If Adobe has knowledge that a violation has occurred, Adobe may be prohibited from providing maintenance and support for the Software.

10. Governing Law.

If Customer is a consumer who uses the Software for only personal non-business purposes, then this agreement will be governed by the laws of the jurisdiction which Customer purchased the license to use the Software. If Customer is not such a consumer, this agreement will be governed by and construed in accordance with the substantive laws in force in: (a) the State of California, if a license to the Software is obtained when Customer is in the United States, Canada, or Mexico; (b) Japan, if a license to the Software is obtained when Customer is in Japan; (c) Singapore, if a license to the Software is obtained when Customer is in a member state of the Association of Southeast Asian Nations, Mainland China, Hong Kong S.A.R., Macau S.A.R., Taiwan, or the Republic of Korea; or (d) England and Wales, if a license to the Software is obtained when Customer is in any jurisdiction not described above. The respective courts of Santa Clara County, California when California law applies, Tokyo District Court in Japan, when Japanese law applies, and the competent courts of London, England, when the law of England and Wales applies, shall each have non-exclusive jurisdiction over all disputes relating to this agreement. When Singapore law applies, any dispute arising out of or in connection with this agreement, including any question regarding its existence, validity, or termination, shall be referred to and finally resolved by arbitration in Singapore in accordance with the Arbitration Rules of the Singapore International Arbitration Centre ("SIAC") for the time being in force, which rules are deemed to be incorporated by reference into this section. There shall be one arbitrator, selected jointly by the parties. If the arbitrator is not selected within thirty (30) days of the written demand by a party to submit to arbitration, the Chairman of the SIAC shall make the selection. The language of the arbitration shall be English. Notwithstanding any provision in this

agreement, Adobe or Customer may request any judicial, administrative, or other authority to order any provisional or conservatory measure, including injunctive relief, specific performance, or other equitable relief, prior to the institution of legal or arbitration proceedings, or during the proceedings, for the preservation of its rights and interests or to enforce specific terms that are suitable for provisional remedies. This agreement will not be governed by the following, the application of which is hereby expressly excluded: (x) the conflict of law rules of any jurisdiction, (y) the United Nations Convention on Contracts for the International Sale of Goods, and (z) the Uniform Computer Information Transactions Act, as enacted in any jurisdiction.

11. General Provisions.

If any part of this agreement is found void and unenforceable, it will not affect the validity of the balance of this agreement, which will remain valid and enforceable according to its terms. This agreement may only be modified in writing, signed by an authorized officer of Adobe. The English version of this agreement will be the version used when interpreting or construing this agreement. This is the entire agreement between Adobe and Customer relating to the Software and it supersedes any prior representations, discussions, undertakings, communications, or advertising relating to the Software.

12. Notice to U.S. Government End Users.

12.1 U.S. Government Licensing of Adobe Technology. Customer agrees that when licensing Adobe Software for acquisition by the U.S. Government, or any contractor therefore, Customer will license consistent with the policies set forth in 48 C.F.R. Section 12.212 (for civilian agencies) and 48 C.F.R. Sections 227.7202-1 and 227.7202-4 (for the Department of Defense). For U.S. Government End Users, Adobe agrees to comply with all applicable equal opportunity laws including, if appropriate, the provisions of Executive Order 11246, as amended, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 (38 USC 4212), and Section 503 of the Rehabilitation Act of 1973, as amended, and the regulations at 41 CFR Parts 60-1 through 60-60, 60-250, and 60-741. The affirmative action clause and regulations contained in the preceding sentence will be incorporated by reference into this agreement.

12.2 Commercial Items. For U.S. Government End Users, Software is a “Commercial Item(s),” as that term is defined at 48 C.F.R. Section 2.101, consisting of “Commercial Computer Software” and “Commercial Computer Software Documentation,” as such terms are used in 48 C.F.R. Section 12.212 or 48 C.F.R. Section 227.7202, as applicable. Consistent with 48 C.F.R.

Section 12.212 or 48 C.F.R. Sections 227.7202-1 through 227.7202-4, as applicable, the Commercial Computer Software and Commercial Computer Software Documentation are being licensed to U.S. Government end users (a) only as Commercial Items and (b) with only those rights as are granted to all other end users pursuant to the terms and conditions herein. Unpublished-rights reserved under the copyright laws of the United States.

13. Compliance with Licenses.

If Customer is a business, company, or organization, Customer agrees that, in addition to any license compliance checking performed by the Software, Adobe or its authorized representative have the right, no more than once every twelve (12) months, upon seven (7) business days' prior notice to Customer, to inspect Customer's records, systems, and facilities to verify that its use of any and all Adobe software or service is in conformity with its valid licenses from Adobe. For example, Adobe has the right to those of Customer's records useful to determine whether installations of the Software have been serialized, and Customer shall provide such records to Adobe promptly upon request by Adobe. Additionally, Customer shall provide Adobe with all records and information requested by Adobe in order to verify that its use of any and all Adobe software is in conformity with its valid licenses from Adobe within thirty (30) days of Adobe's request. Additional information on serialization is available at http://www.adobe.com/go/elicensing.

14. Internet Connectivity and Privacy.

14.1 Automatic Connections to the Internet. The Software may cause Customer's Computer, without notice, to automatically connect to the Internet and to communicate with an Adobe website or Adobe domain for purposes such as license validation and providing Customer with additional information, features, or functionality. Unless otherwise specified in Sections 14.2 through 14.7, the following provisions apply to all automatic Internet connections by the Software:

14.1.1 Whenever the Software makes an Internet connection and communicates with an Adobe website, whether automatically or due to explicit user request, the Privacy Policy shall apply. Adobe Privacy Policy allows tracking of website visits and it addresses in detail the topic of tracking and use of cookies, web beacons, and similar devices.

14.1.2 Whenever the Software connects to Adobe over the Internet, certain Customer information is collected and transmitted by the Software to Adobe pursuant to the Adobe Online Privacy Policy available at http://www.adobe.com/go/privacy ("Privacy Policy").

14.1.3 If Customer accesses an Adobe Online Service (as defined in Section 16.4 below) or activates or registers the Software, then additional information such as Customer's Adobe ID, user name, and password may be transmitted to and stored by Adobe pursuant to the Privacy Policy and additional terms of use related to such Adobe Online Service (collectively with the Adobe.com terms of use and any applicable terms, the "Additional Terms of Use").

14.1.4 As permitted by applicable law or as consented to by Customer, Adobe may (a) send Customer transactional messages to facilitate the Adobe Online Service or the activation or registration of the Software or Adobe Online Service, or (b) deliver in-product marketing to provide information about the Software and other Adobe products and Services using information including but not limited to platform version, version of the Software, license status, and language.

14.2 Updating. The Software may cause Customer's Computer, without additional notice, to automatically connect to the Internet (intermittently or on a regular basis) to (a) check for Updates that are available for download to and installation on the Computer and (b) notify Adobe of the results of installation attempts.

14.3 Activation. The Software may require Customer to (a) obtain an Adobe ID, (b) activate or reactivate the Software, (c) register the software, or (d) validate the Membership. Such requirement may cause Customer's Computer to connect to the Internet without notice on install, on launch, and on a regular basis thereafter. Once connected, the Software will collect and transmit information to Adobe as further described at http://www.adobe.com/go/activation ("Activation Terms"). Software or Customer may also receive information from Adobe related to Customer's license, subscription, or Membership. Adobe may use such information to detect or prevent fraudulent or unauthorized use not in accordance with a valid license, subscription, or Membership. Failure to activate or register the Software, validate the subscription or Membership, or a determination by Adobe of fraudulent or unauthorized use of the Software may result in reduced functionality, inoperability of the Software, or a termination or suspension of the subscription or Membership.

14.4 Deactivation. Customer may deactivate and uninstall the Software from its Computer in order to install and activate the Software on another Computer in accordance with this agreement ("Deactivation") and as further described in http://www.adobe.com/go/activation. Deactivation requires Internet connectivity.

14.5 Use of Online Services. The Software may cause Customer's Computer, without additional notice and on an intermittent or regular basis, to automatically connect to the Internet to facilitate Customer's access to content and services that are provided by Adobe or third parties as further described in Section 16.4 (Online Services). In addition, the Software may, without additional notice, automatically connect to the Internet to update downloadable materials from these online services so as to provide immediate availability of these services even when Customer is offline.

14.6 Digital Certificates. The Software uses digital certificates (as described in Section 16.5) to help Customer identify downloaded files (e.g., applications and content) and the publishers of those files. For example, Adobe AIR uses digital certificates to help Customer identify the publisher of Adobe AIR applications. The Adobe Acrobat family of products also uses digital certificates to sign and validate signatures within Portable Document Format ("PDF") documents and to validate certified PDF documents. Customer's Computer may connect to the Internet at the time of validation of a digital certificate.

14.7 Settings Manager. The Software may include Flash Player. Flash Player may save certain user settings by storing them on Customer's Computer as a local shared object. They are associated with the instance of Flash Player on the Computer, allowing Customer to customize runtime features. The Flash Player Settings Manager permits Customer to modify such settings, including the ability to limit third parties from storing local shared objects or grant third party content the right to access the computer's microphone and camera. Additional information on how to configure settings in its version of Flash Player, including information on how to disable local shared objects using the Flash Player Settings Manager, is available at http://www.adobe.com/go/settingsmanager. Additional information on local shared objects is available at http://www.adobe.com/go/flashplayer_security.

15. Peer-to-Peer Communications.

The Software may use Customer's connection to a local area network, without additional notice, to automatically connect to other Adobe software and, in doing so, may indicate on the local area

network that it is available for communication with other Adobe software. These connections may transmit the IP Address of Customer's connection to the local network.

16. Specific Provisions and Exceptions.

This section sets forth specific provisions related to certain products and components of the Software as well as limited exceptions to the above terms and conditions. To the extent that any provision in this section is in conflict with any other term or condition in this agreement, the terms stated in this section will supersede such other term or condition.

16.1 No Prejudice; European Economic Area Provisions; Australia Mandatory Notice.

16.1.1 This agreement will not prejudice the statutory rights of any party, including those dealing as consumers. For example, for consumers in New Zealand who obtain the Software for personal, domestic, or household use (not business purposes), this agreement is subject to the Consumer Guarantees Act.

16.1.2 If Customer obtained the Software in the European Economic Area (EEA), Customer usually resides in the EEA and Customer is a consumer (that is its use of the Software is for personal, non-business related purposes), then Section 6 (Limited Warranty) does not apply to Customer's purchase and use of the Software. Instead, Adobe warrants for a period of 2 years from purchase that the Software provides the functionalities set forth in the applicable user manual (the "agreed upon functionalities") when used on the Compatible Computer. Non-substantial variation from the agreed upon functionalities will not establish any warranty rights. THIS WARRANTY DOES NOT APPLY TO SOFTWARE THAT CUSTOMER USES ON A PRE-RELEASE, TRYOUT, STARTER, OR PRODUCT SAMPLER BASIS, OR TO FONT SOFTWARE, OR TO THE EXTENT THE SOFTWARE FAILS TO PERFORM BECAUSE IT HAS BEEN ALTERED BY CUSTOMER. To make a warranty claim, Customer must notify the Adobe Customer Support Department during this 2 year period, providing details of proof of purchase of the Software. Adobe will verify with Customer whether there is a defect in the Software or advise Customer that the error arises because Customer has not installed the Software correctly (in which case, Adobe shall assist Customer). If there is a defect in the Software, Customer may request from Adobe either a refund or a repaired or replacement copy of the Software. Requests must be accompanied by proof of purchase. In the event Customer's warranty details are substantiated, Adobe will meet Customer's request for repaired or replacement Software, unless it is not reasonable for Adobe to do so, in which case Adobe will

provide Customer with a refund. For warranty assistance, please contact the Adobe Customer Support Department.

Please note that the provisions of Section 8 (Limitation of Liability) will continue to apply to any damages claims Customer makes in respect of its use of the Software. Nonetheless, Adobe shall be liable for direct losses that are reasonably foreseeable in the event of a breach by Adobe of this agreement. Customer is advised to take all reasonable measures to avoid and reduce damages, in particular by making back-up copies of the Software and its computer data.

This agreement, and in particular this Section 16.1.2, is intended to describe Customer's rights (including its statutory rights) in the event there should be problems with its use of the Software. If Customer's statutory rights are greater than this description, its statutory rights shall apply.

16.1.3 Nothing included in this agreement (including Section 4.4) shall limit any non-waivable right to decompile the Software that Customer may enjoy under applicable law. For example, if Customer is located in the European Union (EU), Customer may have the right upon certain conditions specified in the applicable law to decompile the Software if it is necessary to do so in order to achieve interoperability of the Software with another software program, and Customer has first asked Adobe in writing to provide the information necessary to achieve such operability and Adobe has not made such information available. In addition, such decompilation may only be performed by Customer or someone else entitled to use a copy of the Software on Customer's behalf. Adobe has the right to impose reasonable conditions before providing such information. Any information supplied by Adobe or obtained by Customer, as permitted hereunder, may only be used by Customer for the purpose described herein and may not be disclosed to any third party or used to create any software that is substantially similar to the expression of the Software or used for any other act that infringes the copyright of Adobe or its licensors.

16.1.4 If Customer obtains the Software in Australia, then the following provision shall apply, notwithstanding anything stated to the contrary in this Agreement:

NOTICE TO CONSUMERS IN AUSTRALIA:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any

other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Our software products also come with a 90-day limited warranty given by Adobe Systems Software Ireland Limited, with an office at 4-6 Riverwalk, Citywest Business Campus, Dublin, Ireland, as set out in the Agreement. If your products do not provide the general features and functions described in the User Documentation in the 90-day period after delivery to you, please call the Adobe Customer Support Department at 1800 614 863 with details of your product, serial number, and proof of purchase. You may be required to return the software product to the address we provide to you at the time, in which case such return will be at your own cost. The benefits under this warranty are in addition to other rights and remedies that you may have at law.

16.2 Pre-release Software Additional Terms. If the Software is pre-commercial release or beta software ("Pre-release Software"), then this section applies. The Pre-release Software does not represent final product from Adobe, and may contain bugs, errors, and other problems that could cause system or other failures and data loss. Adobe may never commercially release the Pre-release Software. If Customer received the Pre-release Software pursuant to a separate written agreement, such as the Adobe Systems Incorporated License Agreement for Pre-release Software, then Customer's use of the Software is also governed by such agreement. Customer will promptly return or destroy all copies of Pre-release Software upon the earlier of Adobe's request or upon Adobe's commercial release of such Software. CUSTOMER'S USE OF PRE-RELEASE SOFTWARE IS AT ITS OWN RISK. SEE SECTIONS 6 AND 8 FOR LIMITED WARRANTY AND LIABILITY LIMITATIONS RELATED TO PRE-RELEASE SOFTWARE.

16.3 Educational Software Product. If the Software is Educational Software Product (Software manufactured and distributed for use only by Educational End Users), Customer is not entitled to use the Software unless Customer qualify in its jurisdiction as an Educational End User. Please visit http://www.adobe.com/go/edu_purchasing to learn about eligibility. Please visit http://www.adobe.com/go/store and look for the link for Buying Adobe Products Worldwide to find an Adobe Authorized Academic Reseller.

16.4 Online Services.

16.4.1 Provided by Adobe. The Software facilitates Customer's access to content and various services that are hosted on websites maintained by Adobe or its affiliates ("Adobe Online Services"). Examples of such Adobe Online Services might include, but are not limited to: Adobe BrowserLab, Adobe CS Review, Business Catalyst, Digital Publishing Suite,

Acrobat.com, Search for Help, and product Welcome Screens. In some cases an Adobe Online Service might appear as a feature or extension within the Software even though it is hosted on a website. Access to an Adobe Online Service may require Customer to activate the Software, obtain an Adobe ID, consent to Additional Terms of Use, or require a separate fee in order to access such Adobe Online Services. Adobe Online Services might not be available in all languages or to residents of all countries and Adobe may, at any time and for any reason, modify or discontinue the availability of any Adobe Online Service. Adobe also reserves the right to begin charging a fee for access to or use of an Adobe Online Service that was previously offered at no charge. Section 14 states important information regarding Internet connectivity and Customer's privacy. As stated in Section 14, when the Software accesses an Adobe Online Service, Customer's use of such Adobe Online Service is governed by the Adobe Privacy Policy (http://www.adobe.com/go/privacy), by the Adobe.com Terms of Use (http://www.adobe.com/go/terms), and by any Additional Terms of Use that might be presented to Customer at that time.

16.4.2 Provided by Third Parties. The Software may facilitate Customer's access to websites maintained by third parties offering goods, information, software, and services ("Third Party Online Services"). Examples of such Third Party Online Services might include, but are not limited to, the Kodak EasyShare Gallery service. Customer's access to and use of any Third Party Online Services is governed by the terms, conditions, disclaimers, and notices found on such site or otherwise associated with such Third Party Online Services. Adobe does not control, endorse, or accept responsibility for Third Party Online Services. Any dealings between Customer and any third party in connection with a Third Party Online Service, including such party's privacy policies and use of Customer's personal information, delivery of and payment for goods and services, and any other terms, conditions, warranties, or representations associated with such dealings, are solely between Customer and such third party. Third Party Online Services might not be available in all languages or to residents of all countries and Adobe may, at any time and for any reason, modify or discontinue the availability of any Third Party Online Service.

16.4.3 EXCEPT AS EXPRESSLY AGREED BY ADOBE OR ITS AFFILIATES OR A THIRD PARTY IN A SEPARATE AGREEMENT, CUSTOMER'S USE OF ADOBE ONLINE SERVICES AND THIRD PARTY ONLINE SERVICES IS AT ITS OWN RISK UNDER THE WARRANTY AND LIABILITY LIMITATIONS OF SECTIONS 7 AND 8.

16.5 Digital Certificates.

16.5.1 Use. Digital certificates are issued by third party certificate authorities, including Adobe Certified Document Services (CDS) vendors listed at http://www.adobe.com/go/partners_cds and Adobe Approved Trust List vendors ("AATL") listed at http://www.adobe.com/go/aatl (collectively "Certificate Authorities"), or can be self-signed.

16.5.2 Terms and Conditions. Purchase, use, and reliance upon digital certificates is the responsibility of Customer and a Certificate Authority. Before Customer relies upon any certified document, digital signature, or Certificate Authority services, Customer should review the applicable terms and conditions under which the relevant Certificate Authority provides services, including, for example, any subscriber agreements, relying party agreements, certificate policies, and practice statements. See the links on http://www.adobe.com/go/partners_cds for information about Adobe's CDS vendors and http://www.adobe.com/go/aatl for information about AATL vendors.

16.5.3 Acknowledgement. Customer agrees that (a) the Software, due to configuration or external issues, might show a signature as valid despite the fact a digital certificate may have been revoked or expired prior to the time of verification; (b) the security or integrity of a digital certificate may be compromised due to an act or omission by the signer of the document, the applicable Certificate Authority, or any other third party; and (c) a certificate may be a self-signed certificate not provided by a Certificate Authority. CUSTOMER IS SOLELY RESPONSIBLE FOR DECIDING WHETHER OR NOT TO RELY ON A CERTIFICATE. UNLESS A SEPARATE WRITTEN WARRANTY IS PROVIDED TO CUSTOMER BY A CERTIFICATE AUTHORITY, CUSTOMER'S USE OF DIGITAL CERTIFICATES IS AT ITS SOLE RISK.

16.5.4 Third-Party Beneficiaries. Customer agrees that any Certificate Authority which the Customer relies upon is a third-party beneficiary of this agreement and shall have the right to enforce this agreement in its own name as if it were Adobe.

16.5.5 Indemnity. Customer agrees to hold Adobe and any applicable Certificate Authority (except as expressly provided in its terms and conditions) harmless from any and all liabilities, losses, actions, damages, or claims (including all reasonable expenses, costs, and attorneys' fees) arising out of or relating to Customer's use of, or any reliance on, any service of such authority, including, without limitation: (a) reliance on an expired or revoked certificate; (b) improper verification of a certificate, (c) use of a certificate other than as permitted by any applicable terms and conditions, this agreement or applicable law; (d) failure to exercise reasonable judgment under the circumstances in relying on issuer services or certificates; or (e) failure to perform any of the obligations as required in the terms and conditions related to the services.

16.6 Font Software. If the Software includes font software:

16.6.1 Customer may use the font software with the Software on Computers as described in Section 2 and output the font software to any output device(s) connected to such Computer(s).

16.6.2 If the Permitted Number of Computers is five (5) or fewer, Customer may download the font software to the memory (hard disk or RAM) of one output device connected to at least one of such Computers for the purpose of having the font software remain resident in such output device, and of one more such output device for every multiple of five represented by the Permitted Number of Computers.

16.6.3 Customer may take a copy of the font(s) Customer has used for a particular file to a commercial printer or other service bureau, and such service bureau may use the font(s) to process its file, provided such service bureau has a valid license to use that particular font software.

16.6.4 Customer may embed copies of the font software into its electronic documents for the purpose of printing, viewing, and editing the document. No other embedding rights are implied or permitted under this license.

16.6.5 As an exception to the above, the fonts listed at http://www.adobe.com/go/restricted_fonts are included with the Software only for purposes of operation of the Software user interface and not for inclusion within any Output Files. Such listed fonts are not licensed under this Section 16.6. Customer agrees that it will not copy, move, activate or use, or allow any font management tool to copy, move, activate or use, such listed fonts in or with any software application, program, or file other than the Software.

16.7 After Effects Render Engine. If the Software includes the full version of Adobe After Effects, then Customer may install an unlimited number of Render Engines on Computers within its Internal Network which includes at least one Computer on which the full version of the Adobe After Effects software is installed. The term “Render Engine” means an installable

portion of the Software that allows After Effects projects to be rendered but which cannot be used to create or modify projects and does not include the complete After Effects user interface.

16.8 Acrobat Standard, Acrobat Pro, and Adobe Acrobat Suite Features. If the Software includes Acrobat Standard, Acrobat Pro, Acrobat Suite, or certain features within the above software, then this Section 16.8 shall apply.

16.8.1 Additional Definitions.

16.8.1.1 “Deploy” means to deliver or otherwise make available, directly or indirectly, by any means including but not limited to a network or Internet, an Extended Document to one or more recipients.

16.8.1.2 “Extended Document” means a PDF file manipulated by the Software to enable the ability to locally save documents with filled-in PDF forms.

16.8.2 The Software may include enabling technology that allows Customer to enable PDF documents with certain features through the use of a digital credential located within the Software (“Key”). Customer agrees not to access, attempt to access, control, disable, remove, use, or distribute the Key for any purpose.

16.8.3 For any unique Extended Document Customer may only either (a) Deploy such Extended Document to an unlimited number of unique recipients, but Customer shall not extract information or cause the information to be extracted from more than five hundred (500) unique instances of such Extended Document or any hardcopy representation of such Extended Document containing filled form fields; or (b) Deploy such Extended Document to no more than five hundred (500) unique recipients without limits on the number of times Customer may extract information from such Extended Document returned to Customer filled-in by such recipients. Notwithstanding anything herein to the contrary, obtaining additional licenses to use Acrobat Standard, Acrobat Pro, or Adobe Acrobat Suite shall not increase the foregoing limits (that is, the foregoing limits are the aggregate total limits regardless of how many additional licenses to use Acrobat Standard, Acrobat Pro, or Adobe Acrobat Suite Customer may have obtained).

16.9 Flash Player Projectors and Runtime. Customer's rights to use any Flash player, projector, standalone player, plug-in, runtime, or ActiveX control provided to Customer as part of or with the Software, or in an Output File shall be governed by terms available at http://www.adobe.com/go/flashplayer_usage. Unless and except as provided therein, Customer shall have no rights to use or distribute such software.

16.10 Contribute Publishing Services. Subject to the Contribute Publishing Services software end user license agreement accompanying such software, Customer shall not connect to the Contribute Publishing Services software unless Customer has purchased a license to connect to such Contribute Publishing Services software for each individual who may connect to such Contribute Publishing Services software; provided, however, that trial versions of Adobe Contribute software may install and connect to the Contribute Publishing Services software in accordance with the Contribute Publishing Services software end user license agreement.

16.11 Adobe Presenter. If the Software includes Adobe Presenter and Customer installs or uses the Adobe Connect Add-in in connection with the use of the Software, Customer agrees that it will install and use such add-in only on a desktop Computer and not on any non-PC product, including, but not limited to, a web appliance, set top box, handheld, phone, or web pad device. Further, the portion of the Software that is embedded in a presentation, information, or content created and generated using the Software (the "Adobe Presenter Run-Time") may only be used together with the presentation, information, or content in which it is embedded. Customer shall not use, and shall cause all licensees of such presentation, information, or content not to use, the Adobe Presenter Run-Time other than as embedded in such presentation, information or content. In addition, Customer shall not use, and shall cause all licensees of such presentation, information, or content not to, modify, reverse engineer, or disassemble the Adobe Presenter Run-Time.

16.12 Flash Builder with LiveCycle Data Services (LCDS) Data Management Library. Adobe Flash Builder may include the fds.swc library. Customer may use fds.swc only to provide client-side data management capabilities and as an output file within software Customer develops, subject to the following: Customer may not (a) use fds.swc to enable associations or offline capabilities within software or (b) incorporate fds.swc into any software that is similar to Adobe LiveCycle Data Services or BlazeDS. If Customer would like to do any of the foregoing, Customer will need to request a separate license from Adobe.

16.13 Digital Publishing Suite. The following terms apply if Software includes certain components or features designed to work with or access Digital Publishing Suite, subject to the Additional Terms of Use for Digital Publishing Suite. “DPS Desktop Tools” means Folio Overlays Panel, Folio Builder Panel, Content Viewer for Desktop, and Digital Publishing Plug-in for InDesign. If the Software includes DPS Desktop Tool (or any component thereof), then, except as otherwise provided in this Section 16 or the Additional Terms of Use, Customer may install and use the DPS Desktop Tools solely for the purposes of (a) creating or producing the content designed to be displayed within the Content Viewer (“Output”), (b) evaluating and testing the Output, and (c) where available, accessing and using the Adobe Digital Publishing Suite services pursuant to the Additional Terms of Use. Except as otherwise permitted herein, Customer may not display, distribute, modify, or publicly perform the DPS Desktop Tools.

16.14 AVC DISTRIBUTION. The following notice applies to Software containing AVC import and export functionality: THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL NON-COMMERCIAL USE OF A CONSUMER TO (a) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD (“AVC VIDEO”) AND/OR (b) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE http://www.adobe.com/go/mpegla.

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16.16 Apple. If the Software is downloaded from the Apple iTunes Application Store (“App”), then Customer acknowledges and agrees to the following additional terms: (a) Apple has no liability for the App and its content; (b) Customer’s use of the App is limited to a non-transferable license to use the App on any iPhone™, iPad™ or iPod Touch™ that Customer owns or controls as allowed by the Application Store Terms of Service; (c) Apple has no obligation whatsoever to furnish any maintenance and support services for the App; (d) to the extent permitted by applicable law, Apple has no warranty obligation to the App and Adobe will be responsible for any claims, losses, liabilities, damages, costs, or expenses attributable to any failure to conform to any warranty set forth in this Agreement; (e) Apple is not liable for any

claims relating to the App or Customer's possession and/or use of the App, including, but not limited to: (i) product liability claims; (ii) any claim that the App fails to conform to any applicable legal requirement; and (iii) consumer protection claims; (f) Apple is not liable for any third-party claims that the App infringes a third party's intellectual property rights; and (g) Apple and its subsidiaries are third party beneficiaries of this Agreement with respect to any such App, and that Apple will have the right to enforce the Agreement against Customer as a third party beneficiary.

16.17 Adobe FrameMaker. If the Software includes Adobe FrameMaker or RoboHelp software, use of the Adobe PDF Creation Add-On software that may be installed with FrameMaker or RoboHelp software is permitted only in conjunction with the FrameMaker or RoboHelp software. All other uses of the Adobe PDF Creation Add-on software under this license, including use with other software or applications, are prohibited.

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Legal

Articulate 360 General Terms of Service

Last updated April 3, 2017

As used herein, the term, "you" and "your" refers to the individual or entity that is using the Services, as defined below, and "we" and "our" refers to Articulate Global, Inc. (also referred to as "Articulate"). These Articulate 360 General Terms of Service (these "Terms") govern your use of our services such as Articulate 360, which includes the Articulate-proprietary software and third party licensed software that powers our services, and any related software applications, as well as any Content Files (defined below), and any related user documentation (collectively the "Services"). **By using the Services, you agree to these Terms. As discussed more in Section 3 below, you retain all rights and ownership you have in your content that you make available through the Services.**

1. How this Agreement Works.

1.1. Choice of Law. These Terms, and our provision and your use of the Services are governed by the laws of New York, U.S.A. You may have additional rights under mandatory law. We do not seek to limit those rights to the extent prohibited by law.

1.2. Eligibility. You may only use the Services if you are (a) over 18 years old and (b) allowed by law to enter into a binding contract.

1.3. Privacy. The Privacy Policy at https://articulate.com/privacy governs any personal data or personally identifiable information you provide to us. **The Services are subject to the terms of the Articulate Privacy Policy.**

1.4. Availability. Services descriptions may be accessible worldwide but for clarity, this does not mean all Services or service features are accessible in all languages or all areas, or that user-generated content available via the Services is legally compliant in all areas. It is your responsibility to make sure your use of the Services is available and legally compliant in your area.

1.5. Modification We may modify, update, or discontinue any or all of the Services (including any of their portions or features) at any time without liability to you or anyone else. We may modify these Terms or any additional terms that apply to the Services in order to, for example, reflect changes to the law or changes to our Services. You should look at these Terms (and any other applicable terms, such as the Privacy Policy) regularly. We will post notice of modifications to these Terms on this page or via email to you. We will post notice of modified additional terms in the applicable Services interface. By continuing to use or access the Services after the revisions come into effect, you agree to be bound by the revised terms. However, we will make reasonable effort to notify you before we make the change. We will also allow you a reasonable time to download your content from the Services, should you notify us of your election to discontinue using the Services due to our change(s) to the Terms. If we discontinue a Service in its entirety, or if you notify us within ten (10) business days following a change to these Terms taking effect, then we will provide you with a pro rata refund for any unused fees for that Service that you may have prepaid, in which event, your right to use the Services will be discontinued. This will be your sole remedy in the event we modify, update, or discontinue any of the Services, or if we modify these Terms.

2. Use of Service.

2.1. Articulate ID. You need to sign up for an Articulate user account by providing all required information in order to access or use Services and by selecting a unique user credential (the “Articulate ID”). If you represent an organization and wish to use the Services for your organization's use, we recommend that you, and all other users from

your organization, create Articulate IDs using your organization's contact information. In particular, we recommend that you use your organization's email address. You agree to: (i) provide true, accurate, current and complete information about yourself as prompted by the sign up process; and (ii) maintain and promptly update the information provided during sign up to keep it true, accurate, current, and complete; and (iii) not share your Articulate ID with any third party. If you provide any information that is untrue, inaccurate, outdated, or incomplete, or if Articulate has reasonable grounds to suspect that such information is untrue, inaccurate, outdated, or incomplete, Articulate may terminate your user account and refuse current or future use of any or all of the Services.

2.2. Activation. The Services may require you to take certain steps to activate your license or validate your subscription. If we determine that the Services have been used fraudulently or without authorization, we may reduce the functionality, operability, or availability of the Services, and/or suspend or terminate the license or subscription.

2.3. License. Subject to your compliance with these Terms and the law, we grant you a limited, personal, non-exclusive, non-transferable, non-sublicenseable, fee-bearing license to install and use the Services for your or your organization's internal business purposes, so long as your applicable license and/or subscription is valid.

2.4. License Limitations You may activate the Services on up to two desktop devices and up to two mobile devices at a time (maximum four total activations), provided that these activations are associated with the same Articulate ID. However, the Services may not be used simultaneously on these devices.

2.5. Restrictions. We (and our licensors) remain the sole owner of all right, title, and interest in the Services. We reserve all rights not granted under these Terms. Without limiting the generality of the foregoing, unless permitted in these Terms, you must not (and must not permit any third party to):

a. modify, port, adapt, or translate any software or other intellectual property elements underlying the Services;

b. reverse engineer, decompile, disassemble, or otherwise attempt to discover the source code of any software or other intellectual property elements underlying the Services. (If however, directly applicable law prohibits enforcement of the foregoing, you may engage in reverse engineering solely for purposes of obtaining such information as is necessary to achieve interoperability of independently

created software with the Services, or as otherwise and to the limited extent permitted by directly applicable law, but only if: (a) such reverse engineering is strictly necessary to obtain such information; and (b) you have first requested such information from Articulate and Articulate failed to make such information available (for a fee or otherwise) under reasonable terms and conditions. Any information supplied to or obtained by you under this section is the confidential and proprietary information of Articulate, may be used by you only for the purpose described in this section, and will not be disclosed to any third party or used to create any software which is substantially similar to the expression of the software underlying the Services);

c. use or offer the Services on a service bureau basis;

d. host or stream the Services or allow access to the Services;

e. circumvent technological measures intended to control access to the Services or develop, distribute, or use with the Services, products that circumvent the technological measures;

f. rent, lease, sell, sublicense, assign, or transfer your rights in the Services, or authorize any portion of the Services to be copied onto another's device. If you license the multi-user Services commonly referred to as “Articulate 360 Teams” (or such other product or service name that Articulate may designate from time to time) (for such purposes, “Articulate 360 Teams”), then the Articulate 360 Teams administrator may designate Articulate 360 Teams seats pursuant to the applicable documentation for Articulate 360 Teams. In addition, should an Articulate 360 Teams user no longer require use of Articulate 360 Teams, the administrator may reassign such usage rights to a new Articulate 360 Teams user, so long as the maximum number of Articulate 360 Teams users (for whom licenses have been purchased) is not exceeded;

g. make any copy of the any software or other intellectual property elements underlying the Services without preserving all copyright and other proprietary notices that appear on or in the Services or such software or other intellectual property elements;

h. use Articulate's name, logo, trademarks, service marks, or other branding elements without Articulate's prior written consent on a case-by-case basis. Such consent, if granted, is subject to revocation by Articulate at any time. Any use of

the foregoing shall be in compliance with Articulate's then-current trademark usage and branding guidelines.

2.6. Terms Applicable to Reviewers and/or Commenters. Any individual(s) whom you select to provide review and comment functions within Articulate Review need not be Articulate subscribers or customers for such purpose; however, each such reviewer will need to provide their email address or sign in with their Articulate ID, depending on the settings you choose. You will be responsible for such reviewers' acts and omissions with regards to their activities in conjunction with Articulate Review.

2.7. Updates. The Services may automatically download and install updates from time to time from Articulate. These updates may take the form of bug fixes, new features, or new versions. You agree to receive such updates from Articulate as part of your use of the Services, as applicable.

2.8. Third Party Software. The Services may contain third-party software, subject to additional terms and conditions, available at https://articulate.com/thirdparty

2.9. Notice to U.S. Government End Users. For U.S. Government procurements, Software is a commercial computer software as defined in FAR 12.212 and subject to restricted rights as defined in FAR Section 52.227-19 "Commercial Computer Software - Restricted Rights" and DFARS 227.7202, "Rights in Commercial Computer Software or Commercial Computer Software Documentation", as applicable, and any successor regulations. Any use, modification, reproduction release, performance, display, or disclosure of the Software by the U.S. Government must be in accordance with license rights and restrictions described in these Terms.

2.10. Storage When the Services provide storage, we recommend that you continue to back up your content regularly. We may create reasonable technical limits on your content, such as limits on file size, storage space, processing capacity, and other technical limits. We may suspend the Services until you are within the storage space limit associated with your account.

2.11. Content Files. "Content Files" means Articulate-provided files such as character images and illustrations, templates, interactions or other pre-built content as part of the Services. Unless the documentation or specific license associated with the Content Files states otherwise, you may use, display, modify, reproduce, and distribute any of the Content Files as part of the Services. However, you may not distribute the Content Files on a stand-alone basis.

2.12. Other License Types.

Legal

(a) Pre-release Version. We may designate the Services as a pre-release or beta version ("Pre-release Version"). Pre-release Version does not represent the final product and may contain bugs that may cause system or other failure and data loss. We may choose not to commercially release the Pre-release Version. You must promptly cease using the Pre-release Version and destroy all copies of Pre-release Version if we request you to do so, or if we release a commercial version of the Pre-release Version. Any separate agreement we enter into with you governing the Pre-release Version will supersede the provisions on Pre-Release Version set out in this section. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, PRE-RELEASE VERSIONS ARE PROVIDED BY ARTICULATE WITHOUT WARRANTY, SUPPORT, OR INDEMNIFICATION.

(b) Academic Version. If we designate the Services as being for use by educational users ("Academic Version"), then you may only use the Academic Version if you meet the eligibility requirements provided for by Articulate. Articulate or its authorized resellers will determine if you meet the academic requirements.

(c) Trial Licenses. Trial licenses are available under a one-time 30-day evaluation period. You agree to provide Articulate certain information as indicated on the trial download form. At the end of the trial period, and unless the trial is converted to a paid subscription, the Services will automatically terminate, and Articulate will delete any content that was uploaded to the Storage provided for as part of the trial. Articulate reserves the right to terminate your trial at its sole discretion. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, TRIAL VERSIONS ARE PROVIDED BY ARTICULATE WITHOUT WARRANTY OR INDEMNIFICATION.

2.13. Support Policy We will provide support consistent with our then-current Articulate 360 Support Policy: https://articulate.com/support/360/policy.

3. Your Content.

3.1. Ownership. You retain all rights and ownership of your content. We do not claim any ownership rights to your content.

3.2. Licenses to Your Content in Order to Operate the Services. We require certain licenses from you to your content to operate and enable the Services. When you upload content to the Services, you grant us a non-exclusive, worldwide, royalty-free, sub-licensable, and transferable license to access, use, reproduce, distribute, and translate the content as needed in response to user driven actions (such as when you choose to store privately or share your content with others) for the legal duration of protection of such rights. **This license is granted for the purposes of: (a) providing, operating, or improving the Services; (b) responding to support requests; (c) detecting, preventing, or otherwise addressing fraud, security, unlawful, or technical issues; and (d) enforcing these Terms.**

3.3. Sharing Your Content.

> **(a) Sharing.** Some Services may provide features that allow you to Share your content with other users or to make it public. "Share" means to email, post, transmit, upload, or otherwise make available (whether to us or other users) through your use of the Services. Other users may use, copy, modify, or re-share your content in many ways. Please consider carefully what you choose to Share or make public as you are entirely responsible for the content that you Share.
>
> **(b) Level of Access.** We do not monitor or control what others do with your content. You are responsible for determining the limitations that are placed on your content and for applying the appropriate level of access to your content. If you do not choose the access level to apply to your content, the system may default to its most permissive setting. It's your responsibility to let other users know how your content may be Shared and adjust the setting related to accessing or sharing of your content.
>
> **(c) Comments.** The Services may allow you to comment on content. Comments are not anonymous, and may be viewed by other users. Your comments may be deleted by you, other users, or us.

3.4. Termination of License. You may revoke this license to your content and terminate our rights at any time by removing your content from the Service. However, some copies of your content may be retained as part of our routine backups.

3.5. Feedback. You have no obligation to provide us with ideas, suggestions, or proposals ("Feedback"). However, if you submit Feedback to us, then you grant us a nonexclusive, worldwide, royalty-free license, for the legal duration of protection of rights that is sublicensable and transferrable, to make, use, sell, have made, offer to sell, import, reproduce, publicly display, distribute, and modify the Feedback.

4. Account Information.

You are responsible for all activity that occurs via your account. Please notify Articulate Customer Support or your authorized Articulate reseller immediately if you become aware of any unauthorized use of your account. You may not (a) share your account information (except with an authorized account administrator) or (b) use another person's account.

Your account administrator(s) may use your account information to manage your access to the Services.

5. User Conduct.

5.1. Responsible Use. The Articulate communities often consist of users who expect a certain degree of courtesy and professionalism. Articulate is committed to protecting Articulate's employees, partners, customers, and users from illegal or damaging actions by individuals, either knowingly or unknowingly. Articulate's platform and systems, including but not limited to computer equipment, software, operating systems, storage media, network accounts, websites, and file transfer sites are to be used for lawful and legitimate business purposes, in the course of normal operations. Supporting the above is a team effort involving the participation and support of all individuals and organizations that deal with the Services. The purpose of this section is to outline the acceptable use of the Services, and are designed to protect Articulate and all customers and users against risks, including virus attacks, compromise of network systems and

services, and legal issues. Articulate does not guarantee that by all users complying with this section, all risks and potential liability will be eliminated. Risks come from many different sources, and while Articulate has taken reasonable steps to ensure that the likelihood of risk is reduced, it cannot be completely eliminated.

5.2. Misuse. You agree that you will not (directly or indirectly, through a third party):

(a) copy, modify, host, stream, sublicense, or resell the Services;

(b) enable or allow others to use the Services using your account information;

(c) access or attempt to access the Services by any means other than the interface we provided or authorized;

(d) circumvent any access or use restrictions put into place to prevent certain uses of the Services;

(e) share content or engage in behavior that violates anyone's Intellectual Property Right ("Intellectual Property Rights" means copyright, moral rights, trademark, trade dress, patent, trade secret, unfair competition, right of privacy, right of publicity, and any other proprietary rights);

(f) upload or share any content that is unlawful, harmful, threatening, abusive, tortious, defamatory, libelous, vulgar, lewd, profane, invasive of another's privacy, or hateful;

(g) impersonate any person or entity, or falsely state or otherwise misrepresent your affiliation with a person or entity;

(h) attempt to disable, impair, or destroy the Services;

(i) disrupt, interfere with, or inhibit any other user from using the Services (such as stalking, intimidating, or harassing others, inciting others to commit violence, or harming minors in any way),

(j) engage in chain letters, junk mails, pyramid schemes, spamming, or other unsolicited messages;

(k) place advertisement of any products or services in the Services;

(l) use any data mining or similar data gathering and extraction methods in connection with the Services; or

(m) violate applicable law.

Legal

6. Fees and Payment; Term and Renewal.

6.1. General. You agree to pay any and all applicable charges associated with your account, in advance, regardless of usage. For non-credit card-based transactions, payment is due within thirty (30) days following the date of Articulate's invoice, and any amount not paid when due is subject to interest at a rate that is the lower of: (a) one percent (1%) per month or (b) the highest interest rate permissible under applicable law, and without limiting the generality of the foregoing, we reserve the right to suspend and/or terminate any order (and/or license, access, or other rights to the related Services) for which fees are not paid when due. No refunds or credits for subscription charges or other fees or payments will be provided to you if you elect to cancel or downgrade your Services plan or scope of license, access, or other rights with respect thereto.

6.2. Taxes and Third-Party Fees. You must pay any applicable taxes, and any applicable third-party fee (including, for example telephone toll charges, mobile carrier fees, ISP charges, data plan charges, credit card fees, foreign exchange fees). We are not responsible for these fees. If you are required to withhold sales, transaction, VAT, GST, or similar tax from any payment to Articulate under this Agreement, you will be entitled to withhold or deduct such tax from the gross amount to be paid. However, you will “gross up” the payments so that Articulate receives the amount actually quoted and invoiced, and you will use all endeavors to reduce any such withholding tax payable to the lowest possible rate subject to compliance with all applicable laws and double taxation treaties. We may take steps to collect the fees you owe us. You are responsible for all related collection costs and expenses.

6.3. Credit Card Information. You agree to keep your credit card and other billing information that is provided to Articulate up to date at all times. If you do not notify us of updates to your payment method, to avoid interruption of your service, we may participate in programs supported by your card provider to try to update your payment information, and you authorize us to continue billing your account with the updated information that we obtain.

6.4. Contract Term. The term of this Agreement will commence in accordance with the applicable order form, and it will continue until terminated in accordance with Section 11 hereof.

6.5. Cancellation/Nonrenewal. During the first thirty (30) days of your initial subscription, you may elect to cancel your order to the Services; in such event, Articulate will, as its sole obligation, refund your prepaid fees. Otherwise, but subject to Section 1, your account and subscription will be non-cancellable, and fees are non-refundable. Your and our right to extraordinary termination for cause shall remain unaffected. We shall be entitled to extraordinary termination as set out in Section 11.3 below. In case you terminate for cause, upon your written request (within thirty (30) days following the effective date of such termination), we will partially refund your prepaid fees for the remainder of the term. Subject to the foregoing terms, cancellations can be made by contacting Articulate Customer Support. Either you or Articulate may elect to not renew your account and subscription to the Service as of the end of your then current Service term, by providing notice, in accordance with these Terms, on or prior to the last day of the then-current term. Unless otherwise provided for in any form that Articulate and you mutually accept, the fees for your Services subscription for each subsequent term will be Articulate's standard, then-current charges for the applicable Services. Unless otherwise expressly set forth in these Terms, no refunds or credits for fees or payments will be provided to you if you terminate your subscription to the Services or cancel your account prior to the end of your then-effective subscription term. Following the termination or cancellation of your subscription to the Services and/or related account, we reserve the right to delete all your data and content in the normal course of operation. Your data and content cannot be recovered once your account is cancelled.

6.6. Additional Commercial Terms for Articulate 360 Teams. The purchaser of an Articulate 360 Teams subscription may purchase additional user subscriptions at any time. Added user subscriptions are priced at the rates available at the time of purchase and are prorated based on the days remaining in your contract. All Articulate 360 Teams subscriptions under a specific plan will have the same scheduled subscription end date, subject to renewal as set forth herein. Further, upon renewal, Articulate will charge you for the number of seats at the time of such renewal.

6.7. Promotional Discount and/or Exchange/Conversion Credits Under certain mutually agreeable circumstances, Articulate may, in its sole discretion, grant a promotional discount and/or an exchange and/or credit for unused portions of Articulate

services, upgrades or licenses. Upon issuance of such promotional discount and/or an exchange or credit, you agree to terminate applicable agreements and waive Articulate's obligations and your rights thereunder. Additional details regarding the discount, exchange, and/or credit described above will be set forth in the applicable order which, by accepting such order, you thereby confirm that Articulate has no further obligations under such terminated and/or waived agreement or arrangement, as such obligations will be deemed fully satisfied by Articulate.

7. Your Warranty and Indemnification Obligations.

7.1. Warranty. By uploading your content to the Services, you agree that you have: (a) all necessary licenses and permissions to use and Share your content and (b) the rights necessary to grant the licenses in these Terms.

7.2. Indemnification. You will indemnify us and our subsidiaries, affiliates, officers, agents, employees, partners, and licensors from any claim, demand, loss, or damages, including reasonable attorneys' fees, arising out of or related to your content, your use of the Services, or your violation of these Terms.

8. Our Warranty and Indemnification Obligations.

8.1. TO THE MAXIMUM EXTENT PERMITTED BY LAW, WE DISCLAIM ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. WE MAKE NO COMMITMENTS ABOUT THE CONTENT WITHIN THE SERVICES. TO THE EXTENT PERMITTED BY LAW WE FURTHER DISCLAIM ANY WARRANTY THAT (A) THE SERVICES WILL MEET YOUR REQUIREMENTS OR WILL BE CONSTANTLY AVAILABLE, UNINTERRUPTED, TIMELY, SECURE, OR ERROR-FREE; (B) THE RESULTS THAT MAY BE OBTAINED FROM THE USE OF THE SERVICES WILL BE EFFECTIVE, ACCURATE, OR RELIABLE; (C) THE QUALITY OF THE SERVICES WILL MEET YOUR

EXPECTATIONS; OR THAT (D) ANY ERRORS OR DEFECTS IN THE SERVICES WILL BE CORRECTED.

8.2. Indemnification by Us. If a third party initiates a claim against you, claiming that the Services directly infringe any copyrights or misappropriate any trade secrets, we will pay the costs and damages that a court (having final jurisdiction) awards against you in the lawsuit, to the extent that the costs and damages directly relate to the claim. Alternatively, we will pay the costs and damages that we agree to in a written settlement of the lawsuit. Our obligations under this paragraph apply only if you: (a) promptly notify us of the lawsuit in writing, (b) allow us to control the defense of the lawsuit and any related settlement negotiations, and (c) cooperate with us and, at our request and expense, assist us in the defense or settlement of the lawsuit. Also, our obligations under this paragraph do not apply to any infringement claim based upon: (i) any use of the Services not in accordance with this Agreement; (ii) any use of the Services in combination with other products, equipment, software, or data that we do not supply; (iii) any use of any release of the Services other than the most current release made available to you or (iv) any modification of the Services by any person other than us. To the maximum extent permitted by law, this paragraph states our entire liability and your sole and exclusive remedy for infringement claims and actions against you.

9. Limitation of Liability.

9.1. WE ARE NOT LIABLE TO YOU OR ANYONE ELSE FOR: (A) ANY LOSS OF USE, DATA, GOODWILL, OR PROFITS, WHETHER OR NOT FORESEEABLE; AND (B) ANY SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES WHATSOEVER (EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF THESE DAMAGES), INCLUDING THOSE: (1) RESULTING FROM LOSS OF USE, DATA, OR PROFITS, WHETHER OR NOT FORESEEABLE, (2) BASED ON ANY THEORY OF LIABILITY, INCLUDING BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORTIOUS ACTION, OR (3) ARISING FROM ANY OTHER CLAIM ARISING OUT OF OR IN CONNECTION WITH YOUR USE OF OR ACCESS TO THE SERVICES. NOTHING IN THESE TERMS LIMITS OR EXCLUDES OUR LIABILITY.

9.2. OUR TOTAL LIABILITY IN ANY MATTER ARISING OUT OF OR RELATED TO THESE TERMS IS LIMITED TO $100 (USD) OR THE AGGREGATE AMOUNT THAT YOU PAID FOR ACCESS TO THE SERVICES DURING THE THREE-MONTH PERIOD PRECEDING THE EVENT GIVING RISE TO THE LIABILITY, WHICHEVER IS LARGER. THIS LIMITATION WILL APPLY EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF THE LIABILITY EXCEEDING THE AMOUNT AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY.

9.3. SUBJECT TO AND WITHOUT LIMITING OUR EXPRESS OBLIGATIONS SET FORTH IN THESE TERMS, (A) WE SPECIFICALLY DISCLAIM ANY LIABILITY FOR ANY ACTIONS RESULTING FROM YOUR USE OF ANY SERVICES; (B) YOU MAY USE AND ACCESS THE SERVICES AT YOUR OWN DISCRETION AND RISK; AND (C) YOU ARE SOLELY RESPONSIBLE FOR ANY DAMAGE TO YOUR COMPUTER SYSTEM OR LOSS OF DATA THAT RESULTS FROM THE USE AND ACCESS OF ANY SERVICES.

9.4. THE LIMITATIONS AND EXCLUSIONS IN THIS SECTION 9 APPLY TO THE MAXIMUM EXTENT PERMITTED BY LAW.

10. Confidential Information.

You acknowledge our claim that the Services and this website embody non-public information consisting of logic, design, and coding methodology, which constitute valuable confidential information and trade secrets that are proprietary to us and our licensors ("Confidential Information and Trade Secrets"). You agree (i) to not use or disclose our Confidential Information and Trade Secrets except as expressly provided herein, and (ii) to safeguard your right to access the Services and this website, using the same standard of care which you use for its similar confidential materials, but in no event less than reasonable care.

11. Term; Termination.

Legal

11.1. Term. The term of this Agreement will commence in accordance with the applicable order form.

11.2. Termination by You. You may stop using the Services at any time. Unless otherwise expressly set forth in these Terms, termination of your account does not relieve you of any obligation to pay any outstanding fees or require Articulate to refund any prepaid fees.

11.3 Termination by Us. If we terminate these Terms for reasons other than for cause (to the extent permissible under applicable law), we will make reasonable effort to notify you at least 30 days prior to termination via the email address you provide to us with instructions on how to retrieve your content. We may at any time terminate these Terms (and your access to Services) with you if:

(a) you breach any provision of these Terms (or act in a manner that clearly shows you do not intend to, or are unable to, comply with these Terms);

(b) you fail to make the timely payment of fees for the Services, if any;

(c) we are required to do so by law (for example, where the provision of the Services to you is, or becomes, unlawful);

(d) we elect to discontinue the Services, in whole or in part, (such as if it becomes impractical for us to continue offering Services in your region due to change of law); or

(e) there has been an extended period of inactivity (of thirty (30) days or more) in your free account.

11.4. Termination by Administrator. For group subscriptions, such as an “Articulate 360 Teams”, the designated subscription administrator(s) may terminate a user's access to a Service at any time. If the applicable administrator terminates your access, then you may no longer be able to access content that you (or, if applicable, other users of the group) have shared on a shared workspace within that Service.

11.5. Effect of Termination. If you terminate your subscription to the Services or cancel your account prior to the end of your then-current term (other than due to Articulate's material breach of these Terms of which you notify Articulate and afford Articulate not

less than thirty (30) days to cure such breach), or we terminate or cancel your account due to your breach of these Terms, then in addition to other amounts you may owe Articulate, you must immediately pay any then unpaid fees and charges associated with the remainder of such term.

11.6. Survival. Upon expiration or termination of these Terms, the following sections will survive: 1.1 (Choice of Law), 1.3 (Privacy), 1.5 (Modification), 2.4 (License Limitations), 2.5 (Restrictions), 2.8 (Third Party Software), 2.9 (Notice to U.S. Government End Users), 3 (Your Content), 4 (Account Information), 5 (User Conduct), 6 (Fees and Payment; Term and Renewal), 7 (Your Warranty and Indemnification Obligations), 8 (Our Warranty and Indemnification Obligations), 9 (Limitation of Liability), 11.5 (Effect of Termination), 11.6 (Survival), 12 (Investigations), 13 (Export Control Laws), 14 (Dispute Resolution), 15 (Compliance with Licenses), and 16 (Miscellaneous). Upon the expiration or termination of the Services, the Services may cease to operate without prior notice.

12. Investigations.

12.1. Screening. We are not obligated to monitor content uploaded to the Services.

12.2. Disclosure. We may access or disclose information about you, or your use of the Services, (a) when it is required by law (such as when we receive a valid subpoena or search warrant); (b) to respond to your requests for customer service support.

13. Export Control Laws.

The Services and you use thereof are subject to U.S. and international laws, restrictions, and regulations that may govern the import, export, and use of the Services. You agree to comply with all such laws, restrictions, and regulations.

14. Dispute Resolution.

Legal

14.1. Process. For any concern or dispute you may have, you agree to first try to resolve the dispute informally by contacting us. If a dispute is not resolved within 30 days of submission, then except as otherwise set forth in Section 18.2, you or Articulate may initiate a claim in the state and/or federal courts in New York County, New York, USA. However, either party may initiate a claim before the expiration of such thirty (30) day period, if the claim relates to intellectual property, or to preserve either party's rights under applicable statutes of limitations.

14.2. Injunctive Relief. Notwithstanding the foregoing, in the event of your or others' unauthorized access to or use of the Services or content in violation of these Terms, you agree that we are entitled to apply for injunctive remedies (or an equivalent type of urgent legal relief) in any jurisdiction.

15. Compliance with Licenses.

If you are a business, company, or organization, then we may, no more than once every twelve (12) months, upon seven (7) days' prior notice to you, appoint an independent third party auditor who is obliged to maintain confidentiality to inspect (including manual inspection, electronic methods, or both) your records, systems, and facilities to verify that your installation and use of any and all Services is in conformity with these Terms. Additionally, you will provide the auditor with all records and information requested, within 30 days of such request. If the verification discloses a breach of these Terms, you will immediately take steps to cure the breach and comply with these Terms, including but not limited to purchasing and paying for any necessary subscriptions. If the underpaid fees exceed 5% of the value of the payable license fees, then you will also pay for our cost of conducting the verification.

16. Miscellaneous.

16.1. Interpretation. The English version of these Terms will be the version used when interpreting or construing these Terms. Section headings are provided for convenience only, and will not affect the interpretation of these Terms. Any words following the terms "including", "in particular", "for example", "such as", or any similar expression, shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

16.2. Notice to Articulate. You may send notices to us to at the following address: Articulate Global, Inc., Attn: Legal, 244 5th Avenue – Suite 2960, New York, NY 10001, USA.

16.3. Notice to You. To the extent permitted under applicable law, we may notify you by email, postal mail, postings within the Services, or other legally acceptable means.

16.4. Entire Agreement. These Terms constitute the entire agreement between Articulate and you regarding your use of the Services and the subject matter hereof, and these Terms supersede any prior agreements or understandings (whether written or oral) between Articulate and you relating to the subject matter hereof.

16.5. Assignment. You may not assign or otherwise transfer these Terms or your rights and obligations under these Terms, in whole or in part, without our written consent and any such attempt will be void. We may freely assign or transfer our rights and/or obligations under these Terms to a third party. In addition, if you are purchasing through a reseller, distributor, or similar third party, you acknowledge and agree that Articulate reserves the right, upon notice, to require such third party to assign the relationship directly to Articulate (or to another third party that Articulate may specify), and in such event, you agree to fully comply and cooperate with such transfer and to do all things reasonably necessary to effect the same.

16.6. Severability. If at any time any provision of these Terms is or becomes illegal, invalid or unenforceable in any respect under the law of any jurisdiction, neither the legality, validity or enforceability of the remaining provisions hereof nor the legality, validity, or enforceability of such provision under the law of any other jurisdiction will in any way be affected or impaired thereby, and the remainder of the provisions of these Terms will remain in full force and effect. Articulate and you agree to endeavor in good faith negotiations to replace any illegal, invalid or unenforceable provision with a valid, legal and enforceable provision, the economic effect of which comes as close as possible to the illegal, invalid or unenforceable provision.

16.7. No Waiver. Our failure to enforce or exercise any provision set forth in these Terms is not a waiver of that provision.

17. DMCA.

We respect the Intellectual Property Rights of others and we expect our users to do the same. We will respond to clear notices of copyright infringement consistent with the Digital Millennium Copyright Act ("DMCA").

18. Jurisdiction-Specific Terms.

This section applies to specific jurisdictions. If there is any conflict between this section and other sections, then this section governs in relation to the relevant jurisdiction:

18.1. Australia:

(a) NOTHING IN THIS AGREEMENT IS INTENDED TO LIMIT YOUR NON-EXCLUDABLE RIGHTS UNDER THE COMPETITION AND CONSUMER ACT 2010 (CTH).

(b) DESPITE ANY OTHER PROVISION OF THESE TERMS, IF THE COMPETITION AND CONSUMER ACT 2010 (CTH) OR ANY OTHER LEGISLATION STATES THAT THERE IS A GUARANTEE IN RELATION TO THE SERVICES SUPPLIED BY ARTICULATE IN CONNECTION WITH THESE TERMS, AND ARTICULATE'S LIABILITY FOR FAILING TO COMPLY WITH THAT GUARANTEE CANNOT BE EXCLUDED BUT MAY BE LIMITED, SECTIONS 9.1, 9.2 AND 9.3 DO NOT APPLY TO THAT LIABILITY. INSTEAD, ARTICULATE'S LIABILITY FOR THAT FAILURE IS LIMITED TO (AT THE ELECTION OF ARTICULATE), IN THE CASE OF A SUPPLY OF GOODS, ARTICULATE REPLACING THE GOODS OR

SUPPLYING EQUIVALENT GOODS OR REPAIRING THE GOODS, OR IN THE CASE OF A SUPPLY OF SERVICES, ARTICULATE SUPPLYING THE SERVICES AGAIN OR PAYING THE COST OF HAVING THE SERVICES SUPPLIED AGAIN.

(c) If for any reason the provision of the Services under or in connection with these Terms constitutes a "Taxable Supply" in Australia (or similar term under the laws of other jurisdictions) for GST or similar purposes, then at or before the time the Services fees are payable, you must pay Articulate an amount equal to the GST or similar tax or withholding for the Services (in addition to the fees otherwise payable for the Services), and Articulate will give you a Tax Invoice (or similar receipt or acknowledgement) for the Service. For the purpose of this section, GST means the goods and service tax under the Good and Services Tax Act 1999 (Cth) and capitalised terms have the meaning given in that Act.

18.2. Other.

(a) THE FOLLOWING PARAGRAPH DOES NOT APPLY TO PURCHASERS IN THE US: THESE TERMS AND THE SERVICES ARE OFFERED ONLY TO PERSONS WHO ARE NOT CONSUMERS UNDER ANY APPLICABLE LAW. IF YOU ARE A CONSUMER, YOU ARE NOT AUTHORIZED TO ENTER INTO THESE TERMS AND MUST FOLLOW THE RETURN PROCEDURE SET FORTH BELOW. IN PARTICULAR, IF YOU RESIDE WITHIN THE EUROPEAN UNION, YOU ARE A CONSUMER IF YOU ARE A NATURAL PERSON PURPORTING TO ENTER INTO THIS AGREEMENT FOR ANY PURPOSE OUTSIDE YOUR TRADE, BUSINESS, CRAFT OR PROFESSION. IF YOU ARE NOT AUTHORIZED TO ENTER INTO THESE TERMS, OR IF YOU DO NOT AGREE TO ALL OF THE TERMS, THEN YOU MUST NOT INSTALL, ACCESS, COPY OR USE THE SERVICES, AND YOU MUST, WITHIN 3 DAYS, DELETE AND PERMANENTLY ERASE FROM ALL COMPUTER MEMORY AND STORAGE MEDIA ALL COPIES OF THE SERVICES AND RELATED SOFTWARE, AND TO OBTAIN A REFUND, YOU MUST NOTIFY ARTICULATE IN WRITING THAT YOU HAVE COMPLIED WITH THE FOREGOING.

(b) If you reside in Australia, New Zealand, Japan, mainland China, Hong Kong S.A.R., Macau S.A.R., Taiwan R.O.C., the Republic of Korea, India, Sri Lanka, Bangladesh, Nepal, or a member state of the Association of Southeast Asian Nations (ASEAN), then the Singapore International Arbitration Centre (SIAC) will administer the arbitration in Singapore under its Rules of Arbitration, which rules

are deemed to be incorporated by reference in this section. Otherwise, the London Court of International Arbitration (LCIA) will administer the arbitration in London under the LCIA Arbitration Rules. There will be one arbitrator that you and Articulate both select. The arbitration will be conducted in the English language, but any witness whose native language is not English may give testimony in the witness' native language, with simultaneous translation into English (at the expense of the party presenting the witness). Judgment upon the award rendered may be entered and will be enforceable in any court of competent jurisdiction having jurisdiction over the parties.

Legal

Articulate 360

Overview
Storyline 360
Rise
Content Library
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More
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What's New

Other Products

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Studio '13
Articulate Online

Support

Product Support
Free E–Books
E–Learning Community
Training Classes

Company

About
Culture
Careers
Customers
Contact Us

Sales

Sales Chat
+1 (800) 861-4880
sales@articulate.com
International Resellers
Pricing
Sales FAQs

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Sign In

Atlassian End User Agreement

IMPORTANT – PLEASE READ THIS AGREEMENT!

- This End User Agreement ("**Agreement**") is a **binding legal document** between Atlassian and you, which explains your rights and obligations as an End User of Atlassian products. "**End User**" means either (a) you as an individual or (b) your company, if you are using Atlassian products in your capacity as an employee or agent of a company. You identify the specific "End User" during the registration process. "**Atlassian**" means Atlassian Pty Ltd (ABN 53 102 443 916) of Level 6, 341 George Street, Sydney, NSW 2000, Australia.
- By allowing the "I Agree to the terms and conditions of the End User Agreement" box to remain checked, or by installing or using any Atlassian products, **End User agrees to be bound by this Agreement**. If you do not agree to this Agreement, then uncheck the "I Accept" box and do not install or use Atlassian products.
- The "Agreement" also includes any Atlassian policies or documents referenced in this document, including Atlassian's Privacy Policy at http://www.atlassian.com/company/privacy.
- From time to time, Atlassian may modify this Agreement, including any referenced policies and other documents. Any modified version will be effective at the time it is posted. To keep abreast of your license rights and relevant restrictions, please bookmark this Agreement and read it periodically. By using any Product after any modifications, End User agrees to all of the modifications.

1. Introduction to Atlassian's Products and License Terms.

1.1 What's Included in "Software". Atlassian offers many different software products for download, including JIRA, Confluence, and others. "**Software**" means any Atlassian product that End User orders from Atlassian (or an Atlassian Expert, as described below) and downloads from Atlassian. The term also includes (a) related documentation, (b) any Updates (defined below) to the Software, (c) any add-ons, plug-ins, APIs or Internet-based components of the Software provided by Atlassian (but not third parties) ("**Supplementary Software**"), and (d) any third party software embedded in or provided with Atlassian's software ("**Embedded Software**"). End User's detailed rights to use Software are in Section 2 below. To be clear, any add-ons, plug-ins, APIs or other code offered by third parties (through the Atlassian Marketplace or otherwise) or created by End User itself are not "Software", and Atlassian is not responsible for and does not offer any warranty, indemnity or support for those items.

1.2 What's Included in "Hosted Services". "**Hosted Services**" include any Atlassian online services products that End User orders, which can include "OnDemand" versions of many Atlassian Software products, the Bitbucket hosting service **("Bitbucket")**, and other online services provided by Atlassian. "Hosted Services" always means the version of the Hosted Services as described in Atlassian's then-current product descriptions. End User's detailed rights to use Hosted Services are in Section 3 below.

1.3 The "Products". This Agreement uses "**Products**" to refer to the Software and/or the Hosted Services.

1.4 Atlassian's Maintenance Offerings. For additional fees, Atlassian offers "**Maintenance**" to End Users as described at http://confluence.atlassian.com/display/Support/Atlassian+Support+Offerings. Maintenance includes (1) any generally released updates, upgrades, patches, and bug fixes for the Software ("**Updates**") when and if generally released at Atlassian's sole discretion, (2) web-based support and phone support (depending on End User's support level) as described in the link above, and (3) other support features as described in the link above.

1.5 Limits on Authorized Users. When buying a license to the Software or a subscription to the Hosted Services, End User pays fees for a specific number of users, which are counted based on number of then-authorized users for Software and number of seats or logins for Hosted Services ("**Authorized Users**"). End User designates Authorized Users through the Products. Authorized Users may include End User's employees, representatives, consultants, contractors, agents, and Customers (note: detailed rules for Customers in Section 4.4 below). End User may add Authorized Users for additional fees. End User is responsible for all use of the Products by its Authorized Users and their compliance with this Agreement.

1.6 Purchase through "Atlassian Experts" (Resellers). Fees are payable directly to Atlassian as described in Section 5 (Fees and Payment) below unless End User ordered the Products from an Atlassian authorized reseller ("**Atlassian Experts**"). If End User ordered Products from an Atlassian Expert, then the sections of this Agreement referring to orders with Atlassian or payments to Atlassian do not apply for those Products. Instead, End User agrees to pay the Atlassian Expert the fees separately agreed with the Atlassian Expert. No Atlassian Expert may change the terms of this Agreement (but they may impose additional restrictions on use of the Products). No promises, warranties or agreements by Atlassian Experts are binding on Atlassian.

1.7 Purchase through Atlassian Marketplace. Unless Atlassian is the publisher, use of Marketplace Products purchased through the Atlassian Marketplace are not governed by this Agreement but are instead governed by the Marketplace Terms of Use located at http://www.atlassian.com/licensing/marketplace/termsofuse.

2. License to Use Atlassian Software.

2.1 Software, Generally. Atlassian grants End User a worldwide, non-exclusive, non-transferable, non-sublicenseable right to use the Software, subject to the terms and conditions of this Agreement. Software licenses are perpetual unless terminated as described in this Agreement. Only Authorized Users may use the Software, and only up to the permitted number of concurrent Authorized Users (except for Non-Production Purposes, as described below). All use of Software must be in accordance with the

relevant Atlassian documentation and policies. End User may make a limited number of copies of the Software as is strictly necessary for purposes of data protection, archiving, backup, and testing and internal development (e.g., of End User Modifications or End-User Plug-ins, as defined below, but not development of End User's unrelated products or services) ("**Non-Production Purposes**"). For clarity, End User's employees and contractors may use the Software for these Non-Production Purposes, and End User will be responsible for their compliance with this Agreement on all the same terms as for Authorized Users, except that these users will not count against End User's limit of Authorized Users, and End User will not need to pay additional fees for these users. Unless Atlassian agrees otherwise in writing, End User may only install, use or make available the Software on End User's hardware systems, whether owned, leased or controlled. End User will be responsible for any use of the Software on any hardware systems not owned, leased or controlled by End User ("**Uncontrolled Systems**").

2.2 Updates and Supplementary Software. The terms for Software in this Agreement apply to any Updates and Supplementary Software, unless Atlassian provides different terms. Atlassian may cease making available Supplementary Software and Internet-based services used with the Software (e.g., the Atlassian Plugin Checkup tool) at any time.

2.3 Open Source Software. The Software may contain or be provided with components subject to the terms and conditions of "open source" software licenses ("**Open Source Software**"). To the extent required by the license that accompanies the Open Source Software, the terms of such license will apply in lieu of the terms of this Agreement with respect to such Open Source Software, including any provisions governing access to source code, modification or reverse engineering.

2.4 Evaluation Software. This paragraph applies to any Software that Atlassian makes available on an evaluation basis ("**Evaluation Software**"). End User may only use the Evaluation Software for internal evaluation purposes for the period specified by Atlassian (or, if not specified, for 30 days), and may only permit a limited number of users (specified by Atlassian) to access the Evaluation Software. After the evaluation period, End User must delete all copies of the Evaluation Software. End User acknowledges that

Evaluation Software may not be fully functional. Notwithstanding anything else in this Agreement, Atlassian does not offer any warranty, indemnity or support for any Evaluation Software.

2.5 Source Code. Atlassian may provide some elements of Software in source code form ("**Source Code**"). Unless otherwise specified, End User may modify Source Code solely to develop bug fixes, customizations, and additional features ("End User Modifications") and, notwithstanding anything else in this Agreement, may only use End User Modifications internally for purposes of using the Software licensed from Atlassian. Atlassian will have no support, warranty, indemnity or other obligations relating to, and assumes no liability for, any End User Modifications or any effect they may have on the operation of the Products.

2.6 IP Protection Mechanisms. The Software has license protection mechanisms designed to manage and protect Atlassian's and its suppliers' and licensors' intellectual property rights. Whether using Source Code or not, End User must not modify or alter these mechanisms or try to circumvent them or the usage rules they are designed to enforce.

3. Use of Atlassian Hosted Services.

3.1 Access Rights. End User may access and use the Hosted Services during the applicable Subscription Term (defined below), subject to the terms and conditions of this Agreement. Only Authorized Users may use the Hosted Services, and only up to the permitted number of Authorized Users. All use of the Hosted Services must be in accordance with the relevant Atlassian documentation and policies.

3.2 Subscription and Renewals. End User selects its initial subscription term, which may be a month, quarter, year, or other mutually agreed period, at the time of order. Once that term expires, it will automatically renew for successive terms of the same period (but no longer than 1 year each) unless either End User or Atlassian notifies the other of non-renewal at least 5 business days prior to the upcoming expiration date or Atlassian ceases to make a particular Hosted Service available. Renewals are charged at

Atlassian's then-current rates unless otherwise agreed, and Atlassian will at its discretion charge End User using the credit card on file on or after the expiration date or send End User an invoice. "**Subscription Term**" means the initial term and any renewal term(s).

3.3 Evaluations. For evaluations of Hosted Services, the "Subscription Term" does not apply. Instead, the evaluation period is specified by Atlassian. Atlassian may notify End User of the remaining number of days through the Hosted Services. Notwithstanding anything else in this Agreement, Atlassian does not offer any warranty, indemnity or support for any Hosted Services offered on an evaluation basis.

3.4 End User Data. Unless otherwise specified, End User retains ownership of any data or other content or information that End User provides through the Hosted Services, including any code uploaded to Bitbucket (as described below) ("**End User Data**"). End User's use of the Hosted Services and all End User Data must comply with End User's own privacy policies and all domestic, foreign and international laws and regulations, including those relating to data privacy, international communications, and the exportation of technical or personal data. End User is solely responsible for the accuracy, content and legality of all End User Data. End User agrees not to submit any content that is obscene, defamatory, libelous, threatening, harassing, pornographic, racially or ethnically offensive, that encourages conduct that would be considered a criminal offense or give rise to any civil liability. End User will not submit any material (including any virus, bot, worm, scripting exploit or other harmful code) that is likely to harm or corrupt the Hosted Services or any computer systems or data. End User represents and warrants to Atlassian that it has sufficient rights in the End User Data to grant the rights in this section and that the End User Data does not infringe the rights of any third party. End User agrees that Atlassian may, in its sole discretion, delete or remove any End User Data at any time and with or without notice.

End User hereby grants Atlassian a non-exclusive license to copy, distribute, perform, display, store, modify, and otherwise use End User Data in connection with operating the Hosted Services.

Atlassian may also use aggregate information to measure general Hosted Service usage patterns and characteristics of its user base and otherwise to improve its products and services, and may include such aggregate information about its audience in promotional materials or reports to third parties. This aggregate information will not reference names, phone numbers, email addresses, or other personally identifiable information, and it will be not traceable to a specific recipient or user email address.

3.5 Special Terms for Bitbucket. This paragraph applies to Bitbucket. If End User runs a Bitbucket repository, End User represents and warrants that it will accurately designate both the license under which the code in the repository is licensed to third parties and the project license for any contributions by collaborators. Project collaborators should carefully read all third party licenses before using any code or contributing any code. End User agrees to use Bitbucket solely as a code repository and not to upload any other content to Bitbucket (e.g., music or video). END USER ACKNOWLEDGES THAT ALL CODE MADE AVAILABLE THROUGH BITBUCKET IS THE RESPONSIBILITY OF THE ENTITY THAT MAKES IT AVAILABLE. ATLASSIAN IS NOT THE LICENSOR OF ANY THIRD PARTY CODE MADE AVAILABLE THROUGH BITBUCKET AND TAKES NO RESPONSIBILITY FOR SUCH CODE.

3.6 Storage Limits. Atlassian sells 1 GB blocks of storage for End User Data at the rates specified when End User orders Hosted Services. Use in excess of purchased storage will count as an overage, and any overages are charged at $1.00 per month for the next 1 GB block or Atlassian's then-current rate. Atlassian may create or modify maximum storage limits for the Hosted Services at any time, in its discretion, and End User acknowledges that it may not receive notices about these limits. Note: This paragraph does not apply to storage on Bitbucket.

3.7 Return of End User Data. After termination or expiration of a Subscription Term or this Agreement, unless it was for End User's breach, at End User's request, Atlassian will use reasonable efforts to make available the End User Data for download. If made available, End User must download the End User Data within 30 days of termination or expiration. After that, Atlassian may delete the End User Data.

3.8 End User Responsibility for Systems. End User is responsible for its own Internet connection and must use software, systems and equipment compatible with the Hosted Services, as Atlassian specifies in its published policies. Any End User web browsers and other software must support the Secure Socket Layer (SSL) protocol or other protocols accepted by Atlassian. Atlassian's security measures are described at http://www.atlassian.com/hosted/security. Atlassian is not responsible for any End User Data lost, altered, intercepted or stored across networks not owned or operated by Atlassian.

4. Important Customer Obligations

4.1 Accounts and Passwords. End User will provide accurate, current and complete information when registering with Atlassian and ordering Products and agrees to update its information if it changes. This is important, because Atlassian may send notices, statements and other information to End User by email or through End User's account (for Hosted Services). End User will keep all its Authorized Users' passwords and usernames confidential and will not share them with third parties. End User is responsible for all actions taken through its accounts.

4.2 Embedded Software. All of the other restrictions for Software in this Agreement also apply to Embedded Software Software, with the addition of the following terms. End User receives restricted licenses to Embedded Software and may use Embedded Software only for its internal purposes (including for Customer Use as permitted below) in conjunction with the applicable Product as provided by Atlassian, and may only use the Embedded Software as part of and through that Product. End User may not install, access, configure or use any Embedded Software (including any APIs, tools, databases or other components of any Embedded Software) separately or independently of the rest of the Product, whether for production, technical support or any other purposes, or otherwise attempt to gain direct access to any Embedded Software components, or permit anyone else (including Customers) to do any of these things. Notwithstanding any other terms of this Agreement, End User may not modify any Embedded Software. End User will be financially responsible to the applicable third party licensor ("**Embedded**

Software Licensor") for all damages and losses resulting from End User's or its Customers' breach of this Agreement. End User may not "benchmark" or otherwise analyze performance information for individual Embedded Software elements.

Some Embedded Software may include source code provided as part of the Embedded Software Licensor's standard shipment. That source code will be governed by the terms for Embedded Software in this Agreement, and not the terms for Source Code in Section 2.5 (Source Code) above.

End User understands that the applicable Embedded Software Licensor retains all ownership and intellectual property rights to the Embedded Software. Embedded Software Licensors (and any other third party licensors of any components of the Products) are intended third party beneficiaries of this Agreement with respect to the items they license and may enforce this Agreement directly against End User; but, to be clear, Embedded Software Licensor do not assume any of Atlassian's obligations under this Agreement. In addition, End User agrees to the Embedded Software-related audit provisions in Section 6 (License Certifications and Audits) below.

Embedded Software may include or be accompanied by third party technology that may be appropriate or necessary for use with some Embedded Software. Such technology may be specified in the Documentation or otherwise specified by Atlassian, and is licensed to End User only for use with the Product with which it is provided under the specified third party license terms, and not this Agreement. Atlassian may also provide additional or substitute terms for Embedded Software if required by the Embedded Software Licensor, and End User will comply with those terms.

4.3 Rules for Plug-ins. End User may develop its own plug-ins for various Products ("**End User Plug-ins**") and may distribute End User Plug-ins to third parties, but only for those Products permitted by Atlassian, and only in accordance with Atlassian's published plug-in and API guidelines. End User Plug-ins distributed through the Atlassian Marketplace will be subject to the posted terms for the Atlassian Marketplace.

4.4 Use by End User's Customers. End User's customers ("**Customers**") may be Authorized Users. End User will be responsible for Customers the same as any other Authorized User and must enter into valid, binding agreements with Customers consistent with this Agreement, including the additional conditions below. A Customer's permitted use of Products under this Agreement is called "**Customer Use**".

In addition to all other terms in this Agreement, the following conditions apply to Customer Use:

(a) End User may not distribute or make available any Product on a standalone basis. Instead, End User may only make available the Product to Customers in order to support Customers' use of content and features that are part of End User's own existing offerings. *Examples would include End User using: (i) Confluence as a tool to provide customer-facing knowledge base articles or technical documentation; (ii) Confluence as a customer-facing extranet for discussions, project updates, and centralized knowledge-sharing source about End User's own products and services unrelated to the Products; (iii) JIRA to collect direct customer feedback on application development (e.g. JIRA Mobile Connect, Bonfire) ; and (iv) JIRA as a customer-facing helpdesk or support system.*

(b) End User may not resell or OEM the Product or otherwise charge Customers for use of the Product itself, but may charge End Users as part of an overall program that includes access to End User content or features as supported by the Product. Example: A paid support offering that includes, as a minor component, access to the support forum.

(c) Customers may interact with the Product, but may not receive any administrator, configuration or similar access to the Product. Example: Customers may post comments in a JIRA issue, but End User may not permit any Customer to administer project and global site level configurations.

(d) In making available Products to Customers, End User may not violate any other term or condition in this Agreement, such as reverse engineering and anti-circumvention restrictions.

Atlassian will not have any direct or indirect liability or obligation to any Customers, and Customers do not acquire any rights under this Agreement.

Atlassian understands that Product usage may be flexible and that End Users may identify new proposed uses for the Products. If End User has questions about whether a proposed use complies with these rules, **please contact Atlassian at sales@atlassian.com**.

4.5 Conditions on Use of Products. End User will not, and will not allow any Authorized User or other third party to: (a) resell, assign, rent, give, transfer, pass title to, lease, copy, provide access to or sublicense (including without limitation on a timeshare, subscription service, hosted service or outsourced basis) any Product to any third party (for use in its business operations or otherwise) or anyone else besides Authorized Users (including Customers) in accordance with this express terms of this Agreement, or permit anyone besides Authorized Users to use any data or information not owned by End User that is generated by the Products (and, in the event End User grants any security interest in any Products, the secured party has no right to use or transfer the Products); (b) use any Product to provide, or incorporate any Product into any product or service provided to, a third party, except as expressly permitted above for Customer Use; (c) reverse engineer, decompile, disassemble, decipher, decrypt, or otherwise seek to discover or obtain the source code or non-public APIs to Products (including any data structure or similar materials produced by the Products), except to the extent expressly permitted by applicable law despite this prohibition (and then only upon advance notice to Atlassian); (d) modify, adapt or create derivative works of a Product (excluding End User Modifications and End User Plug-ins); (e) remove or obscure any proprietary or other notices of Atlassian or any third party contained in any Product (including any information or data generated by the Products); (f) publicly disseminate information regarding the performance of Products; (g) use any Product for commercial solicitation purposes or spam; (h) use the Atlassian name or any Atlassian trademarks or logos except as permitted in Section 4.6 (Attribution); or (i) commit any act or omission that could result in damage to Atlassian's or its suppliers' or licensors' reputations. End User

will not attempt to do any of the foregoing, encourage others to do so, or otherwise attempt to bypass or circumvent any usage restrictions in this Agreement.

4.6 Attribution. In any use of the Software, End User must include the following attribution to Atlassian on all user interfaces in the following format: "Powered by Atlassian", which must in every case include a hyperlink to http://www.atlassian.com, and which must be in the same format as delivered in the Software.

4.7 Export Control. If a Product is acquired in Australia by End User, End User must comply with all applicable Australian export control laws and regulations, including the laws and regulations administered by the Australian Department of Foreign Affairs and Trade (or any replacement department or authority). If a Product is acquired by End User in the United States, End User acknowledges that the Product is subject to U.S. export jurisdiction and agrees to comply with all applicable international and national laws that apply to the Product, including the U.S. Export Administration Regulations, as well as end-user, end-use, and destination restrictions issued by U.S. and other governments. In any case, the import and export of any Product may be subject to control or restriction by applicable local law. End User is solely responsible for determining the existence and application of any such law to any proposed import and export and for obtaining any needed authorization. End User agrees not to export, directly or indirectly, any Product (or any direct product thereof) from any country in violation of applicable laws.

4.8 Indemnification. End User will indemnify, defend and hold harmless Atlassian from and against any and all claims, costs, damages, losses, liabilities and expenses (including reasonable attorneys' fees and costs) arising out of or in connection with any claim arising from or relating to (a) any breach by End User (including any Authorized Users) of this Agreement, (b) any End User Data, (c) any End User Modifications, End User Plug-ins or other modifications of or combinations with a Product, or any service or product offered by End User in connection with or related to a Product, (d) any Uncontrolled Systems, or (e) any representations or warranties made by End User (including any Authorized User) regarding a Product to third parties. This indemnification obligation is subject to End User receiving (i) prompt written notice of such claim (but in any event notice in sufficient time for End User to respond without prejudice); (ii) the exclusive

right to control and direct the investigation, defense, or settlement of such claim, provided that Atlassian may participate in the claim at its own expense and End User may not settle any claim without Atlassian's prior written consent; and (iii) all reasonable necessary cooperation of Atlassian at End User's expense.

5. Fees and Payment

5.1 General. End User must pay all fees by their due date specified at the time of order or otherwise within 30 days of Atlassian's invoice or notice. Renewal fees for Hosted Services will be charged as described in Section 3.2 (Subscription and Renewals). Late payments are subject to interest charges of 1.0% per month on any outstanding balance, or the maximum permitted by law, whichever is less, plus all collection expenses. End User will continue to be charged during any period of suspension. In event of any termination, End User will pay the unpaid balance due calculated in accordance with this section and this Agreement. Atlassian may charge such unpaid fees and charges to End User's credit card or otherwise bill End User for such unpaid fees and charges. End User acknowledges that it is not relying on the future availability of any Products (including any Embedded Software) in agreeing to or making its payments hereunder.

5.2 Taxes. Payments made by End User under this Agreement exclude any taxes or duties payable in respect of the Products in the jurisdiction where the payment is either made or received. To the extent that any such taxes or duties are payable by Atlassian, End User must pay to Atlassian the amount of such taxes or duties in addition to any fees owed under this Agreement. Notwithstanding the foregoing, End User may have obtained an exemption from relevant taxes or duties as of the time such taxes or duties are levied or assessed. In that case, End User will have the right to provide to Atlassian with any such exemption information and Atlassian will use reasonable efforts to provide such invoicing documents as may enable End User to obtain a refund or credit for the amount so paid from any relevant revenue authority if such a refund or credit is available.

5.3 Special Terms for JIRA Studio and EC2 Hosted Service. End Users of JIRA Studio who wish to make use of Atlassian's Bamboo continuous integration application available within the JIRA Studio development suite must complete a registration with Amazon

Web Hosted Services ("**AWS**") for Amazon's Elastic Cloud Hosted Service (EC2) ("**EC2 Hosted Service**"). The EC2 Hosted Service enables End Users to use Elastic Bamboo, which dynamically creates and runs remote agents in the Amazon Elastic Compute Cloud. Notwithstanding anything to the contrary in this Agreement, **the EC2 Hosted Service is not part of the Hosted Services and fees paid to Atlassian do not include fees for the EC2 Hosted Service**. End Users using the EC2 Hosted Service will be charged directly by AWS and will be solely responsible for payment of all fees to AWS. Additional information is available on the EC2 Hosted Service and at: http://www.atlassian.com/software/bamboo/overview/tour/scaling-up, http://confluence.atlassian.com/display/BAMBOO/Elastic+Bamboo+Costs, and http://aws.amazon.com/ec2/.

6. License Certifications and Audits

Upon Atlassian's written request, End User will provide Atlassian with a signed certification certifying that all Products are being used pursuant to the terms of this Agreement, including any access and user limitations. With prior reasonable notice of at least ten (10) days, Atlassian (or its authorized agent) may audit the use of the Products by End User and its Authorized Users and any Customers, provided such audit is during regular business hours. End User will provide reasonable assistance and access to information in the course of any audit. End User is responsible for such audit costs only in the event the audit reveals that End User's use of the Products is not in accordance with the permitted scope of use. In the event that any certification or audit reveals that End User has exceeded its permitted number of Authorized Users, Atlassian may invoice End User for any past or ongoing excessive use and End User will pay the invoice in accordance with Section 5 (Fees and Payment). This remedy is without prejudice to any other remedies available to Atlassian at law or equity or under this Agreement.

End User understands that Atlassian may report audit results to any applicable Embedded Software Licensor or may assign the right to audit End User in this Section 6 to Embedded Software Licensors. When the audit is assigned, then notwithstanding

anything else in this Agreement to the contrary, End User Licensor will not be responsible for End User's costs incurred in cooperating with the audit.

7. Atlassian's Ownership Rights; Feedback

Atlassian and its licensors reserve all rights not expressly granted to End User in this Agreement. The Products (including any content or information contained therein) and all copies thereof are protected by copyright and other intellectual property laws and treaties. Atlassian or its licensors own the title, copyright, and other intellectual property rights in the Products and all copies, modifications and derivative works of the Products and underlying software (including any incorporating Feedback) ("**Atlassian Technology**"), and End User does not acquire any ownership rights in Atlassian Technology. All Products are licensed, not sold.

"**Feedback**" means any feedback, comments, suggestions or materials (including, to the extent disclosed to Atlassian, any End User Modifications, but excluding End User Plug-ins) that End User may provide to Atlassian about or in connection with the Products, including any ideas, concepts, know-how or techniques contained therein. End User may provide Feedback in connection with Maintenance and otherwise. End User hereby grants Atlassian a worldwide, royalty-free, non-exclusive, perpetual and irrevocable license to use, copy, modify and otherwise exploit the Feedback for any purpose, including incorporating or implementing the Feedback in the Products. End User agrees that Atlassian may exploit all Feedback without any restriction or obligation on account of intellectual property rights or otherwise. For clarity, no Feedback will be deemed End User's Confidential Information, and nothing in this Agreement (including Section 8 (Confidentiality)) limits Atlassian's right to independently use, develop, evaluate, or market products, whether incorporating Feedback or otherwise.

8. Confidentiality

Except as otherwise set forth in Section 7 (Atlassian's Ownership Rights; Feedback) above, each party agrees that all code, inventions, know-how, business, technical and financial information it obtains ("**Receiving Party**") from the disclosing party ("**Disclosing**

Party") constitute the confidential property of the Disclosing Party ("**Confidential Information**"), provided that it is identified as confidential at the time of disclosure or should be reasonably known by the Receiving Party to be Confidential Information due to the nature of the information disclosed and the circumstances surrounding the disclosure. Any Atlassian Technology, performance information relating to the Products, and the terms and conditions of this Agreement shall be deemed Confidential Information of Atlassian without any marking or further designation. Except as expressly authorized herein, the Receiving Party will hold in confidence and not use or disclose any Confidential Information. The Receiving Party's nondisclosure obligation shall not apply to information which the Receiving Party can document: (i) was rightfully in its possession or known to it prior to receipt of the Confidential Information; (ii) is or has become public knowledge through no fault of the Receiving Party; (iii) is rightfully obtained by the Receiving Party from a third party without breach of any confidentiality obligation; (iv) is independently developed by employees of the Receiving Party who had no access to such information; or (v) is required to be disclosed pursuant to a regulation, law or court order (but only to the minimum extent required to comply with such regulation or order and with advance notice to the Disclosing Party). The Receiving Party acknowledges that disclosure of Confidential Information would cause substantial harm for which damages alone would not be a sufficient remedy, and therefore that upon any such disclosure by the Receiving Party the Disclosing Party shall be entitled to appropriate equitable relief in addition to whatever other remedies it might have at law.

9. Termination

This Agreement will continue so long as End User has a license to the Software or an ongoing Subscription Term for the Hosted Services, unless earlier terminated. Atlassian may suspend or terminate this Agreement and End User's account, with respect to one or more of the Products, if End User fails to comply with the terms and conditions of this Agreement, including any failure to pay fees when due. Atlassian may terminate any free account or evaluation usage at any time in its sole discretion.

End User may terminate this Agreement at any time with notice to Atlassian.

Immediately upon termination of any license or subscription right granted under this Agreement, End User's license to Software and Hosted Services will cease, and End User must at its own cost: (a) cease using (and require all Authorized Users, and anyone else to cease using) all the terminated Products; (b) remove all copies of Software from its computer systems and any Uncontrolled Systems; and (c) return to Atlassian all Software or provide Atlassian with written certification that it has destroyed all copies of the Software and other Atlassian Confidential Information in its possession, custody or control. Upon termination of this Agreement for whatever reason, End User will not be entitled to credits or refunds for any unused portion of this Agreement, including but not limited to unused maintenance and support.

All payment and other obligations accrued as of the date of any expiration or termination of this Agreement, and Sections 4.5 (Conditions on Use of Products), 4.7 (Export Control), 4.8 (Indemnification), 5 (Fees and Payment), 6 (License Certifications and Audit), 7 (Atlassian's Ownership Rights; Feedback); 8 (Confidentiality), 9 (Termination), 11 (Warranties; Disclaimer of Warranties), 12 (Limitation of Liability), 13 (Publicity Rights) 14 (Assignment), 15 (Governing Law and Arbitration), 16 (DMCA Notices), 17 (Government End Users) and 18 (General) will survive expiration or termination.

10. Atlassian Infringement Indemnification

Subject to the remainder of this Section 10, Atlassian will indemnify, defend and hold End User harmless against a claim to the extent based on an allegation that End User's use of a Product (in the form provided by Atlassian) in compliance with this Agreement infringes a United States or European Union patent or registered copyright ("Claim"), and will pay those damages and costs finally awarded against End User by a court of competent jurisdiction, or agreed to in writing by Atlassian as settlement, as a result of such Claim, provided that Atlassian is (i) promptly notified and furnished a copy of such Claim, (ii) given all relevant evidence in End User's possession, custody or control, and (iii) given reasonable assistance in and sole control of the defense thereof and all negotiations for its settlement. Atlassian will have no obligation to defend and no liability for any damages or costs to the extent that a Claim is based upon: (i) use of a Product in

combination with any non-Atlassian product, software or equipment; (ii) use of a Product in a manner or for an application other than for which it was designed or intended to be used, regardless of whether Atlassian was aware of or had been advised of such use; (iii) modifications to a Product by any person or entity other than Atlassian (including any End User Modifications); or (iv) other circumstances or occurrences that are covered in End User's indemnification obligations in Section 4.8.

If a Product becomes, or in the opinion of Atlassian may become, the subject of a Claim, Atlassian may, at its option and in its discretion: (i) procure for End User the right to use the Product free of any liability; (ii) replace or modify the Product to make it non-infringing; or (iii) terminate End User's right to continue using such Product and refund, in the case of Software, any license fees related to this Software paid by End User (depreciated on a three-year straight line basis) or, in the case of a Hosted Service, any prepaid amounts for the service no longer being provided.

This Section 10 states the sole liability of Atlassian and the exclusive remedy of End User for any infringement of intellectual property rights in connection with any Product or other items provided by Atlassian under this Agreement.

11. Warranties; Disclaimers of Warranties

11.1 General. Each party represents and warrants that it has the legal power and authority to enter into this Agreement, and that, if End User is an entity, this Agreement and each order is entered into by an employee or agent of such party with all necessary authority to bind such party to the terms and conditions of this Agreement.

11.2 DISCLAIMER OF WARRANTIES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AND EXCEPT AS EXPRESSLY SET FORTH HEREIN, ATLASSIAN AND ITS THIRD PARTY SUPPLIERS/LICENSORS PROVIDE THE PRODUCTS (INCLUDING THE HOSTED SERVICES, SOFTWARE AND ANY MAINTENANCE) AS IS AND WITH ALL FAULTS, AND HEREBY DISCLAIM ALL OTHER REPRESENTATIONS, WARRANTIES AND GUARANTEES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY, TITLE, NON-

INFRINGEMENT AND FITNESS FOR ANY PURPOSE. WITHOUT LIMITING THE FOREGOING, ATLASSIAN AND ITS THIRD PARTY SUPPLIERS/LICENSORS MAKE NO REPRESENTATION, WARRANTY OR GUARANTY (1) AS TO THE RELIABILITY, TIMELINESS, QUALITY, SUITABILITY, TRUTH, AVAILABILITY, ACCURACY OR COMPLETENESS OF ANY PRODUCTS OR ANY CONTENT THEREIN OR GENERATED THEREWITH, (2) THAT (A) THE USE OF ANY PRODUCTS WILL BE SECURE, TIMELY, UNINTERRUPTED OR ERROR-FREE OR OPERATE IN COMBINATION WITH ANY OTHER HARDWARE, SOFTWARE, SYSTEM OR DATA, (B) THE PRODUCTS WILL MEET END USER'S REQUIREMENTS OR EXPECTATIONS, (C) ANY STORED DATA WILL BE ACCURATE OR RELIABLE OR THAT ANY STORED DATA WILL NOT BE LOST OR CORRUPTED, (D) THE QUALITY OF ANY PRODUCTS, SERVICES, INFORMATION, OR OTHER MATERIAL PURCHASED OR OBTAINED BY END USER THROUGH THE PRODUCTS WILL MEET END USER'S REQUIREMENTS OR EXPECTATIONS, (E) ERRORS OR DEFECTS WILL BE CORRECTED, OR (F) THE PRODUCTS (OR ANY SERVER(S) THAT MAKE A HOSTED SERVICE AVAILABLE) ARE FREE OF VIRUSES OR OTHER HARMFUL COMPONENTS. WITHOUT LIMITING THE FOREGIONG, TO THE MAXIMUM EXTENT PERMITTED BY APPLICBLE LAW, ATLASSIAN AND ITS THIRD PARTY SUPPLIERS/LICENSORS MAKE NO REPRESENTATIONS OR WARRANTIES WHATSOEVER WITH RESPECT TO, AND ASSUME NO LIABILITY FOR, ANY PRODUCTS PROVIDED ON AN EVALUATION BASIS. IN ADDITION, ATLASSIAN AND ITS THIRD PARTY LICENSOR/SUPPLIERS SHALL NOT BE LIABLE FOR DELAYS, INTERRUPTIONS, SERVICE FAILURES AND OTHER PROBLEMS INHERENT IN USE OF THE INTERNET AND ELECTRONIC COMMUNICATIONS OR OTHER SYSTEMS OUTSIDE THE REASONABLE CONTROL OF ATLASSIAN.

END USER MAY HAVE OTHER STATUTORY RIGHTS. HOWEVER, TO THE FULL EXTENT PERMITTED BY LAW, THE DURATION OF STATUTORILY REQUIRED WARRANTIES, IF ANY, SHALL BE LIMITED TO THE LIMITED WARRANTY PERIOD.

11.3 Hosted Services Facilities. The Hosted Services are controlled and operated from facilities in the United States. Atlassian makes no representations that the Hosted Service is appropriate or available for use in other locations. Those who access or use

the Hosted Service from other jurisdictions do so at their own volition and are entirely responsible for compliance with all applicable United States and local laws and regulations, including export and import regulations.

12. Limitation of Liability

12.1 MAXIMUM LIABILITY. EXCEPT WITH RESPECT TO AMOUNTS PAYABLE TO THIRD PARTIES PURSUANT TO THE PARTIES' INDEMNIFICATION OBLIGATIONS IN SECTION 4.8 AND 10 OR END USER'S BREACH OF ANY LICENSE OR USE RESTRICTIONS RELATING TO THE PRODUCTS, NOTWITHSTANDING ANY DAMAGES EITHER PARTY MIGHT INCUR FOR ANY REASON WHATSOEVER, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE ENTIRE LIABILITY OF EITHER PARTY TO THIS AGREEMENT UNDER ANY PROVISION OF THIS AGREEMENT AND THE OTHER PARTY'S EXCLUSIVE REMEDY HEREUNDER SHALL BE LIMITED TO THE ACTUAL DAMAGES SUCH PARTY INCURS, UP TO THE AMOUNT ACTUALLY PAID BY END USER FOR (A) SUCH SOFTWARE, DEPRECIATED ON A THREE-YEAR STRAIGHT LINE BASIS, OR (B) SUCH HOSTED SERVICE IN THE LAST TWELVE (12) MONTHS PRECEDING THE DATE ON WHICH THE CLAIM AROSE. TO THE MAXIMUM EXTENT PERMITTED BY LAW, EMBEDDED SOFTWARE LICENSORS WILL NOT BE LIABLE TO END USER FOR ANY DAMAGES WHATSOEVER, INCLUDING DIRECT DAMAGES OR THE TYPES OF DAMAGES DISCLAIMED IN SECTION 12.2 BELOW.

12.2 OTHER DISCLAIMERS. NOTWITHSTANDING ANYTHING ELSE IN THIS AGREEMENT, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AND EXCEPT FOR END USER'S BREACH OF ANY LICENSE OR USE RESTRICTIONS RELATING TO PRODUCTS, IN NO EVENT SHALL EITHER PARTY (OR THEIR RESPECTIVE THIRD PARTY SUPPLIERS/LICENSORS) BE LIABLE FOR ANY SPECIAL, INCIDENTAL, PUNITIVE, INDIRECT, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR REVENUE) WHATSOEVER ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT. END USER SPECIFICALLY UNDERSTANDS AND AGREES THAT ATLASSIAN (ON BEHALF OF ITSELF AND ITS THIRD PARTY SUPPLIERS/LICENSORS) DISCLAIMS ALL WARRANTIES AND LIABILITY WITH

RESPECT TO LOSS, LOSS OF USE OR CORRUPTION OF ANY END USER DATA (OR OTHER DATA END USER MAY PROVIDE) AND THE COSTS OF PROCUREMENT OF ANY SUBSTITUTE GOODS.

12.3 Failure of Essential Purpose. The parties agree that the limitations specified in this Section 12 will survive and apply even if any limited remedy specified in this Agreement is found to have failed of its essential purpose.

12.4 Force Majeure. Neither party shall be liable hereunder by reason of failure or delay in the performance of its obligations hereunder (except for the non-payment of money) on account of strikes, shortages, riots, insurrection, war, acts of terrorism, fires, flood, storm, explosions, earthquakes, acts of God, governmental action, labor conditions, or any other cause which is beyond the reasonable control of the party.

13. Publicity Rights

Atlassian may identify End User as a customer in Product promotional material. End User may request that Atlassian cease identifying End User at any time by submitting an email to sales@atlassian.com. Requests may take 30 days to process.

14. Assignment

End User may not assign this Agreement without the prior written consent of Atlassian (which consent will not be unreasonably withheld), provided that the assignee agrees to be bound by the terms and conditions contained in this Agreement. Atlassian may assign its rights and obligations under this Agreement in whole or in part without consent of End User. Any permitted assignee shall be bound by the terms and conditions of this Agreement.

15. Governing Law and Arbitration

15.1 Applicable Law; Venue. This Agreement is governed by the laws of California (with regard to conflict of law principles), and, subject to Section 15.2, the parties irrevocably

and unconditionally submit to the exclusive jurisdiction of the courts of San Francisco, California.

15.2 Arbitration. Except in circumstances where a party seeks urgent injunctive relief, before commencing any court proceedings, if any disputes arise under this Agreement the parties will negotiate in good faith to resolve the dispute and if the dispute has not been resolved within sixty (60) calendar days by the relevant parties using their best efforts to resolve the dispute, the dispute will be referred to arbitration and determined under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with such Rules with any hearings to be held at either the International Commercial Arbitration Center in Sydney (Australia), Amsterdam (Holland) or San Francisco, CA (USA), as mutually agreed by the parties.

15.3 Exclusion of UN Convention and UCITA. The terms of the United Nations Convention on Contracts for the Sale of Goods do not apply to this Agreement. The Uniform Computer Information Transactions Act (UCITA) shall not apply to this Agreement regardless of when or where adopted.

16. DMCA Notices

If End User believes that any content on Atlassian's Hosted Services or site violates its copyright, it should notify Atlassian's copyright agent in writing. The contact information for Atlassian's copyright agent is at the bottom of this section. Atlassian cannot take action unless End User gives us all the required information.

In order for Atlassian to take action, End User must do the following in its notice:

(i) provide End User's physical or electronic signature;

(ii) identify the copyrighted work that End User believe is being infringed;

(iii) identify the item that End User thinks is infringing and include sufficient information about where the material is located (including which website) so that Atlassian can find

it;

(iv) provide Atlassian with a way to contact End User (such as address, telephone number, or email);

(v) provide a statement that End User believes in good faith that the item identified as infringing is not authorized by the copyright owner, its agent, or the law to be used by Atlassian; and

(vi) provide a statement that the information End User provides in its notice is accurate, and that (under penalty of perjury), End User is authorized to act on behalf of the copyright owner whose work is being infringed.

Here is the contact information for Atlassian's copyright agent:

Copyright Enforcement
Atlassian Pty Ltd
Level 6, 341 George Street
Sydney, NSW 2000, Australia
E-Mail: copyright@atlassian.com

17. Government End Users

The Products are commercial computer software. If the user or licensee of the Products is an agency, department, or other entity of the United States Government, the use, duplication, reproduction, release, modification, disclosure, or transfer of the Software, or any related documentation of any kind, including technical data and manuals, is restricted by a license agreement or by the terms of this Agreement in accordance with Federal Acquisition Regulation 12.212 for civilian purposes and Defense Federal Acquisition Regulation Supplement 227.7202 for military purposes. The Products were developed fully at private expense. All other use is prohibited.

18. General

This Agreement is the entire agreement between End User and Atlassian relating to the Products and supersedes all prior or contemporaneous oral or written communications, proposals and representations with respect to the Products or any other subject matter covered by this Agreement. If any provision of this Agreement is held to be void, invalid, unenforceable or illegal, the other provisions shall continue in full force and effect. This Agreement may not be modified or amended except as described on the first page of this Agreement or otherwise with the written agreement of Atlassian (which may be withheld in its complete discretion without any requirement to provide reasons). As used herein, "including" (and its variants) means "including without limitation" (and its variants). If either party to this Agreement breaches any provision of this Agreement relating to Confidential Information or intellectual property rights, there may not be an adequate remedy available solely at law; therefore, an injunction, specific performance or other form of equitable relief or monetary damages or any combination thereof may be sought by the injured party to this Agreement. No failure or delay by the injured party to this Agreement in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder at law or equity. The parties are independent contractors. This Agreement shall not be construed as constituting either party as a partner of the other or to create any other form of legal association that would give on party the express or implied right, power or authority to create any duty or obligation of the other party.

Should you have any questions concerning this Agreement, or if you desire to contact Atlassian for any reason, please contact us.

1 Scope of the Agreement. This Agreement governs your initial purchase as well as any future purchases made by you that reference this Agreement. This Agreement includes our Privacy Policy, our Acceptable Use Policy, any Orders, and any other referenced policies and attachments. This Agreement applies to Atlassian add-ons or plugins that you purchase from the Atlassian Marketplace. However, it does not apply to add-ons or

plugins from other vendors on the Atlassian Marketplace, which are covered under the Atlassian Marketplace Terms of Use.

2 Types of Atlassian Products. This Agreement governs (a) Atlassian's commercially available downloadable software products (currently designated as "Server" or "Data Center" deployments) ("**Software**"), (b) Atlassian's hosted or cloud-based solutions (currently designated as "Cloud" deployments) ("**Hosted Services**"), and (c) any related support or maintenance services provided by Atlassian. Software and Hosted Services, together with related Documentation, are referred to as "**Products**". The Products and their permitted use are further described in Atlassian's standard documentation ("**Documentation**"). Section 6 (Software Terms) applies specifically to Software, and Section 7 (Hosted Services Terms) applies specifically to Hosted Services, but unless otherwise specified, other provisions of this Agreement apply to all Products.

3 Account Registration. You may need to register for an Atlassian account in order to place orders or access or receive any Products. Any registration information that you provide to us must be accurate, current and complete. You must also update your information so that we may send notices, statements and other information to you by email or through your account. You are responsible for all actions taken through your accounts.

4 Orders.

4.1 Directly with Atlassian. Atlassian's Product ordering documentation or purchase flow ("**Order**") will specify your authorized scope of use for the Products, which may include: (a) number and type of Authorized Users (as defined below), (b) storage or capacity (for Hosted Services), (c) numbers of licenses, copies or instances (for Software), or (d) other restrictions or billable units (as applicable, the "**Scope of Use**"). The term "**Order**" also includes any applicable Product or Support and Maintenance renewal, or purchases you make to increase or upgrade your Scope of Use.

4.2 Reseller Orders. This Agreement applies whether you purchase our Products directly from Atlassian or through Atlassian "Experts" or other authorized resellers (each, a

"**Reseller**"). If you purchase through a Reseller, your Scope of Use shall be as stated in the Order placed by Reseller for you, and Reseller is responsible for the accuracy of any such Order. Resellers are not authorized to make any promises or commitments on Atlassian's behalf, and we are not bound by any obligations to you other than what we specify in this Agreement.

5 Authorized Users. Only the specific individuals for whom you have paid the required fees and whom you designate through the applicable Product ("**Authorized Users**") may access and use the Products. Some Products may allow you to designate different types of Authorized Users, in which case pricing and functionality may vary according to the type of Authorized User. Authorized Users may be you or your Affiliates' employees, representatives, consultants, contractors, agents, or other third parties who are acting for your benefit or on your behalf. You may also permit your customers to have limited access to certain Products as Authorized Users, subject to the terms of our Customer Use Addendum. You may increase the number of Authorized Users permitted to access your instance of the Product by placing a new Order or, in some cases, directly through the Product. In all cases, you must pay the applicable fee for the increased number of Authorized Users. You are responsible for compliance with this Agreement by all Authorized Users. All use of Products by you and your Authorized Users must be within the Scope of Use and solely for the benefit of you or your Affiliates. "**Affiliate**" means an entity which, directly or indirectly, owns or controls, is owned or is controlled by or is under common ownership or control with a party, where "control" means the power to direct the management or affairs of an entity, and "ownership" means the beneficial ownership of 50% (or, if the applicable jurisdiction does not allow majority ownership, the maximum amount permitted under such law) or more of the voting equity securities or other equivalent voting interests of the entity.

6 Software Terms.

6.1 Your License Rights. Subject to the terms and conditions of this Agreement, Atlassian grants you a non-exclusive, non-sublicenseable and non-transferable license to install and use the Software during the applicable License Term in accordance with this Agreement, your applicable Scope of Use, and the Documentation. The term of each

Software license ("**License Term**") will be specified in your Order. Your License Term will end upon any termination of this Agreement, even if it is identified as "perpetual" or if no expiration date is specified in your Order. The Software requires a license key in order to operate, which will be delivered as described in Section 10.2 (Delivery).

6.2 Number of Instances. Unless otherwise specified in your Order, for each Software license that you purchase, you may install one production instance of the Software on systems owned or operated by you (or your third party service providers so long as you remain responsible for their compliance with the terms and conditions of this Agreement). We also make available "developer" licenses free of charge for certain of our Software offerings to allow you to deploy non-production instances, such as for staging or QA purposes. Details for how to request non-production licenses are available on our website.

6.3 Your Modifications. Subject to the terms and conditions of this Agreement (including without limitation Section 2 (Combining the Products with Open Source Software) of Third Party Code in Atlassian Products): (1) for any elements of the Software provided by Atlassian in source code form, and to the extent permitted in the Documentation, you may modify such source code solely for purposes of developing bug fixes, customizations and additional features for the Software and (2) you may also modify the Documentation to reflect your permitted modifications of the Software source code or the particular use of the Products within your organization. Any modified source code or Documentation constitutes "**Your Modifications**". You may use Your Modifications solely with respect to your own instances in support of your permitted use of the Software but you may not distribute the code to Your Modifications to any third party. Notwithstanding anything in this Agreement to the contrary, Atlassian has no support, warranty, indemnification or other obligation or liability with respect to Your Modifications or their combination, interaction or use with our Products. You shall indemnify, defend and hold us harmless from and against any and all claims, costs, damages, losses, liabilities and expenses (including reasonable attorneys' fees and costs) arising out of or in connection with any claim brought against us by a third party relating to Your Modifications (including but not limited to any representations or warranties you

make about Your Modifications or the Software) or your breach of this Section 6.3. This indemnification obligation is subject to your receiving (i) prompt written notice of such claim (but in any event notice in sufficient time for you to respond without prejudice); (ii) the exclusive right to control and direct the investigation, defense, or settlement of such claim; and (iii) all reasonably necessary cooperation of Atlassian at your expense.

6.4 Attribution. In any use of the Software, you must include the following attribution to Atlassian on all user interfaces in the following format: "Powered by Atlassian," which must in every case include a hyperlink to http://www.atlassian.com, and which must be in the same format as delivered in the Software.

6.5 Third Party Code. The Software includes code and libraries licensed to us by third parties, including open source software. See Third Party Code in Atlassian Products for additional provisions regarding our use of third party code.

7 Hosted Services Terms.

7.1 Access to Hosted Services. Subject to the terms and conditions of this Agreement, Atlassian grants you a non-exclusive right to access and use the Hosted Services during the applicable Subscription Term (as defined below) in accordance with this Agreement, your applicable Scope of Use and the Documentation. If Atlassian offers client software (e.g., a desktop or mobile application) for any Hosted Service, you may use such software solely with the Hosted Service, subject to the terms and conditions of this Agreement. You acknowledge that our Hosted Services are on-line, subscription-based products and that we may make changes to the Hosted Services from time to time.

7.2 Subscription Terms and Renewals. Hosted Services are provided on a subscription basis for a set term specified in your Order ("**Subscription Term**"). Except as otherwise specified in your Order, all subscriptions will automatically renew for periods equal to your initial Subscription Term (and you will be charged at the then-current rates) unless you cancel your subscription through your account at my.atlassian.com. If you cancel, your subscription will terminate at the end of then-current billing cycle, but you will not

be entitled to any credits or refunds for amounts accrued or paid prior to such termination.

7.3 Credentials. You must ensure that all Authorized Users keep their user IDs and passwords for the Hosted Services strictly confidential and not share such information with any unauthorized person. User IDs are granted to individual, named persons and may not be shared. You are responsible for any and all actions taken using your accounts and passwords, and you agree to immediately notify Atlassian of any unauthorized use of which you become aware.

7.4 Your Data. "**Your Data**" means any data, content, code, video, images or other materials of any type that you upload, submit or otherwise transmit to or through Hosted Services. You will retain all right, title and interest in and to Your Data in the form provided to Atlassian. Subject to the terms of this Agreement, you hereby grant to Atlassian a non-exclusive, worldwide, royalty-free right to (a) collect, use, copy, store, transmit, modify and create derivative works of Your Data, in each case solely to the extent necessary to provide the applicable Hosted Service to you and (b) for Hosted Services that enable you to share Your Data or interact with other people, to distribute and publicly perform and display Your Data as you (or your Authorized Users) direct or enable through the Hosted Service. Atlassian may also access your account or instance in order to respond to your support requests.

7.5 Security. Atlassian implements security procedures to help protect Your Data from security attacks. However, you understand that use of the Hosted Services necessarily involves transmission of Your Data over networks that are not owned, operated or controlled by us, and we are not responsible for any of Your Data lost, altered, intercepted or stored across such networks. We cannot guarantee that our security procedures will be error-free, that transmissions of Your Data will always be secure or that unauthorized third parties will never be able to defeat our security measures or those of our third party service providers.

7.6 Storage Limits. There may be storage limits associated with a particular Hosted Service. These limits are described in the services descriptions on our websites or in the

Documentation for the particular Hosted Service. Atlassian reserves the right to charge for additional storage or overage fees at the rates specified on our website. We may impose new, or may modify existing, storage limits for the Hosted Services at any time in our discretion, with or without notice to you.

7.7 Responsibility for Your Data.

7.7.1 General. You must ensure that your use of Hosted Services and all Your Data is at all times compliant with our Acceptable Use Policy and all applicable local, state, federal and international laws and regulations ("**Laws**"). You represent and warrant that: (i) you have obtained all necessary rights, releases and permissions to provide all Your Data to Atlassian and to grant the rights granted to Atlassian in this Agreement and (ii) Your Data and its transfer to and use by Atlassian as authorized by you under this Agreement do not violate any Laws (including without limitation those relating to export control and electronic communications) or rights of any third party, including without limitation any intellectual property rights, rights of privacy, or rights of publicity, and any use, collection and disclosure authorized herein is not inconsistent with the terms of any applicable privacy policies. Other than its security obligations under Section 7.5 (Security), Atlassian assumes no responsibility or liability for Your Data, and you shall be solely responsible for Your Data and the consequences of using, disclosing, storing, or transmitting it.

7.7.2 Sensitive Data. You will not submit to the Hosted Services (or use the Hosted Services to collect): (i) any personally identifiable information, except as necessary for the establishment of your Atlassian account; (ii) any patient, medical or other protected health information regulated by HIPAA or any similar federal or state laws, rules or regulations; or (iii) any other information subject to regulation or protection under specific laws such as the Gramm-Leach-Bliley Act (or related rules or regulations) ((i) through (iii), collectively, "**Sensitive Data**"). You also acknowledge that Atlassian is not acting as your Business Associate or subcontractor (as such terms are defined and used in HIPAA) and that the Hosted Services are not HIPAA compliant. "**HIPAA**" means the Health Insurance Portability and Accountability Act, as amended and supplemented.

Notwithstanding any other provision to the contrary, Atlassian has no liability under this Agreement for Sensitive Data.

7.7.3 Indemnity for Your Data. You will defend, indemnify and hold harmless Atlassian from and against any loss, cost, liability or damage, including attorneys' fees, for which Atlassian becomes liable arising from or relating to any claim relating to Your Data, including but not limited to any claim brought by a third party alleging that Your Data, or your use of the Hosted Services in breach of this Agreement, infringes or misappropriates the intellectual property rights of a third party or violates applicable law. This indemnification obligation is subject to your receiving (i) prompt written notice of such claim (but in any event notice in sufficient time for you to respond without prejudice); (ii) the exclusive right to control and direct the investigation, defense, or settlement of such claim; and (iii) all reasonable necessary cooperation of Atlassian at your expense.

7.8 Removals and Suspension. Atlassian has no obligation to monitor any content uploaded to the Hosted Services. Nonetheless, if we deem such action necessary based on your violation of this Agreement or in response to takedown requests that we receive following our guidelines for Reporting Copyright and Trademark Violations, we may (1) remove Your Data from the Hosted Services or (2) suspend your access to the Hosted Services. We will generally alert you when we take such action and give you a reasonable opportunity to cure your breach, but if we determine that your actions endanger the operation of the Hosted Service or other users, we may suspend your access immediately without notice. You will continue to be charged for the Hosted Service during any suspension period. We have no liability to you for removing or deleting Your Data from or suspending your access to any Hosted Services as described in this section.

7.9 Deletion at End of Subscription Term. We may remove or delete Your Data within a reasonable period of time after the termination of your Subscription Term.

7.10 Service-Specific Terms. Some of our Hosted Services may be subject to additional terms specific to that service as set forth in our Service-Specific Terms.

8 Support and Maintenance. Atlassian will provide the support and maintenance services for the Products described in the Atlassian Support Policy ("**Support and Maintenance**") during the period for which you have paid the applicable fee. Support and Maintenance is subject to the terms of the Atlassian Support Policy and will be provided at the support level and during the support term specified in your Order. The Atlassian Support Policy may be modified by Atlassian from time to time to reflect process improvements or changing practices. Support and Maintenance for Software includes access to New Releases, if and when available. You may use any New Releases that we provide to you during a valid support term in the same way that you use Software, and New Releases are included in the definition of Software in that case. "**New Releases**" are bug fixes, patches, major or minor releases, or any other changes, enhancements, or modifications to the Software that we make generally commercially available.

9 TAM and Training Services. We will provide Technical Account Manager (TAM) and training services purchased in an Order in accordance with the descriptions and conditions for those services set forth in the Order and the accompanying service descriptions or datasheets ("**Ancillary Services**"). Atlassian shall retain all right, title and interest in and to any materials, deliverables, modifications, derivative works or developments related to any training services we provide ("**Training Materials**"). Any Training Materials provided to you may be used only in connection with the Products subject to the same use restrictions for the Products. If applicable, you will reimburse Atlassian for reasonable travel and lodging expenses as incurred. TAM services are subject to the terms of the Atlassian Professional Services Agreement.

10 Returns and Financial Terms.

10.1 Return Policy. As part of our commitment to customer satisfaction, it is our customary business practice to allow customers to return a Product within 30 days of payment for any reason or no reason and to receive a refund of the amount paid for the returned Product. In the context of Software, a return means that we will disable the license key that allowed the Software to operate. In the context of Hosted Services, a return means that we will disable access to the Hosted Service. We will not accept

returns after the 30-day return period. You understand that Atlassian may change this practice in the future in accordance with Section 26 (Changes to this Agreement).

10.2 Delivery. We will deliver the applicable license keys (in the case of Software) or login instructions (in the case of Hosted Services) to the email addresses specified in your Order when we have received payment of the applicable fees. All deliveries under this Agreement will be electronic. For the avoidance of doubt, you are responsible for installation of any Software, and you acknowledge that Atlassian has no further delivery obligation with respect to the Software after delivery of the license keys.

10.3 Payment. You agree to pay all fees in accordance with each Order. Unless otherwise specified in your Order, you will pay all amounts in U.S. dollars at the time you place your Order. Other than as expressly set forth in Section 10.1 (Return Policy) and Section 20 (IP Indemnification by Atlassian), all amounts are non-refundable, non-cancelable and non-creditable. In making payments, you acknowledge that you are not relying on future availability of any Products beyond the current License Term or Subscription Term or any Product upgrades or feature enhancements. If you add Authorized Users during your License Term or Subscription Term, we will charge you for the increased number of Authorized Users pursuant to the then-currently applicable rates in your next billing cycle. You agree that we may bill your credit card for renewals, additional users, and unpaid fees, as applicable. If you purchase any Products through a Reseller, you owe payment to the Reseller as agreed between you and the Reseller, but you acknowledge that we may terminate your rights to use Products if we do not receive our corresponding payment from the Reseller.

10.4 Taxes. Your payments under this Agreement exclude any taxes or duties payable in respect of the Products in the jurisdiction where the payment is either made or received. To the extent that any such taxes or duties are payable by Atlassian, you must pay to Atlassian the amount of such taxes or duties in addition to any fees owed under this Agreement. Notwithstanding the foregoing, you may have obtained an exemption from relevant taxes or duties as of the time such taxes or duties are levied or assessed. In that case, you will have the right to provide to Atlassian any such exemption information, and Atlassian will use reasonable efforts to provide such invoicing documents as may enable

you to obtain a refund or credit for the amount so paid from any relevant revenue authority if such a refund or credit is available.

11 No-Charge Products. We may offer certain Products to you at no charge, including free accounts, trial use, and access to Beta Versions as defined below ("**No-Charge Products**"). Your use of No-Charge Products is subject to any additional terms that we specify and is only permitted for the period designated by us. You may not use No-Charge Products for competitive analysis or similar purposes. We may terminate your right to use No-Charge Products at any time and for any reason in our sole discretion, without liability to you. You understand that any pre-release and beta products we make available ("**Beta Versions**") are still under development, may be inoperable or incomplete and are likely to contain more errors and bugs than generally available Products. We make no promises that any Beta Versions will ever be made generally available. In some circumstances, we may charge a fee in order to allow you to access Beta Versions, but the Beta Versions will still remain subject to this Section 11 (No-Charge Products). All information regarding the characteristics, features or performance of Beta Versions constitutes Atlassian's Confidential Information. To the maximum extent permitted by applicable law, we disclaim all obligations or liabilities with respect to No-Charge Products, including any Support and Maintenance, warranty, and indemnity obligations.

12 Restrictions. Except as otherwise expressly permitted in this Agreement, you will not: (a) rent, lease, reproduce, modify, adapt, create derivative works of, distribute, sell, sublicense, transfer, or provide access to the Products to a third party, (b) use the Products for the benefit of any third party, (c) incorporate any Products into a product or service you provide to a third party, (d) interfere with any license key mechanism in the Products or otherwise circumvent mechanisms in the Products intended to limit your use, (e) reverse engineer, disassemble, decompile, translate, or otherwise seek to obtain or derive the source code, underlying ideas, algorithms, file formats or non-public APIs to any Products, except as permitted by law, (f) remove or obscure any proprietary or other notices contained in any Product, or (g) publicly disseminate information regarding the performance of the Products.

13 Your Development of Add-Ons.

13.1 License to Developer Guides. From time to time, Atlassian may publish SDK's or API's and associated guidelines ("**Developer Guides**") to allow you to develop plugins, extensions, add-ons or other software products or services that interoperate or are integrated with the Products ("**Add-Ons**"). You may distribute your Add-Ons to third parties, but only for those Products permitted by Atlassian, and only in accordance with the Developer Guides.

13.2 Conditions to Development of Add-Ons. Notwithstanding anything in this Agreement to the contrary, Atlassian has no support, warranty, indemnification or other obligation or liability with respect to your Add-Ons or their combination, interaction or use with the Products. You shall indemnify, defend and hold us harmless from and against any and all claims, costs, damages, losses, liabilities and expenses (including reasonable attorneys' fees and costs) arising out of or in connection with any claim brought against us by a third party relating to your Add-Ons (including but not limited to any representations or warranties you make about your Add-Ons) or your breach of this Section.

14 License Certifications and Audits. At our request, you agree to provide a signed certification that you are using all Products pursuant to the terms of this Agreement, including the Scope of Use. You agree to allow us, or our authorized agent, to audit your use of the Products. We will provide you with at least 10 days advance notice prior to the audit, and the audit will be conducted during normal business hours. We will bear all out-of-pocket costs that we incur for the audit, unless the audit reveals that you have exceeded the Scope of Use. You will provide reasonable assistance, cooperation, and access to relevant information in the course of any audit at your own cost. If you exceed your Scope of Use, we may invoice you for any past or ongoing excessive use, and you will pay the invoice promptly after receipt. This remedy is without prejudice to any other remedies available to Atlassian at law or equity or under this Agreement. To the extent we are obligated to do so, we may share audit results with certain of our third party licensors or assign the audit rights specified in this Section to such licensors.

15 Ownership and Feedback. Products are made available on a limited license or access basis, and no ownership right is conveyed to you, irrespective of the use of terms such as

"purchase" or "sale". Atlassian and its licensors have and retain all right, title and interest, including all intellectual property rights, in and to the Products (including all No-Charge Products), their "look and feel", any and all related or underlying technology, and any modifications or derivative works of the foregoing created by or for Atlassian, including without limitation as they may incorporate Feedback ("**Atlassian Technology**"). From time to time, you may choose to submit comments, information, questions, data, ideas, description of processes, or other information to Atlassian, including sharing Your Modifications or in the course of receiving Support and Maintenance ("**Feedback**"). Atlassian may in connection with any of its products or services freely use, copy, disclose, license, distribute and exploit any Feedback in any manner without any obligation, royalty or restriction based on intellectual property rights or otherwise. No Feedback will be considered your Confidential Information, and nothing in this Agreement limits Atlassian's right to independently use, develop, evaluate, or market products, whether incorporating Feedback or otherwise.

16 Confidentiality. Except as otherwise set forth in this Agreement, each party agrees that all code, inventions, know-how, business, technical and financial information disclosed to such party ("**Receiving Party**") by the disclosing party ("**Disclosing Party**") constitute the confidential property of the Disclosing Party ("**Confidential Information**"), provided that it is identified as confidential at the time of disclosure. Any Atlassian Technology and any performance information relating to the Products shall be deemed Confidential Information of Atlassian without any marking or further designation. Except as expressly authorized herein, the Receiving Party will hold in confidence and not use or disclose any Confidential Information. The Receiving Party's nondisclosure obligation shall not apply to information which the Receiving Party can document: (i) was rightfully in its possession or known to it prior to receipt of the Confidential Information; (ii) is or has become public knowledge through no fault of the Receiving Party; (iii) is rightfully obtained by the Receiving Party from a third party without breach of any confidentiality obligation; or (iv) is independently developed by employees of the Receiving Party who had no access to such information. The Receiving Party may also disclose Confidential Information if so required pursuant to a regulation, law or court order (but only to the minimum extent required to comply with such regulation or order and with advance

notice to the Disclosing Party). The Receiving Party acknowledges that disclosure of Confidential Information would cause substantial harm for which damages alone would not be a sufficient remedy, and therefore that upon any such disclosure by the Receiving Party the Disclosing Party shall be entitled to appropriate equitable relief in addition to whatever other remedies it might have at law. For the avoidance of doubt, this Section shall not operate as a separate warranty with respect to the operation of any Product.

17 Term and Termination. This Agreement is in effect for as long as you have a valid License Term or Subscription Term (the "Term"), unless sooner terminated as permitted in this Agreement. Either party may terminate this Agreement before the expiration of the Term if the other party materially breaches any of the terms of this Agreement and does not cure the breach within thirty (30) days after written notice of the breach. Either party may also terminate the Agreement before the expiration of the Term if the other party ceases to operate, declares bankruptcy, or becomes insolvent or otherwise unable to meet its financial obligations. You may terminate this Agreement at any time with notice to Atlassian, but you will not be entitled to any credits or refunds as a result of convenience termination for prepaid but unused Software, Hosted Services subscriptions, or Support and Maintenance. Except where an exclusive remedy may be specified in this Agreement, the exercise by either party of any remedy, including termination, will be without prejudice to any other remedies it may have under this Agreement, by law, or otherwise. Once the Agreement terminates, you (and your Authorized Users) will no longer have any right to use or access any Products, or any information or materials that we make available to you under this Agreement, including Atlassian Confidential Information. You are required to delete any of the foregoing from your systems as applicable (including any third party systems operated on your behalf) and provide written certification to us that you have done so at our request. The following provisions will survive any termination or expiration of this Agreement: Sections 7.7.3 (Indemnity for Your Data), 10.3 (Payment), 10.4 (Taxes), 11 (No-Charge Products) (disclaimers and use restrictions only), 12 (Restrictions), 13.2 (Conditions to Development of Add-Ons), 14 (License Certifications and Audits), 15 (Ownership and Feedback), 16 (Confidentiality), 17 (Term and Termination), 18.2 (Warranty Disclaimer), 19

(Limitation of Liability), 21 (Third Party Vendor Products), 24 (Dispute Resolution), 25 (Export Restrictions), and 27 (General Provisions).

18 Warranty and Disclaimer.

18.1 Due Authority. Each party represents and warrants that it has the legal power and authority to enter into this Agreement, and that, if you are an entity, this Agreement and each Order is entered into by an employee or agent of such party with all necessary authority to bind such party to the terms and conditions of this Agreement.

18.2 WARRANTY DISCLAIMER. ALL PRODUCTS ARE PROVIDED "AS IS," AND ATLASSIAN AND ITS SUPPLIERS EXPRESSLY DISCLAIM ANY AND ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND, INCLUDING ANY WARRANTY OF NON-INFRINGEMENT, TITLE, FITNESS FOR A PARTICULAR PURPOSE, FUNCTIONALITY, OR MERCHANTABILITY, WHETHER EXPRESS, IMPLIED, OR STATUTORY. YOU MAY HAVE OTHER STATUTORY RIGHTS, BUT THE DURATION OF STATUTORILY REQUIRED WARRANTIES, IF ANY, SHALL BE LIMITED TO THE SHORTEST PERIOD PERMITTED BY LAW. ATLASSIAN SHALL NOT BE LIABLE FOR DELAYS, INTERRUPTIONS, SERVICE FAILURES AND OTHER PROBLEMS INHERENT IN USE OF THE INTERNET AND ELECTRONIC COMMUNICATIONS OR OTHER SYSTEMS OUTSIDE THE REASONABLE CONTROL OF ATLASSIAN. TO THE MAXIMUM EXTENT PERMITTED BY LAW, NEITHER ATLASSIAN NOR ANY OF ITS THIRD PARTY SUPPLIERS MAKES ANY REPRESENTATION, WARRANTY OR GUARANTEE AS TO THE RELIABILITY, TIMELINESS, QUALITY, SUITABILITY, TRUTH, AVAILABILITY, ACCURACY OR COMPLETENESS OF ANY PRODUCTS OR ANY CONTENT THEREIN OR GENERATED THEREWITH, OR THAT: (A) THE USE OF ANY PRODUCTS WILL BE SECURE, TIMELY, UNINTERRUPTED OR ERROR-FREE; (B) THE PRODUCTS WILL OPERATE IN COMBINATION WITH ANY OTHER HARDWARE, SOFTWARE, SYSTEM, OR DATA; (C) THE PRODUCTS (OR ANY PRODUCTS, SERVICES, INFORMATION, OR OTHER MATERIAL PURCHASED OR OBTAINED BY YOU THROUGH THE PRODUCTS) WILL MEET YOUR REQUIREMENTS OR EXPECTATIONS); (D) ANY STORED DATA WILL BE ACCURATE OR RELIABLE OR THAT ANY STORED DATA WILL NOT BE LOST OR CORRUPTED; (E) ERRORS OR DEFECTS WILL BE CORRECTED; OR (F) THE PRODUCTS

(OR ANY SERVER(S) THAT MAKE A HOSTED SERVICE AVAILABLE) ARE FREE OF VIRUSES OR OTHER HARMFUL COMPONENTS.

19 Limitation of Liability. NEITHER PARTY (NOR ITS SUPPLIERS) SHALL BE LIABLE FOR ANY LOSS OF USE, LOST OR INACCURATE DATA, FAILURE OF SECURITY MECHANISMS, INTERRUPTION OF BUSINESS, COSTS OF DELAY OR ANY INDIRECT, SPECIAL, INCIDENTAL, RELIANCE OR CONSEQUENTIAL DAMAGES OF ANY KIND (INCLUDING LOST PROFITS), REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, EVEN IF INFORMED OF THE POSSIBILITY OF SUCH DAMAGES IN ADVANCE. NEITHER PARTY'S AGGREGATE LIABILITY TO THE OTHER SHALL EXCEED THE AMOUNT ACTUALLY PAID BY YOU TO US FOR PRODUCTS AND SUPPORT AND MAINTENANCE IN THE 12 MONTHS IMMEDIATELY PRECEDING THE CLAIM. NOTWITHSTANDING ANYTHING ELSE IN THIS AGREEMENT, OUR AGGREGATE LIABILITY TO YOU IN RESPECT OF NO-CHARGE PRODUCTS SHALL BE US$20. THIS SECTION 19 (LIMITATION OF LIABILITY) SHALL NOT APPLY TO (1) AMOUNTS OWED BY YOU UNDER ANY ORDERS, (2) EITHER PARTY'S EXPRESS INDEMNIFICATION OBLIGATIONS IN THIS AGREEMENT, OR (3) YOUR BREACH OF SECTION 12 (RESTRICTIONS) OR SECTION 2 (COMBINING THE PRODUCTS WITH OPEN SOURCE SOFTWARE) OF THIRD PARTY CODE IN ATLASSIAN PRODUCTS). TO THE MAXIMUM EXTENT PERMITTED BY LAW, NO SUPPLIERS OF ANY THIRD PARTY COMPONENTS INCLUDED IN THE PRODUCTS WILL BE LIABLE TO YOU FOR ANY DAMAGES WHATSOEVER. The parties agree that the limitations specified in this Section 19 (Limitation of Liability) will survive and apply even if any limited remedy specified in this Agreement is found to have failed of its essential purpose.

20 IP Indemnification by Atlassian. We will defend you against any claim brought against you by a third party alleging that a Product, when used as authorized under this Agreement, infringes a United States or European Union patent or registered copyright (a "**Claim**"), and we will indemnify you and hold you harmless against any damages and costs finally awarded by a court of competent jurisdiction or agreed to settlement by Atlassian (including reasonable attorneys' fees) arising out of a Claim, provided that we

have received from you: (a) prompt written notice of the claim (but in any event notice in sufficient time for us to respond without prejudice); (b) reasonable assistance in the defense and investigation of the claim, including providing us a copy of the claim and all relevant evidence in your possession, custody or control; and (c) the exclusive right to control and direct the investigation, defense, and settlement (if applicable) of the claim. If your use of a Product is (or in our opinion is likely to be) enjoined, if required by settlement, or if we determine such actions are reasonably necessary to avoid material liability, we may, at our option and in our discretion: (i) procure a license for your continued use of the Product in accordance with this Agreement; (ii) substitute a substantially functionally similar Product; or (iii) terminate your right to continue using the Product and refund, in the case of Software, the license fee paid by you as reduced to reflect a three year straight-line depreciation from the license purchase date, and in the case of a Hosted Service, any prepaid amounts for the terminated portion of the Subscription Term. Atlassian's indemnification obligations above do not apply: (1) if the total aggregate fees received by Atlassian with respect to your license to Software or subscription to Hosted Services in the 12 month period immediately preceding the claim is less than US$50,000; (2) if the Product is modified by any party other than Atlassian, but solely to the extent the alleged infringement is caused by such modification; (3) if the Product is used in combination with any non-Atlassian product, software or equipment, but solely to the extent the alleged infringement is caused by such combination; (4) to unauthorized use of Products; (5) to any Claim arising as a result of (y) Your Data (or circumstances covered by your indemnification obligations in Section 7.7.3 (Indemnity for Your Data)) or (z) any third-party deliverables or components contained with the Products; (6) to any unsupported release of the Software; or (7) if you settle or make any admissions with respect to a claim without Atlassian's prior written consent. THIS SECTION 20 (IP INDEMNIFICATION BY ATLASSIAN) STATES OUR SOLE LIABILITY AND YOUR EXCLUSIVE REMEDY FOR ANY INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS IN CONNECTION WITH ANY PRODUCT OR OTHER ITEMS PROVIDED BY ATLASSIAN UNDER THIS AGREEMENT.

21 Third Party Vendor Products. Atlassian or third parties may from time to time make available to you (e.g., through the Atlassian Marketplace) third-party products or

services, including but not limited to add-ons and plugins as well as implementation, customization, training, and other consulting services. If you procure any of these third party products or services, you do so under a separate agreement (and exchange of data) solely between you and the third party vendor. Atlassian does not warrant or support non-Atlassian products or services, whether or not they are designated by Atlassian as "verified" or otherwise, and disclaims all liability for such products or services. If you install or enable any third party products or services for use with Atlassian products, you acknowledge that Atlassian may allow the vendors of those products and services to access Your Data as required for the interoperation and support of such add-ons with the Atlassian products. Atlassian shall not be responsible for any disclosure, modification or deletion of Your Data resulting from any such access by third party add-on vendors.

22 Publicity Rights. We may identify you as an Atlassian customer in our promotional materials. You may request that we stop doing so by submitting an email to sales@atlassian.com at any time. Please note that it may take us up to 30 days to process your request.

23 Improving Our Products. We are always striving to improve our Products. In order to do so, we need to measure, analyze, and aggregate how users interact with our Products, such as usage patterns and characteristics of our user base. We collect and use analytics data regarding the use of our Products as described in our Privacy Policy.

24 Dispute Resolution

24.1 Dispute Resolution; Arbitration. In the event of any controversy or claim arising out of or relating to this Agreement, the parties hereto shall consult and negotiate with each other and, recognizing their mutual interests, attempt to reach a solution satisfactory to both parties. If the parties do not reach settlement within a period of 60 days, any unresolved controversy or claim arising out of or relating to this Agreement shall proceed to binding arbitration under the Rules of Arbitration of the International Chamber of Commerce. The parties shall seek to mutually appoint an arbitrator. If the parties cannot agree on a single arbitrator, then there shall be three (3) arbitrators: one

selected by each party, and a third selected by the first two. Arbitration will take place in one of the following cities as mutually agreed between the parties: Sydney (Australia), Amsterdam (Netherlands) or San Francisco, CA (USA). If the parties are unable to agree to one of these cities, then the arbitration shall proceed in San Francisco, CA. All negotiations and arbitration proceedings pursuant to this Section will be confidential and treated as compromise and settlement negotiations for purposes of all similar rules and codes of evidence of applicable legislation and jurisdictions. The language of the arbitration shall be English.

24.2 Governing Law; Jurisdiction. This Agreement will be governed by and construed in accordance with the applicable laws of the State of California, USA, without giving effect to the principles of that State relating to conflicts of laws. Each party irrevocably agrees that any legal action, suit or proceeding that is not otherwise subject to the arbitration provisions of Section 24.1 (Dispute Resolution; Arbitration) must be brought solely and exclusively in, and will be subject to the service of process and other applicable procedural rules of, the State or Federal court in San Francisco, California, USA, and each party irrevocably submits to the sole and exclusive personal jurisdiction of the courts in San Francisco, California, USA, generally and unconditionally, with respect to any action, suit or proceeding brought by it or against it by the other party. Notwithstanding the foregoing, Atlassian may bring a claim for equitable relief in any court with proper jurisdiction.

24.3 Injunctive Relief; Enforcement. Notwithstanding the provisions of Section 24.1 (Dispute Resolution; Arbitration), nothing in this Agreement shall prevent either party from seeking injunctive relief with respect to a violation of intellectual property rights, confidentiality obligations or enforcement or recognition of any award or order in any appropriate jurisdiction.

24.4 Exclusion of UN Convention and UCITA. The terms of the United Nations Convention on Contracts for the Sale of Goods do not apply to this Agreement. The Uniform Computer Information Transactions Act (UCITA) shall not apply to this Agreement regardless of when or where adopted.

25 Export Restrictions. The Products are subject to export restrictions by the United States government and import restrictions by certain foreign governments, and you agree to comply with all applicable export and import laws and regulations in your use of the Products. You shall not (and shall not allow any third-party to) remove or export from the United States or allow the export or re-export of any part of the Products or any direct product thereof: (a) into (or to a national or resident of) any embargoed or terrorist-supporting country; (b) to anyone on the U.S. Commerce Department's Table of Denial Orders or U.S. Treasury Department's list of Specially Designated Nationals; (c) to any country to which such export or re-export is restricted or prohibited, or as to which the United States government or any agency thereof requires an export license or other governmental approval at the time of export or re-export without first obtaining such license or approval; or (d) otherwise in violation of any export or import restrictions, laws or regulations of any United States or foreign agency or authority. You represent and warrant that (i) you are not located in, under the control of, or a national or resident of any such prohibited country or on any such prohibited party list and (ii) that none of Your Data is controlled under the US International Traffic in Arms Regulations. The Products are restricted from being used for the design or development of nuclear, chemical, or biological weapons or missile technology without the prior permission of the United States government.

26 Changes to this Agreement. We may update or modify this Agreement from time to time, including any referenced policies and other documents. If a revision meaningfully reduces your rights, we will use reasonable efforts to notify you (by, for example, sending an email to the billing or technical contact you designate in the applicable Order, posting on our blog, through your Atlassian account, or in the Product itself). If we modify the Agreement during your License Term or Subscription Term, the modified version will be effective upon your next renewal of a License Term, Support and Maintenance term, or Subscription Term, as applicable. In this case, if you object to the updated Agreement, as your exclusive remedy, you may choose not to renew, including cancelling any terms set to auto-renew. With respect to No-Charge Products, accepting the updated Agreement is required for you to continue using the No-Charge Products. You may be required to click through the updated Agreement to show your acceptance.

If you do not agree to the updated Agreement after it becomes effective, you will no longer have a right to use No-Charge Products. For the avoidance of doubt, any Order is subject to the version of the Agreement in effect at the time of the Order.

27 General Provisions. Any notice under this Agreement must be given in writing. We may provide notice to you via email or through your account. Our notices to you will be deemed given upon the first business day after we send it. You may provide notice to us by post to Atlassian Pty Ltd, c/o Atlassian, Inc., 1098 Harrison Street, San Francisco, CA, USA 94103, Attn: General Counsel. Your notices to us will be deemed given upon our receipt. Neither party shall be liable to the other for any delay or failure to perform any obligation under this Agreement (except for a failure to pay fees) if the delay or failure is due to unforeseen events which are beyond the reasonable control of such party, such as a strike, blockade, war, act of terrorism, riot, natural disaster, failure or diminishment of power or telecommunications or data networks or services, or refusal of a license by a government agency. You may not assign this Agreement without our prior written consent. We will not unreasonably withhold our consent if the assignee agrees to be bound by the terms and conditions of this Agreement. We may assign our rights and obligations under this Agreement (in whole or in part) without your consent. The Products are commercial computer software. If you are an agency, department, or other entity of the United States Government, the use, duplication, reproduction, release, modification, disclosure, or transfer of the Products, or any related documentation of any kind, including technical data and manuals, is restricted by the terms of this Agreement in accordance with Federal Acquisition Regulation 12.212 for civilian purposes and Defense Federal Acquisition Regulation Supplement 227.7202 for military purposes. The Products were developed fully at private expense. All other use is prohibited. This Agreement is the entire agreement between you and Atlassian relating to the Products and supersedes all prior or contemporaneous oral or written communications, proposals and representations with respect to the Products or any other subject matter covered by this Agreement. If any provision of this Agreement is held to be void, invalid, unenforceable or illegal, the other provisions shall continue in full force and effect. This Agreement may not be modified or amended by you without our written agreement (which may be withheld in our complete discretion without any requirement to provide

any explanation). As used herein, “including” (and its variants) means “including without limitation” (and its variants). No failure or delay by the injured party to this Agreement in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder at law or equity. The parties are independent contractors. This Agreement shall not be construed as constituting either party as a partner of the other or to create any other form of legal association that would give on party the express or implied right, power or authority to create any duty or obligation of the other party.

Cisco End User License Agreement, AnyConnect Secure Mobility Client, Release 3.0

Updated: January 12, 2011

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Cisco End User License Agreement, AnyConnect Secure Mobility Client, Release 3.0

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THE FOLLOWING TERMS OF THE AGREEMENT GOVERN CUSTOMER'S ACCESS AND USE OF EACH CISCO OR CISCO-SUPPLIED SOFTWARE ("SOFTWARE"), EXCEPT TO THE EXTENT: (A) THERE IS A SEPARATE SIGNED CONTRACT BETWEEN CUSTOMER AND CISCO GOVERNING CUSTOMER'S USE OF THE SOFTWARE, OR (B) THE SOFTWARE INCLUDES A SEPARATE "CLICK-ACCEPT" LICENSE AGREEMENT OR THIRD PARTY LICENSE AGREEMENT AS PART OF THE INSTALLATION AND/OR DOWNLOAD PROCESS GOVERNING CUSTOMER'S USE OF THE SOFTWARE. TO THE EXTENT OF A CONFLICT BETWEEN THE PROVISIONS OF THE FOREGOING DOCUMENTS, THE ORDER OF PRECEDENCE SHALL BE (1)THE SIGNED CONTRACT, (2) THE CLICK-ACCEPT AGREEMENT OR THIRD PARTY LICENSE AGREEMENT, AND (3) THE AGREEMENT.

License

Conditioned upon compliance with the terms and conditions of the Agreement, Cisco grants to Customer a nonexclusive and nontransferable license to use for Customer's internal business purposes the Software and the Documentation for which Customer has paid the required license fees. "Documentation" means written information (whether contained in user or technical manuals, training materials, specifications or otherwise) pertaining to the Software and made available by Cisco with the Software in any manner (including on CD-ROM, or on-line). In order to use the Software, Customer may be required to input a registration number or product authorization key and register Customer's copy of the Software online at Cisco's website to obtain the necessary license key or license file.

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(iii) reverse engineer or decompile, decrypt, disassemble or otherwise reduce the Software to human-readable form, except to the extent otherwise expressly permitted under applicable law notwithstanding this restriction;

(iv) publish any results of benchmark tests run on the Software;

(v) use or permit the Software to be used to perform services for third parties, whether on a service bureau or time sharing basis or otherwise, without the express written authorization of Cisco; or

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To the extent required by applicable law, and at Customer's written request, Cisco shall provide Customer with the interface information needed to achieve interoperability between the Software and another independently created program, on payment of Cisco's applicable fee, if any. Customer shall observe strict obligations of confidentiality with respect to such information

and shall use such information in compliance with any applicable terms and conditions upon which Cisco makes such information available.

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For purposes of the Agreement, "Software" shall include (and the terms and conditions of the Agreement shall apply to) computer programs, including firmware, as provided to Customer by Cisco or an authorized Cisco reseller, and any upgrades, updates, bug fixes or modified versions thereto (collectively, "Upgrades") or backup copies of any of the foregoing. NOTWITHSTANDING ANY OTHER PROVISION OF THE AGREEMENT: (1) CUSTOMER HAS NO LICENSE OR RIGHT TO MAKE OR USE ANY ADDITIONAL COPIES OR UPGRADES UNLESS CUSTOMER, AT THE TIME OF MAKING OR ACQUIRING SUCH COPY OR UPGRADE, ALREADY HOLDS A VALID LICENSE TO THE ORIGINAL SOFTWARE AND HAS PAID THE APPLICABLE FEE FOR THE UPGRADE OR ADDITIONAL COPIES; (2) USE OF UPGRADES IS LIMITED TO CISCO EQUIPMENT FOR WHICH CUSTOMER IS THE ORIGINAL END USER PURCHASER OR LESSEE OR OTHERWISE HOLDS A VALID LICENSE TO USE THE SOFTWARE WHICH IS BEING UPGRADED; AND (3) THE MAKING AND USE OF ADDITIONAL COPIES IS LIMITED TO NECESSARY BACKUP PURPOSES ONLY.

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Customer Records

Customer grants to Cisco and its independent accountants the right to examine Customer's books, records and accounts during Customer's normal business hours to verify compliance with this Agreement. In the event such audit discloses non-compliance with this Agreement,

Customer shall promptly pay to Cisco the appropriate license fees, plus the reasonable cost of conducting the audit.

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- Cisco AnyConnect Secure Mobility Client
- Cisco AnyConnect VPN Client
- Cisco AnyConnect Profile Editor
- Cisco AnyConnect Host Scan (HostScan)
- Cisco AnyConnect Diagnostics and Reporting Tool (DART)
- Cisco SSL VPN Client
- Cisco VPN Client
- Cisco Secure Desktop
- Smart Tunnels
- Port Forwarding
- Additional SSL VPN delivered applets

Definitions

For purposes of this SEULA, the following definitions apply:

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"Network Access Manager Module" means a separate module in the Cisco AnyConnect Secure Mobility Client with IEEE 802.1X authentication functionality to manage wired and wireless network connections.

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April 9, 2014

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- **Software User Agreement in plain HTML (notice.html)**
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4. **Consumer Rights**. If you obtained software as a consumer, nothing in this Agreement affects your statutory rights.

5. **Electronic Delivery**. HP may elect to deliver software and related software product or license information by electronic transmission or download.

6. **License Grant**. If you abide by this Agreement, HP grants you a non-exclusive non-transferable license to use one copy of the version or release of the accompanying software for your internal purposes only, and is subject to any specific software licensing information that is in the software product or its Supporting Material.

   Your use is subject to the following restrictions, unless specifically allowed in Supporting Material:
   - You may not use software to provide services to third parties.
   - You may not make copies and distribute, resell or sublicense software to third parties.
   - You may not download and use patches, enhancements, bug fixes, or similar updates unless you have a license to the underlying software. However, such license doesn't automatically give you a right to receive such updates and HP reserves the right to make such updates only available to customers with support contracts.
   - You may not copy software or make it available on a public or external distributed network.
   - You may not allow access on an intranet unless it is restricted to authorized users.
   - You may make one copy of the software for archival purposes or when it is an essential step in authorized use.
   - You may not modify, reverse engineer, disassemble, decrypt, decompile or make derivative works of software. If you have a mandatory right to do so under statute, you must inform HP in writing about such modifications.

7. **Remote Monitoring**. Some software may require keys or other technical protection measures and HP may monitor your compliance with the Agreement, remotely or otherwise. If HP makes a license management program for recording and reporting license usage information, you will use such program no later than 180 days from the date it's made available.

8. **Ownership**. No transfer of ownership of any intellectual property will occur under this Agreement.

9. **Copyright Notices**. You must reproduce copyright notices on software and documentation for authorized copies.

10. **Operating Systems**. Operating system software may only be used on approved hardware and configurations.

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11. **90-day Limited Warranty for HP Software**
    - HP-branded software materially conforms to its specifications, if any, and is free of malware at the time of delivery; if you notify HP within 90 days of delivery of non-conformance to this warranty, HP will replace your copy. This Agreement states all remedies for warranty claims.
    - HP does not warrant that the operation of software will be uninterrupted or error free, or that software will operate in hardware and software combinations other than as authorized by HP in Supporting Material. To the extent permitted by law, HP disclaims all other warranties.

12. **Intellectual Property Rights Infringement.** HP will defend and/or settle any claims against you that allege that HP-branded software as supplied under this Agreement infringes the intellectual property rights of a third party. HP will rely on your prompt notification of the claim and cooperation with our defense. HP may modify the software so as to be non-infringing and materially equivalent, or we may procure a license. If these options are not available, we will refund to you the amount paid for the affected product in the first year or the depreciated value thereafter. HP is not responsible for claims resulting from any unauthorized use of the software.

13. **Limitation of Liability**. HP's liability to you under this Agreement is limited to the amount actually paid by you to HP for the relevant software, except for amounts in Section 12 ("Intellectual Property Rights Infringement"). Neither you nor HP will be liable for lost revenues or profits, downtime costs, loss or damage to data or indirect, special or consequential costs or damages. This provision does not limit either party's liability for: unauthorized use of intellectual property, death or bodily injury caused by their negligence; acts of fraud; willful repudiation of the Agreement; or any liability that may not be excluded or limited by applicable law.

14. **Termination**. This Agreement is effective until terminated or in the case of a limited-term license, upon expiration; however, your rights under this Agreement terminate if you fail to comply with it. Immediately upon termination or expiration, you will destroy the software and documentation and any copies, or return them to HP. You may keep one copy of software and documentation for archival purposes. We may ask you to certify in writing you have complied with this section. Warranty disclaimers, the limitation of liability, this section on termination, and Section 15 ("General") will survive termination.

15. **General.**
    a. Assignment. You may not assign this Agreement without prior written consent of HP, payment of transfer fees and compliance with HP's software license transfer policies. Authorized assignments will terminate your license to the software and you must deliver software and documentation and copies thereof to the assignee. The assignee will agree in writing to this Agreement. You may only transfer firmware if you transfer associated hardware.
    b. U.S. Government. If the software is licensed to you for use in the performance of a U.S. Government prime contract or subcontract, you agree that, consistent with FAR 12.211 and 12.212, commercial computer software, computer software documentation and technical data for commercial items are licensed under HP's standard commercial license.
    c. Global Trade Compliance. You agree to comply with the trade-related laws and regulations of the U.S. and other national governments. If you export, import or otherwise transfer products provided under this Agreement, you will be responsible for obtaining any required export or import authorizations. You confirm that you are not located in a country that is subject to trade control sanctions (currently Cuba, Iran, N. Korea, N. Sudan, and Syria) and further agree that you will not retransfer the products to any such country. HP may suspend its performance under this Agreement to the extent required by laws applicable to either party.
    d. Audit. HP may audit you for compliance with the software license terms. Upon reasonable notice, HP may conduct an audit during normal business hours (with the auditor's costs being at

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HP's expense). If an audit reveals underpayments then you will pay to HP such underpayments. If underpayments discovered exceed five (5) percent, you will reimburse HP for the auditor costs.

e. Open Source Components. To the extent the Supporting Material includes open source licenses, such licenses shall control over this Agreement with respect to the particular open source component. To the extent Supporting Material includes the GNU General Public License or the GNU Lesser General Public License: (a) the software includes a copy of the source code; or (b) if you downloaded the software from a website, a copy of the source code is available on the same website; or (c) if you send HP written notice, HP will send you a copy of the source code for a reasonable fee.

f. Notices. Written notices under this Agreement may be provided to HP via the method provided in the Supporting Material or if none, via "contact HP" site on www.hp.com.

g. Governing Law. This Agreement will be governed by the laws of the state of California, U.S.A., excluding rules as to choice and conflict of law. You and HP agree that the United Nations Convention on Contracts for the International Sale of Goods will not apply.

h. Force Majeure. Neither party will be liable for performance delays nor for non-performance due to causes beyond its reasonable control, except for payment obligations.

i. Entire Agreement. This Agreement represents our entire understanding with respect to its subject matter and supersedes any previous communication or agreements that may exist. Modifications to the Agreement will be made only through a written amendment signed by both parties. If HP doesn't exercise its rights under this Agreement, such delay is not a waiver of its rights.

16. **Consumer Rights**.

a. Non-excludable statutory rights

Consumers in some countries, states or territories may have the benefit of certain statutory rights and remedies under consumer legislation in respect of which HP's liability cannot lawfully be excluded or limited. If you acquired the software as a consumer within the meaning of relevant consumer legislation in your country, state or territory, the provisions of this Agreement (including the disclaimers of warranties, limitations and exclusions of liability) must be read subject to applicable law and apply only to the maximum extent permitted by that applicable law.

b. Australian Consumers.

If you acquired the software as a consumer within the meaning of the 'Australian Consumer Law' under the Australian *Competition and Consumer Act* 2010 (Cth) then despite any other provision of this Agreement:

(1) the software comes with guarantees that cannot be excluded under the Australian Consumer Law, including that goods will be of acceptable quality and services will be supplied with due care and skill. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the Software repaired or replaced if it is not of acceptable quality and the failure does not amount to a major failure

(2) nothing in this Agreement excludes, restricts or modifies any right or remedy, or any guarantee, warranty or other term or condition implied or imposed by the Australian Consumer Law which cannot be lawfully excluded or limited; and

(3) the benefits provided to you by the express warranties in this Agreement are in addition to other rights and remedies available to you under the Australian Consumer Law. Your rights under the Australian Consumer Law prevail to the extent that they are inconsistent with any limitations contained in the express warranty.

The software may be capable of retaining user-generated data. HP hereby provides you with notice that if HP repairs your software, that repair may result in the loss of that data. To the full extent permitted by law, the limitations and exclusions of HP's liability in this Agreement apply in respect of any such loss of data.

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If you think that you are entitled to any warranty under this agreement or any of the above remedies, please contact HP:

HP PPS Australia Pty Ltd
Building F, 1 Homebush Bay Drive
Rhodes, NSW 2138
Australia

To initiate a support request or warranty claim, please call 13 10 47 (within Australia) or +61 2 8278 1039 (if dialing internationally) or visit www.hp.com.au and select the "Customer Service" option for the most current list of phone support numbers.

(4) If you are a consumer within the meaning of the Australia Consumer Law and you are purchasing the software or warranty and support services for the Software which are not of a kind ordinarily acquired for personal, domestic or household use or consumption, then despite any other provision of this agreement, HP limits its liability for failure to comply with a consumer guarantee as follows:

(A) provision of warranty or support services for the Software: to any one or more of the following: re-supply of the services or payment of the costs of having the services re-supplied;

(B) provision of the software: to any one or more of the following: replacement of the software or the supply of equivalent software; repair of the software; payment of the costs of replacing the software or of acquiring equivalent software; or payment of the costs of having the software repaired; and

(C) otherwise, to the maximum extent permitted by law.

c. New Zealand Consumers

In New Zealand, the software comes with guarantees that cannot be excluded under the New Zealand consumer law. In New Zealand, "Consumer Transaction" means a transaction involving a person who is purchasing goods for personal, domestic or household use or consumption and not for the purpose of a business. New Zealand consumers who are purchasing goods for personal, domestic or household use or consumption and not for the purpose of a business ("New Zealand Consumers") are entitled to repair, replacement or refund for a failure and compensation for other reasonably foreseeable loss or damage. A New Zealand Consumer (as defined above) may recover the costs of returning the product to the place of purchase if there is a breach of the New Zealand consumer law; furthermore, if it will be of significant cost to the New Zealand Consumer to return the goods to HP then HP will collect such goods at its own cost.

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HP Support Service Agreement
Terms and Conditions (United States version)

1. **Support Services**: HP will provide support services (hereafter referred to as the "Support Service(s)") as described in this HP Support Service Agreement (hereafter referred to as the "Agreement") and the applicable Service Plan Description for the HP product purchased in the United States for which this Agreement was purchased. A third party (hereafter referred to as an "Authorized Representative") may provide the Support Service on behalf of HP.

2. **Customer:** As used in this Agreement, "Customer" refers to an end-user HP customer who purchases the Support Services described in this Agreement directly from HP or from an authorized HP retailer, reseller, wholesaler, or distributor.

3. **Charges:** Customer will prepay for the Support Services to be provided to Customer at the time the Customer purchases this Agreement. Customer will pay all applicable taxes. Full refunds for prepaid Support Services are available from the place of purchase only if Customer cancels within thirty days of receipt of the Agreement and a claim has not been made under this Agreement. An additional charge to the prepaid amount may be billed to Customer for HP products that are found not defective by HP or for ineligible products as described in Section #8 below.

4. **Eligible Products:** To be eligible to purchase Support Services, the HP product must be, in HP's reasonable opinion, in good operating condition. Customer represents to HP the HP product is in good operating condition. Any HP software product covered by this Agreement must be bundled with the HP product at the time of purchase by Customer and must be at its current or immediately preceding version level. In addition:

    a. Support for software bundled with the HP product is included in the Support Services. No other software is covered by this Agreement. Support for software bundled with the HP product is limited to verbal assistance with:
        i. Answering Customer installation questions (first steps and prerequisites),
        ii. Setting up and configuring the software (first steps),
        iii. Interpreting system error messages, and
        iv. Isolating system problems to software usage problems.
    b. Support for software bundled with the HP product does not include, among other things:
        i. Generating or diagnosing user-generated programs or source codes,
        ii. Bug fixes or software repair,
        iii. Interconnectivity or compatibility problems specific to third party products
        iv. Installation of non-HP software products,
        v. System optimization and customization, and
        vi. Network configuration.
    c. Relocation of the HP product is Customer's responsibility. Support Services resulting from relocation may result in additional charges and modified service response times.
    d. Unless otherwise specified in the applicable Service Plan Description, HP products located outside the United States will not receive Support Services under this Agreement.

e. At HP's option, Customer may procure additional service plans for HP products covered under this Agreement which are in good operating condition at the time this Agreement expires.

5. **Limited Warranty:** HP PROVIDES A LIMITED WARRANTY AGAINST DEFECTS IN HARDWARE MATERIALS AND WORKMANSHIP FOR 90 DAYS AFTER RETURN OF THE HP PRODUCT TO CUSTOMER OR FOR THE REMAINING TERM OF THIS AGREEMENT, WHICHEVER IS LONGER, FOR REPLACEMENT PARTS PROVIDED TO MAINTAIN HP HARDWARE PRODUCTS SERVICED UNDER THIS AGREEMENT. HP DOES NOT PROVIDE ANY WARRANTY FOR SUPPORT SERVICES FOR HP SOFTWARE. ANY SUPPORT SERVICES FOR HP SOFTWARE IS PROVIDED 'AS IS'. IF HP RECEIVES NOTICE OF DEFECTIVE HARDWARE REPLACEMENT PARTS DURING THIS PERIOD, HP WILL, AT ITS OPTION, REPAIR OR REPLACE THE REPLACEMENT PART(S) THAT PROVE TO BE DEFECTIVE. THE ABOVE LIMITED WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED. TO THE EXTENT PERMITTED BY LAW, HP SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NONINFRINGEMENT. SOME STATES DO NOT ALLOW A LIMITATION ON AN IMPLIED WARRANTY FOR CONSUMER PRODUCTS OR OF A CONSUMER'S STATUTORY RIGHTS. IN SUCH STATES SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE APPLICABLE WARRANTY PERIOD.

6. **Limitations of Liability and Remedies:** FOR ANY BREACH OF THIS AGREEMENT BY HP, CUSTOMER'S REMEDY AND HP'S LIABILITY WILL BE LIMITED TO A REFUND OF THE CHARGES PAID FOR THIS AGREEMENT BY CUSTOMER FOR THE HP PRODUCTS AT ISSUE. HP WILL NOT BE LIABLE FOR PERFORMANCE DELAYS OR FOR NONPERFORMANCE DUE TO CAUSES BEYOND ITS REASONABLE CONTROL, INCLUDING WHEN PRODUCT OR PARTS ARE NOT AVAILABLE. TO THE EXTENT HP IS HELD LEGALLY LIABLE TO CUSTOMER, HP'S LIABILITY IS LIMITED TO DAMAGES FOR BODILY INJURY AND DAMAGES TO TANGIBLE PROPERTY UP TO THE LIMIT OF $300,000 (U.S) AND FOR OTHER DIRECT DAMAGES FOR ANY CLAIM BASED ON A MATERIAL BREACH OF SUPPORT SERVCIES, UP TO A MAXIMUM OF THE CHARGES PAID BY CUSTOMER FOR THIS AGREEMENT FOR THE HP PRODUCTS AT ISSUE. THE REMEDIES PROVIDED IN THIS AGREEMENT ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP, ITS AFFILIATES, ITS SUBCONTRACTORS, OR SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING DOWNTIME COSTS OR LOST PROFIT), OR OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. SOME STATES DO NOT ALLOW A LIMITATION OR THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS OR OF A CONSUMER'S STATUTORY RIGHTS. IN SUCH STATES SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU.

7. **Timeliness of Action**: In no event will any cause of action be brought against HP more than one year after the cause of action has accrued.

8. **Limitations of Service:** HP does not provide Support Services for products not supplied by HP unless HP agrees to do so in writing or for HP products that Customer does not allow HP to

incorporate modifications. Customer is responsible for removing any components or products not eligible for Support Services to allow HP to perform the Support Services on the HP products covered by this Agreement. If Customer does not remove such components or products, HP may remove the components or products but will not be responsible for any loss of or damages to the components or products. If Support Services are made more difficult because of such ineligible components or products, HP will charge Customer for the extra work at HP's standard service rates.

Unless otherwise specified, this Agreement excludes the provision, return/replacement, and installation by HP of consumables, user replacement parts, maintenance kits, or other consumable items including, but not limited to, accessories, operating supplies, magnetic media, paper, print heads, ribbons, toner, a/c adapters, and batteries.

Unless otherwise specified, Support Services do not cover any damage or failure caused by: (i) use of non-HP media, supplies and other products; (ii) site conditions that do not conform to HP's site specifications; (iii) neglect, improper use, fire or water damage, electrical disturbances, transportation by Customer, work or modification by people other than HP employees or HP Authorized Representatives, or other causes beyond HP's control; or (iv) inability of third party products and non-compliant HP products in Customer's supported environment to correctly process, provide or receive date data (i.e., representations for month, day, and year), or the inability of these products to properly exchange date data with any products covered by Support Services. Complete resolution of some problems may be beyond the control of HP and thus outside the scope of these Support Services.

9. **Non-HP Products:** HP is not liable for the compatibility, performance or non-performance of third party vendors, their products, or their Support Services.

10. **Customer Responsibilities (the HP product covered by this Agreement and instructions on how to obtain Support Services are described on the HP confirmation of payment furnished to Customer and/or the back of the physical HP Care Pack or Service Agreement, which are incorporated herein by this reference):**

    a. Customer is responsible for registering the HP product to be supported using the registration instructions within each package, email document, or as otherwise directed by HP. In the event a covered HP product changes location or the Support Service is transferred with the sale of a used HP product, additional registration (or a proper adjustment to existing HP registration) is required.
    b. Customer will make all reasonable efforts to support and cooperate with HP in resolving the problem requiring support remotely, for example, starting and executing self tests or diagnostic programs, providing all necessary information, or performing basic remedial activities upon HP's request.
    c. Customer will ensure that HP service personnel are provided with sufficient electrical power to perform necessary hardware maintenance and operating supplies used during normal operation.
    d. Customer is responsible for the security of its proprietary and confidential information and for maintaining a procedure external to the HP products for reconstruction of lost, or altered files, data, or programs.

e. Customer must notify HP if any HP products serviced are being used in an environment that poses a potential health hazard to HP employees or subcontractors.
f. Customer must ensure that an adult representative 18 years or older is present when HP is providing Support Services at Customer's designated location or by telephone.
g. If remote Support Services are available, Customer will allow HP to keep system and network diagnostic programs resident on the covered HP product and provide HP login access for the exclusive purpose of performing diagnostics.
h. Customer acknowledges that Customer has no ownership interest in any diagnostic software provided or utilized by HP and that HP will remove these diagnostic programs and any HP loaned modems or other equipment upon termination or expiration of this Agreement. When capable, the covered HP products must be configured to permit access to one voice-grade telephone line and one data-quality telephone line; both must have terminations located near the covered HP product. Upon HP's request, Customer will run HP-supplied diagnostic programs before having an HP product serviced under this Agreement.

11. **Off-Site Support Services and Exchange:** Customer is responsible for performing the following functions prior to return shipping a failed HP product to HP: a) perform all steps for self-test and trouble-shooting specified in the operating manual for the product; b) provide, in writing, the model number, serial number, current failure symptoms, pertinent failure history and ship-to address (if applicable); and c) unless the HP product will be delivered and picked up in person by Customer, Customer is responsible for packaging the failed HP product carefully in the original or HP provided shipping container, or a shipping container that prevents the HP product from being damaged while in transit to HP.

12. **Maximum Use Limitations:** HP products operated in excess of their maximum usage rate or duty cycle (as specified in the technical data sheet, operating manual, or Service Plan Description) will be serviced at HP's standard service rates.

13. **Transfer of Service:** This Agreement may only be assigned in connection with sale of the covered HP product and only within the United States. Customer must inform HP when the covered HP product is sold per Section 10a. HP is not responsible for any taxes or fees associated with the assignment.

14. **Term - Post Warranty Agreement:** The provisions of this Agreement, among other service plans, apply to post warranty service plans, i.e. service plans covering an HP product after the expiration of the original HW product warranty. The coverage period for the post warranty agreement and service plan will begin at the time of purchase of the Agreement and continue for the period purchased by Customer.

15. **Term – In Warranty Agreement**: The provisions of this Agreement, among other service plans, apply to in warranty service plans, i.e. a service plan which provides additional services to the services provided in the original warranty. The commencement date for in warranty

agreements and service plans will be backdated to the date the HP product was purchased. Support Services for in warranty agreements and service plans purchased within the first year of product ownership will apply for the remainder of the first year of HW ownership and for the additional year(s) as purchased by Customer. The in warranty agreement and service plan will terminate either at the end of the specified number of years of service purchased; or for service plans for HP printers with page limits, terminate once the specified page limit (or page count) has been exceeded or at the end of the specified number of years of service purchased, whichever comes first. Page count is defined as the number of pages (printed or plain) that have passed through a printers print engine and recorded on the test page.

The Support Services under this Agreement will continue until the Agreement expires or until terminated by either party under the provisions of this Agreement. This Agreement is not renewable; Customer may for some eligible products, purchase another Agreement upon expiration or termination of this Agreement. The cost of another Agreement will reflect the age of the product and service costs at time of purchase.

16. **Termination:** Customer may terminate this Agreement by notifying HP in writing at Hewlett-Packard Company within 30 days of purchase, to receive a full refund, less the purchase cost of any claims. After 30 days, the Customer may terminate the Agreement, by submitting a cancellation in writing to the above address. The Customer will receive a pro rata refund based on the time expired less the cost of any claims. HP may terminate at any time after the effective date of this Agreement if Customer fails to perform or observe any condition of this Agreement with HP. Notice of such cancellation by HP will be in writing and given at least thirty (30) days prior to cancellation. If HP cancels, Customer will receive a pro rata refund based on the time expired under the Agreement.

17. **Governing Laws**: Any disputes arising in connection with this Agreement will be governed by the laws of the State of California. The courts of the State of California shall have jurisdiction.

18. **Entire Agreement**: The terms and conditions of this Agreement (together with the Service Plan Description) constitute the entire understanding between HP and the Customer relating to the provision of Support Services described herein and will supersede any previous communication, representation or agreement whether oral or written. Customer's additional or different terms and conditions will not apply. *Customer's acceptance of this Agreement is deemed to occur upon Customer's purchase of Support Services. No change of any of the terms and conditions will be valid unless in writing signed by authorized personnel of each party.*

19. **State-Specific Terms and Conditions**: The terms provided below are specific to Support Services purchased in certain states within the United States. If Customer is not a permanent resident of the state identified in each paragraph below at the time Customer purchases the Support Service, and if the Support Service is not provided to Customer in that state, then Customer is not eligible for the additional rights and/or remedies below. Any conflict between the terms of this Paragraph 19 and the remainder of this Agreement will be governed by this Paragraph 19.

Alabama, California, Hawaii, Maryland, Minnesota, Missouri, New Mexico, New York, Nevada, South Carolina, Texas, Washington and Wyoming Residents

If Customer cancels this Agreement pursuant to Section 16 of these Terms and Conditions, and HP does not refund the purchase price to Customer within thirty (30) days for California, New York and Washington residents, within forty-five (45) days for Alabama, Arkansas, Hawaii, Maryland, Minnesota, Missouri, Nevada, South Carolina, Texas and Wyoming residents, and within sixty (60) days for New Mexico residents, HP is required to pay Customer a penalty of 10% per month for the unpaid amount that is owed to Customer. Customer's right to cancel and receive this penalty payment as described in this paragraph only applies to the original purchaser of this Agreement and may not be transferred or assigned to any other person.

Alabama Residents

If the original purchaser of this Agreement cancels the Agreement pursuant to Section 16, (i) within thirty days of the date of purchase, but after a claim has been made, or (ii) after thirty days from date of original purchase, the purchaser will receive a refund of the unearned portion of the purchase price based on time expired, less a termination fee of $25. If the original purchaser of this Agreement cancels the Agreement pursuant to Section 16 within thirty days of date of purchase, with no claim having been made, the original purchaser will receive a full refund of the purchase price. Any refund due the original purchaser under this paragraph or Section 16 may be credited to any outstanding balance of the account of the original purchaser, and the excess, if any, shall be refunded to the original purchaser.

Arkansas and Missouri Residents

Hewlett-Packard Company located at 3000 Hanover Street, Palo Alto, CA 94304, is legally and financially obligated to provide the Support Services described in this Agreement and these obligations are backed by the full faith and credit of Hewlett-Packard Company. These obligations are not guaranteed under a service contract reimbursement insurance policy.

California Residents

If Customer purchased this Agreement for home, family or personal use, and if Customer cancels this Agreement after thirty (30) days from date of purchase by sending a written notice of cancellation plus proof of purchase to Hewlett-Packard Company, Customer will receive a refund of the unearned portion of the purchase price based on time expired, less a cancellation charge of $25 or 10% of the purchase price of the Agreement, whichever is less.

Michigan Residents

If performance of the Support Services is interrupted because of a strike or work stoppage at the company's place of business, the effective period of this Agreement shall be extended for the period of the strike or work stoppage.

Nevada Residents

Once this HP Support Service Agreement has been in effect for at least seventy days, we may cancel this Agreement before the expiration of the agreed term only for one or more of the following reasons:

- You fail to pay an amount when due.
- You are convicted of a crime that results in additional service under this Agreement.
- We discover that you committed fraud or made a material misrepresentation in obtaining this Agreement or submitting a claim under this Agreement.
- We discover that you engaged in an act or omission, or violated a condition of this Agreement, after the date of this Agreement which substantially and materially increases the services due under this Agreement.
- A material change in the nature or extent of the required service or repair which occurs after the effective date of this Agreement and which causes the required services or repairs under this Agreement to be substantially and materially increased beyond those contemplated at the time this Agreement first took effect.

If the original purchaser of this HP Support Service Agreement cancels the agreement pursuant to Section 16 (i) within thirty days of the date of purchase, but after a claim has been made, or (ii) after thirty days from date of purchase, the purchaser will receive a refund of the unearned portion of the purchase price based on time expired. If the original purchaser of this HP Support Service Agreement cancels the agreement pursuant to Section 16 within thirty days of date of purchase, with no claims having been made, the purchaser will receive a full refund of the purchase price. Any refund due the purchaser under this paragraph or Section 16 may be credited to any outstanding balance of the account of the purchaser, and the excess, if any, shall be refunded to the purchaser.

New Hampshire Residents

In the event Customer does not receive satisfaction under this Agreement, Customer may contact the New Hampshire Insurance Department, by mail at State of New Hampshire Insurance Department, 21 South Fruit Street, Suite 14, Concord NH 03301, or by telephone, via Consumer Assistance, at 800- 852-3416.

New Mexico Residents

Once this Agreement has been in effect for at least seventy days, HP may cancel this Agreement before the expiration of the agreed term only for one or more of the following reasons:

a. Customer fails to pay an amount when due,
b. Customer is convicted of a crime that results in additional service under this Agreement,
c. HP discovers that Customer committed fraud or made a material misrepresentation in obtaining this Agreement or submitting a claim under this Agreement, and
d. HP discovers that customer engaged in an act or omission, or violated a condition of this Agreement, after the date of this Agreement which

substantially and materially increases the Support Services due under this Agreement.

A material change in the nature or extent of the required Support Service or repair which occurs after the effective date of this Agreement and which causes the required Support Services or repairs under this Agreement to be substantially and materially increased beyond those contemplated at the time this Agreement first took effect.

Oregon Residents

Any civil action brought in connection with this Agreement does not have to be brought in the courts of the State of California. In the event Customer does not receive satisfaction under this Agreement, Customer may contact the Oregon Insurance Division, by mail at Department of Consumer and Business Services, Insurance Division, 350 Winter St NE, Salem OR 97301-3883, or by telephone at 888-877-4894.

Tennessee Residents

The term of this Agreement shall be extended as follows: (1) the number of days the consumer is deprived of the use of the product because the product is in repair; plus two (2) additional workdays.

Texas Residents

Any unresolved complaints concerning this Agreement may be addressed to: the Texas Department of Licensing and Regulation, P.O. Box 12157, Austin, Texas 78711-2157, telephone (512) 463-6599 or (800) 803-9202 (within Texas).

Washington Residents

Any civil action brought in connection with this Agreement does not have to be brought in the courts of the State of California.

Wyoming Residents

The laws of the State of Wyoming will govern any disputes arising out of this Agreement and any civil action may be brought in the courts of the State of Wyoming.

For HP products purchased in the United States (except in Florida), Hewlett-Packard Company located at 3000 Hanover Street, Palo Alto, CA 94304, is legally and financially obligated to provide the Support Services described in this Agreement and these obligations are backed by the full faith and credit of HP. For products purchased in Florida, these terms do not apply. Upon submission of the properly completed registration card, Florida purchasers will receive the terms and conditions applicable to their product. Toll Free number: 1-800-474-6836.

Service Agreement Type – Pick Up and Return with Accidental Damage Protection

Service Overview
HP's Hardware Support Offsite offers Return to HP Services with remote telephone support and offsite repair for eligible products at an HP designated Repair Center. The service includes repair or replacement, all parts, labor and cost of the return shipment.

Service Features
1. Remote problem diagnosis and technical telephone support
2. Repair at designated Repair Center, all materials and parts included
3. Return shipment of functional equipment back to your site
4. Flexible shipment options to the HP designated Repair Center
5. Coverage for monitor purchased on same invoice (excludes HP f2304 23" flat-panel monitor)

Service Definition
The Customer receives protection against accidental damage to the supported hardware product as part of this service.

Accidental Damage is defined as physical damage to a Product caused by or resulting from a fortuitous incident. Covered perils include non-intentional liquid spills in or on the unit, drops, falls, collisions, and electrical surge. This includes damaged or broken LCD, or broken parts.

Accidental Damage does NOT COVER theft, fire, loss, normal wear, consumables, and intentional acts of damage or exclusions as detailed in the "SERVICE LIMITATIONS" section below.

Major parts replacement as detailed in the "SERVICE LIMITATIONS" section below is limited to one each per year.

The unit may have to be repaired or replaced at an HP designated location, as not all replacement parts may be available locally.

Pick-up and Return
An HP authorized courier will pick up the failed product at Customer site within the geographic location where the service is provided and deliver it to the HP-designated repair facility. Calls must be received before 4:00pm local time, Monday through Friday excluding HP holidays, for same-day pickup, cut-off times may vary based on Customer location. All other calls will be scheduled for next-business-day pickup. The estimated time to repair the product will be provided to you by the HP phone technician on your initial call to HP.

Service Limitations
The service may be performed at an HP designated repair facility by an HP service professional or other authorized representative.

At HP's discretion, service will be provided using remote diagnosis and support or other service delivery methods, or a combination of remote diagnosis and support and service delivered at the HP designated Repair Center. Other service delivery methods may include the shipment of parts specified as customer replaceable like e.g. floppy drive or ac adapter. HP will determine the appropriate delivery method required.

Services such as the following, but not limited to, are excluded from this service:

- Recovery of the operating system, other software, and data
- Troubleshooting for interconnectivity or compatibility problems
- Services required due to failure of customer to incorporate any system fix, repair, patch, or modification provided to the customer by HP
- Services required due to failure of the customer to take avoidance action previously advised by HP
- User preventative maintenance
- Geographic coverage may vary

Accidental damage protection does not provide coverage for:
- Damage caused by failure to provide manufacturer's recommended maintenance or operating specifications
- Damage due to war or nuclear incident, terrorism, unauthorized attempts to repair equipment, use of damaged or defective media
- Data, business interruptions, obsolescence, cosmetic damage, rust, change in color, texture or finish, wear and tear, gradual deterioration
- Error in design, construction, machine programming or instructions to the machine
- Fraud, fire, theft, unexplained or mysterious disappearance, misuse, abuse or willful act
- Alteration or modification of the Product in any way

Major parts replacement is limited to one each per year. For accidental damage protection coverage, major parts include but are not limited to the screen (LCD), DVD/CD ROM, motherboard, processor, hard disk drive, and memory. The cost to repair a major part after the limit of one event per year has been reached will be charged on a time and material basis.

Customer Responsibility
The customer must register the covered hardware and HP Care Pack as set forth in the HP Responsibility Care Pack support service agreement.
The customer will be required, upon HP's request, to support HP in resolving the problem remotely by:
- Providing all information necessary for HP to deliver timely and professional remote hardware support and/or to enable HP to determine the level of support eligibility
- Starting self tests and/or other diagnostic tools and programs
- Performing other reasonable activities to help HP identify or resolve the problem

The customer is responsible to install customer replaceable parts and replacement units delivered by courier in a timely manner.

The customer must ensure that the product is appropriately packaged and prepared for pickup or the chosen method of delivery or shipment to the HP designated Repair Center. HP may require the customer to include a printout of any previously conducted self-test results together with the failed unit.

It is the customer's responsibility to:
- De-install all add-ons and or accessories from the base unit before returning to HP for Accidental Damage repair
- Maintain a backup copy of all software and data. HP recommends regular backups
- Restore software and data on the unit after the repair or replacement
- Be responsible for the user application software installation and insure all software is appropriately licensed

Service Coverage
All standard accessories included with the HP base unit part number and all HP-supplied internal components, such as HP Jetdirect cards, memory and CD-ROMs are covered.
Items such as, but not limited to, the following are NOT covered under this service:

- Consumables, including, but not limited to, batteries and Tablet PC pens. If consumables are provided by HP to establish whether repair has been effective because the Customer has none available, then HP may charge for such consumables at its then prevailing rate
- Maintenance kits and other supplies
- Non-HP devices or options
- Accessories purchased in addition to the base unit, such as docking stations and port replicators
- Any product previously repaired by an unauthorized technician or user

Coverage Window
HP Total Care telephone support is available 24 hours a day, seven (7) days a week. Repair calls must be received before 5:00 pm central standard time.

Geographic Coverage
Service is available within the continental United States, including parts of Alaska and Hawaii. Add 1 or 2 days to turnaround time for Alaska and Hawaii.
Please check with your local HP authorized representative if your location is eligible for this service.

For more information, contact our technical support center at 1-800-474-6836.

International Program License Agreement

Part 1 – General Terms

BY DOWNLOADING, INSTALLING, COPYING, ACCESSING, CLICKING ON AN ″ACCEPT″ BUTTON, OR OTHERWISE USING THE PROGRAM, LICENSEE AGREES TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCEPTING THESE TERMS ON BEHALF OF LICENSEE, YOU REPRESENT AND WARRANT THAT YOU HAVE FULL AUTHORITY TO BIND LICENSEE TO THESE TERMS. IF YOU DO NOT AGREE TO THESE TERMS,

- **DO NOT DOWNLOAD, INSTALL, COPY, ACCESS, CLICK ON AN ″ACCEPT″ BUTTON, OR USE THE PROGRAM; AND**
- **PROMPTLY RETURN THE UNUSED MEDIA, DOCUMENTATION, AND PROOF OF ENTITLEMENT TO THE PARTY FROM WHOM IT WAS OBTAINED FOR A REFUND OF THE AMOUNT PAID. IF THE PROGRAM WAS DOWNLOADED, DESTROY ALL COPIES OF THE PROGRAM.**

1. Definitions

″**Authorized Use**″ – the specified level at which Licensee is authorized to execute or run the Program. That level may be measured by number of users, millions of service units (″MSUs″), Processor Value Units (″PVUs″), or other level of use specified by IBM.

″**IBM**″ – International Business Machines Corporation or one of its subsidiaries.

″**License Information**″ **(**″**LI**″**)** – a document that provides information and any additional terms specific to a Program. The Program's LI is available at www.ibm.com/software/sla. The LI can also be found in the Program's directory, by the use of a system command, or as a booklet included with the Program.

″**Program**″ – the following, including the original and all whole or partial copies: 1) machine-readable instructions and data, 2) components, files, and modules, 3) audio-visual content (such as images, text, recordings, or pictures), and 4) related licensed materials (such as keys and documentation).

″**Proof of Entitlement**″ **(**″**PoE**″**)** – evidence of Licensee's Authorized Use. The PoE is also evidence of Licensee's eligibility for warranty, future update prices, if any, and potential special or promotional opportunities. If IBM does not provide Licensee with a PoE, then IBM may accept as the PoE the original paid sales receipt or other sales record from the party (either IBM or its reseller) from whom Licensee obtained the Program, provided that it specifies the Program name and Authorized Use obtained.

″**Warranty Period**″ – one year, starting on the date the original Licensee is granted the license.

2. Agreement Structure

This Agreement includes **Part 1 – General Terms, Part 2 – Country-unique Terms** (if any), the LI, and the PoE and is the complete agreement between Licensee and IBM regarding the use of the Program. It replaces any prior oral or written communications between Licensee and IBM concerning Licensee's use of the Program. The terms of Part 2 may replace or modify those of Part 1. To the extent of any conflict, the LI prevails over both Parts.

3. License Grant

The Program is owned by IBM or an IBM supplier, and is copyrighted and licensed, not sold.

IBM grants Licensee a nonexclusive license to 1) use the Program up to the Authorized Use specified in the PoE, 2) make and install copies to support such Authorized Use, and 3) make a backup copy, all provided that

a. Licensee has lawfully obtained the Program and complies with the terms of this Agreement;

b. the backup copy does not execute unless the backed-up Program cannot execute;
c. Licensee reproduces all copyright notices and other legends of ownership on each copy, or partial copy, of the Program;
d. Licensee ensures that anyone who uses the Program (accessed either locally or remotely) 1) does so only on Licensee's behalf and 2) complies with the terms of this Agreement;
e. Licensee does not 1) use, copy, modify, or distribute the Program except as expressly permitted in this Agreement; 2) reverse assemble, reverse compile, otherwise translate, or reverse engineer the Program, except as expressly permitted by law without the possibility of contractual waiver; 3) use any of the Program's components, files, modules, audio-visual content, or related licensed materials separately from that Program; or 4) sublicense, rent, or lease the Program; and
f. if Licensee obtains this Program as a Supporting Program, Licensee uses this Program only to support the Principal Program and subject to any limitations in the license to the Principal Program, or, if Licensee obtains this Program as a Principal Program, Licensee uses all Supporting Programs only to support this Program, and subject to any limitations in this Agreement. For purposes of this Item "f," a "Supporting Program" is a Program that is part of another IBM Program ("Principal Program") and identified as a Supporting Program in the Principal Program's LI. (To obtain a separate license to a Supporting Program without these restrictions, Licensee should contact the party from whom Licensee obtained the Supporting Program.)

This license applies to each copy of the Program that Licensee makes.

3.1 Trade-ups, Updates, Fixes, and Patches

3.1.1 Trade-ups

If the Program is replaced by a trade-up Program, the replaced Program's license is promptly terminated.

3.1.2 Updates, Fixes, and Patches

When Licensee receives an update, fix, or patch to a Program, Licensee accepts any additional or different terms that are applicable to such update, fix, or patch that are specified in its LI. If no additional or different terms are provided, then the update, fix, or patch is subject solely to this Agreement. If the Program is replaced by an update, Licensee agrees to promptly discontinue use of the replaced Program.

3.2 Fixed Term Licenses

If IBM licenses the Program for a fixed term, Licensee's license is terminated at the end of the fixed term, unless Licensee and IBM agree to renew it.

3.3 Term and Termination

This Agreement is effective until terminated.

IBM may terminate Licensee's license if Licensee fails to comply with the terms of this Agreement.

If the license is terminated for any reason by either party, Licensee agrees to promptly discontinue use of and destroy all of Licensee's copies of the Program. Any terms of this Agreement that by their nature extend beyond termination of this Agreement remain in effect until fulfilled, and apply to both parties' respective successors and assignees.

4. Charges

Charges are based on Authorized Use obtained, which is specified in the PoE. IBM does not give credits or refunds for charges already due or paid, except as specified elsewhere in this Agreement.

If Licensee wishes to increase its Authorized Use, Licensee must notify IBM or an authorized IBM reseller in advance and pay any applicable charges.

5. Taxes

If any authority imposes on the Program a duty, tax, levy, or fee, excluding those based on IBM's net income, then Licensee agrees to pay that amount, as specified in an invoice, or supply exemption documentation. Licensee is responsible for any personal property taxes for the Program from the date that Licensee obtains it. If any authority imposes a customs duty, tax, levy, or fee for the import into or the export, transfer, access, or use of the Program outside the country in which the original Licensee was granted the license, then Licensee agrees that it is responsible for, and will pay, any amount imposed.

6. Money-back Guarantee

If Licensee is dissatisfied with the Program for any reason and is the original Licensee, Licensee may terminate the license and obtain a refund of the amount Licensee paid for the Program, provided that Licensee returns the Program and PoE to the party from whom Licensee obtained it within 30 days of the date the PoE was issued to Licensee. If the license is for a fixed term that is subject to renewal, then Licensee may obtain a refund only if the Program and its PoE are returned within the first 30 days of the initial term. If Licensee downloaded the Program, Licensee should contact the party from whom Licensee obtained it for instructions on how to obtain the refund.

7. Program Transfer

Licensee may transfer the Program and all of Licensee's license rights and obligations to another party only if that party agrees to the terms of this Agreement. If the license is terminated for any reason by either party, Licensee is prohibited from transferring the Program to another party. Licensee may not transfer a portion of 1) the Program or 2) the Program's Authorized Use. When Licensee transfers the Program, Licensee must also transfer a hard copy of this Agreement, including the LI and PoE. Immediately after the transfer, Licensee's license terminates.

8. Warranty and Exclusions

8.1 Limited Warranty

IBM warrants that the Program, when used in its specified operating environment, will conform to its specifications. The Program's specifications, and specified operating environment information, can be found in documentation accompanying the Program (such as a read-me file) or other information published by IBM (such as an announcement letter). Licensee agrees that such documentation and other Program content may be supplied only in the English language, unless otherwise required by local law without the possibility of contractual waiver or limitation.

The warranty applies only to the unmodified portion of the Program. IBM does not warrant uninterrupted or error-free operation of the Program, or that IBM will correct all Program defects. Licensee is responsible for the results obtained from the use of the Program.

During the Warranty Period, IBM provides Licensee with access to IBM databases containing information on known Program defects, defect corrections, restrictions, and bypasses at no additional charge. Consult the IBM Software Support Handbook for further information at www.ibm.com/software/support.

If the Program does not function as warranted during the Warranty Period and the problem cannot be resolved with information available in the IBM databases, Licensee may return the Program and its PoE to the party (either IBM or its reseller) from whom Licensee obtained it and receive a refund of the amount Licensee paid. After returning the Program, Licensee's license terminates. If Licensee downloaded the Program, Licensee should contact the party from whom Licensee obtained it for instructions on how to obtain the refund.

8.2 Exclusions

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NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO LICENSEE. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO LICENSEE.

THESE WARRANTIES GIVE LICENSEE SPECIFIC LEGAL RIGHTS. LICENSEE MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE OR JURISDICTION TO JURISDICTION.

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9. Licensee Data and Databases

To assist Licensee in isolating the cause of a problem with the Program, IBM may request that Licensee 1) allow IBM to remotely access Licensee's system or 2) send Licensee information or system data to IBM. However, IBM is not obligated to provide such assistance unless IBM and Licensee enter a separate written agreement under which IBM agrees to provide to Licensee that type of support, which is beyond IBM's warranty obligations in this Agreement. In any event, IBM uses information about errors and problems to improve its products and services, and assist with its provision of related support offerings. For these purposes, IBM may use IBM entities and subcontractors (including in one or more countries other than the one in which Licensee is located), and Licensee authorizes IBM to do so.

Licensee remains responsible for 1) any data and the content of any database Licensee makes available to IBM, 2) the selection and implementation of procedures and controls regarding access, security, encryption, use, and transmission of data (including any personally-identifiable data), and 3) backup and recovery of any database and any stored data. Licensee will not send or provide IBM access to any personally-identifiable information, whether in data or any other form, and will be responsible for reasonable costs and other amounts that IBM may incur relating to any such information mistakenly provided to IBM or the loss or disclosure of such information by IBM, including those arising out of any third party claims.

10. Limitation of Liability

The limitations and exclusions in this Section 10 (Limitation of Liability) apply to the full extent they are not prohibited by applicable law without the possibility of contractual waiver.

10.1 Items for Which IBM May Be Liable

Circumstances may arise where, because of a default on IBM's part or other liability, Licensee is entitled to recover damages from IBM. Regardless of the basis on which Licensee is entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM's entire liability for all claims in the aggregate arising from or related to each Program or otherwise arising under this Agreement will not exceed the amount of any 1) damages for bodily injury (including death) and damage to real property and tangible personal property and 2) other actual direct damages up to the charges (if the Program is subject to fixed term charges, up to twelve months' charges) Licensee paid for the Program that is the subject of the claim.

This limit also applies to any of IBM's Program developers and suppliers. It is the maximum for which IBM and its Program developers and suppliers are collectively responsible.

10.2 Items for Which IBM Is Not Liable

UNDER NO CIRCUMSTANCES IS IBM, ITS PROGRAM DEVELOPERS OR SUPPLIERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY:

a. **LOSS OF, OR DAMAGE TO, DATA;**
b. **SPECIAL, INCIDENTAL, EXEMPLARY, OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; OR**
c. **LOST PROFITS, BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS.**

11. Compliance Verification

For purposes of this Section 11 (Compliance Verification), "IPLA Program Terms" means 1) this Agreement and applicable amendments and transaction documents provided by IBM, and 2) IBM software policies that may be found at the IBM Software Policy website (www.ibm.com/softwarepolicies), including but not limited to those policies concerning backup, sub-capacity pricing, and migration.

The rights and obligations set forth in this Section 11 remain in effect during the period the Program is licensed to Licensee, and for two years thereafter.

11.1 Verification Process

Licensee agrees to create, retain, and provide to IBM and its auditors accurate written records, system tool outputs, and other system information sufficient to provide auditable verification that Licensee's use of all Programs is in compliance with the IPLA Program Terms, including, without limitation, all of IBM's applicable licensing and pricing qualification terms. Licensee is responsible for 1) ensuring that it does not exceed its Authorized Use, and 2) remaining in compliance with IPLA Program Terms.

Upon reasonable notice, IBM may verify Licensee's compliance with IPLA Program Terms at all sites and for all environments in which Licensee uses (for any purpose) Programs subject to IPLA Program Terms. Such verification will be conducted in a manner that minimizes disruption to Licensee's business, and may be conducted on Licensee's premises, during normal business hours. IBM may use an independent auditor to assist with such verification, provided IBM has a written confidentiality agreement in place with such auditor.

11.2 Resolution

IBM will notify Licensee in writing if any such verification indicates that Licensee has used any Program in excess of its Authorized Use or is otherwise not in compliance with the IPLA Program Terms. Licensee agrees to promptly pay directly to IBM the charges that IBM specifies in an invoice for 1) any such excess use, 2) support for such excess use for the lesser of the duration of such excess use or two years, and 3) any additional charges and other liabilities determined as a result of such verification.

12. Third Party Notices

The Program may include third party code that IBM, not the third party, licenses to Licensee under this Agreement. Notices, if any, for the third party code ("Third Party Notices") are included for Licensee's information only. These notices can be found in the Program's NOTICES file(s). Information on how to obtain source code for certain third party code can be found in the Third Party Notices. If in the Third Party Notices IBM identifies third party code as "Modifiable Third Party Code," IBM authorizes Licensee to 1) modify the Modifiable Third Party Code and 2) reverse engineer the Program modules that directly interface with the Modifiable Third Party Code provided that it is only for the purpose of debugging Licensee's modifications to such third party code. IBM's service and support obligations, if any, apply only to the unmodified Program.

13. General

a. Nothing in this Agreement affects any statutory rights of consumers that cannot be waived or limited by contract.
b. For Programs IBM provides to Licensee in tangible form, IBM fulfills its shipping and delivery obligations upon the delivery of such Programs to the IBM-designated carrier, unless otherwise agreed to in writing by Licensee and IBM.
c. If any provision of this Agreement is held to be invalid or unenforceable, the remaining provisions of this Agreement remain in full force and effect.
d. Licensee agrees to comply with all applicable export and import laws and regulations, including U.S. embargo and sanctions regulations and prohibitions on export for certain end uses or to certain users.
e. Licensee authorizes International Business Machines Corporation and its subsidiaries (and their successors and assigns, contractors and IBM Business Partners) to store and use Licensee's business contact information wherever they do business, in connection with IBM products and services, or in furtherance of IBM's business relationship with Licensee.
f. Each party will allow the other reasonable opportunity to comply before it claims that the other has not met its obligations under this Agreement. The parties will attempt in good faith to resolve all disputes, disagreements, or claims between the parties relating to this Agreement.
g. Unless otherwise required by applicable law without the possibility of contractual waiver or limitation: 1) neither party will bring a legal action, regardless of form, for any claim arising out of or related to this Agreement more than two years after the cause of action arose; and 2) upon the expiration of such time limit, any such claim and all respective rights related to the claim lapse.
h. Neither Licensee nor IBM is responsible for failure to fulfill any obligations due to causes beyond its control.
i. No right or cause of action for any third party is created by this Agreement, nor is IBM responsible for any third party claims against Licensee, except as permitted in Subsection 10.1 (Items for Which IBM May Be Liable) above for bodily injury (including death) or damage to real or tangible personal property for which IBM is legally liable to that third party.
j. In entering into this Agreement, neither party is relying on any representation not specified in this Agreement, including but not limited to any representation concerning: 1) the performance or function of the Program, other than as expressly warranted in Section 8 (Warranty and Exclusions) above; 2) the experiences or recommendations of other parties; or 3) any results or savings that Licensee may achieve.
k. IBM has signed agreements with certain organizations (called "IBM Business Partners") to promote, market, and support certain Programs. IBM Business Partners remain independent and separate from IBM. IBM is not responsible for the actions or statements of IBM Business Partners or obligations they have to Licensee.
l. The license and intellectual property indemnification terms of Licensee's other agreements with IBM (such as the IBM Customer Agreement) do not apply to Program licenses granted under this Agreement.

14. Geographic Scope and Governing Law

14.1 Governing Law

Both parties agree to the application of the laws of the country in which Licensee obtained the Program license to govern, interpret, and enforce all of Licensee's and IBM's respective rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

The United Nations Convention on Contracts for the International Sale of Goods does not apply.

14.2 Jurisdiction

All rights, duties, and obligations are subject to the courts of the country in which Licensee obtained the Program license.

Part 2 – Country-unique Terms

For licenses granted in the countries specified below, the following terms replace or modify the referenced terms in Part 1. All terms in Part 1 that are not changed by these amendments remain unchanged and in effect. This Part 2 is organized as follows:

- Multiple country amendments to Part 1, Section 14 (Governing Law and Jurisdiction);
- Americas country amendments to other Agreement terms;
- Asia Pacific country amendments to other Agreement terms; and
- Europe, Middle East, and Africa country amendments to other Agreement terms.

Multiple country amendments to Part 1, Section 14 (Governing Law and Jurisdiction)

14.1 Governing Law

The phrase "the laws of the country in which Licensee obtained the Program license" in the first paragraph of 14.1 Governing Law is replaced by the following phrases in the countries below:

AMERICAS

(1) In **Canada**: the laws in the Province of Ontario;

(2) in **Mexico**: the federal laws of the Republic of Mexico;

(3) in **the United States, Anguilla, Antigua/Barbuda, Aruba, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Maarten,** and **Saint Vincent and the Grenadines**: the laws of the State of New York, United States;

(4) in **Venezuela**: the laws of the Bolivarian Republic of Venezuela;

ASIA PACIFIC

(5) in **Cambodia** and **Laos**: the laws of the State of New York, United States;

(6) in **Australia**: the laws of the State or Territory in which the transaction is performed;

(7) in **Hong Kong SAR** and **Macau SAR**: the laws of Hong Kong Special Administrative Region (”SAR”);

(8) in **Taiwan**: the laws of Taiwan;

EUROPE, MIDDLE EAST, AND AFRICA

(9) in **Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Tajikistan, Turkmenistan, Ukraine,** and **Uzbekistan**: the laws of Austria;

(10) in **Algeria, Andorra, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu,** and **Wallis and Futuna**: the laws of France;

(11) in **Estonia, Latvia,** and **Lithuania**: the laws of Finland;

(12) in **Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome and Principe, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, the United Kingdom, West Bank/Gaza, Yemen, Zambia,** and **Zimbabwe**: the laws of England; and

(13) in **South Africa, Namibia, Lesotho,** and **Swaziland**: the laws of the Republic of South Africa.

14.2 Jurisdiction

The following paragraph pertains to jurisdiction and replaces Subsection 14.2 (Jurisdiction) as it applies for those countries identified below:

All rights, duties, and obligations are subject to the courts of the country in which Licensee obtained the Program license except that in the countries identified below all disputes arising out of or related to this Agreement, including summary proceedings, will be brought before and subject to the exclusive jurisdiction of the following courts of competent jurisdiction:

AMERICAS

(1) In **Argentina**: the Ordinary Commercial Court of the city of Buenos Aires;

(2) in **Brazil**: the court of Rio de Janeiro, RJ;

(3) in **Chile**: the Civil Courts of Justice of Santiago;

(4) in **Ecuador**: the civil judges of Quito for executory or summary proceedings (as applicable);

(5) in **Mexico**: the courts located in Mexico City, Federal District;

(6) in **Peru**: the judges and tribunals of the judicial district of Lima, Cercado;

(7) in **Uruguay**: the courts of the city of Montevideo;

(8) in **Venezuela**: the courts of the metropolitan area of the city of Caracas;

EUROPE, MIDDLE EAST, AND AFRICA

(9) in **Austria**: the court of law in Vienna, Austria (Inner-City);

(10) in **Algeria, Andorra, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Republic, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, French Guiana, French Polynesia, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Madagascar, Mali, Mauritania, Mauritius, Mayotte, Monaco, Morocco, New Caledonia, Niger, Reunion, Senegal, Seychelles, Togo, Tunisia, Vanuatu,** and **Wallis and Futuna**: the Commercial Court of Paris;

(11) in **Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome and Principe, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, the United Kingdom, West Bank/Gaza, Yemen, Zambia,** and **Zimbabwe**: the English courts;

(12) in **South Africa, Namibia, Lesotho,** and **Swaziland**: the High Court in Johannesburg;

(13) in **Greece**: the competent court of Athens;

(14) in **Israel**: the courts of Tel Aviv-Jaffa;

(15) in **Italy**: the courts of Milan;

(16) in **Portugal**: the courts of Lisbon;

(17) in **Spain**: the courts of Madrid; and

(18) in **Turkey**: the Istanbul Central Courts and Execution Directorates of Istanbul, the Republic of Turkey.

14.3 Arbitration

The following paragraph is added as a new Subsection 14.3 (Arbitration) as it applies for those countries identified below. The provisions of this Subsection 14.3 prevail over those of Subsection 14.2 (Jurisdiction) to the extent permitted by the applicable governing law and rules of procedure:

ASIA PACIFIC

(1) In **Cambodia, India, Laos, Philippines,** and **Vietnam**:

Disputes arising out of or in connection with this Agreement will be finally settled by arbitration which will be held in Singapore in accordance with the Arbitration Rules of Singapore International Arbitration Center (″SIAC Rules″) then in effect. The arbitration award will be final and binding for the parties without appeal and will be in writing and set forth the findings of fact and the conclusions of law.

The number of arbitrators will be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties will appoint a third arbitrator who will act as chairman of the proceedings. Vacancies in the post of chairman will be filled by the president of the SIAC. Other vacancies will be filled by the respective nominating party. Proceedings will continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator will be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

All proceedings will be conducted, including all documents presented in such proceedings, in the English language. The English language version of this Agreement prevails over any other language version.

(2) In **the People's Republic of China**:

In case no settlement can be reached, the disputes will be submitted to China International Economic and Trade Arbitration Commission for arbitration according to the then effective rules of the said Arbitration Commission. The arbitration will take place in Beijing and be conducted in Chinese. The arbitration award will be final and binding on both parties. During the course of arbitration, this agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.

(3) In **Indonesia**:

Each party will allow the other reasonable opportunity to comply before it claims that the other has not met its obligations under this Agreement. The parties will attempt in good faith to resolve all disputes, disagreements, or claims between the parties relating to this Agreement. Unless otherwise required by applicable law without the possibility of contractual waiver or limitation, i) neither party will bring a legal action, regardless of form, arising out of or related to this Agreement or any transaction under it more than two years after the cause of action arose; and ii) after such time limit, any legal action arising out of this Agreement or any transaction under it and all respective rights related to any such action lapse.

Disputes arising out of or in connection with this Agreement shall be finally settled by arbitration that shall be held in Jakarta, Indonesia in accordance with the rules of Board of the Indonesian National Board of Arbitration (Badan Arbitrase Nasional Indonesia or ″BANI″) then in effect. The arbitration award shall be final and binding for the parties without appeal and shall be in writing and set forth the findings of fact and the conclusions of law.

The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties shall appoint a third

arbitrator who shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the chairman of the BANI. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English and/or Indonesian language.

EUROPE, MIDDLE EAST, AND AFRICA

(4) In **Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Tajikistan, Turkmenistan, Ukraine,** and **Uzbekistan**:

All disputes arising out of this Agreement or related to its violation, termination or nullity will be finally settled under the Rules of Arbitration and Conciliation of the International Arbitral Center of the Federal Economic Chamber in Vienna (Vienna Rules) by three arbitrators appointed in accordance with these rules. The arbitration will be held in Vienna, Austria, and the official language of the proceedings will be English. The decision of the arbitrators will be final and binding upon both parties. Therefore, pursuant to paragraph 598 (2) of the Austrian Code of Civil Procedure, the parties expressly waive the application of paragraph 595 (1) figure 7 of the Code. IBM may, however, institute proceedings in a competent court in the country of installation.

(5) In **Estonia, Latvia,** and **Lithuania**:

All disputes arising in connection with this Agreement will be finally settled in arbitration that will be held in Helsinki, Finland in accordance with the arbitration laws of Finland then in effect. Each party will appoint one arbitrator. The arbitrators will then jointly appoint the chairman. If arbitrators cannot agree on the chairman, then the Central Chamber of Commerce in Helsinki will appoint the chairman.

AMERICAS COUNTRY AMENDMENTS

CANADA

10.1 Items for Which IBM May be Liable

The following replaces Item 1 in the first paragraph of this Subsection 10.1 (Items for Which IBM May be Liable):

1) damages for bodily injury (including death) and physical harm to real property and tangible personal property caused by IBM's negligence; and

13. General

The following replaces Item 13.d:

d. Licensee agrees to comply with all applicable export and import laws and regulations, including those of that apply to goods of United States origin and that prohibit or limit export for certain uses or to certain users.

The following replaces Item 13.i:

i. No right or cause of action for any third party is created by this Agreement or any transaction under it, nor is IBM responsible for any third party claims against Licensee except as permitted by the Limitation of Liability section above for bodily injury

(including death) or physical harm to real or tangible personal property caused by IBM's negligence for which IBM is legally liable to that third party.

The following is added as Item 13.m:

m. For purposes of this Item 13.m, "Personal Data" refers to information relating to an identified or identifiable individual made available by one of the parties, its personnel or any other individual to the other in connection with this Agreement. The following provisions apply in the event that one party makes Personal Data available to the other:

(1) General

(a) Each party is responsible for complying with any obligations applying to it under applicable Canadian data privacy laws and regulations ("Laws").

(b) Neither party will request Personal Data beyond what is necessary to fulfill the purpose(s) for which it is requested. The purpose(s) for requesting Personal Data must be reasonable. Each party will agree in advance as to the type of Personal Data that is required to be made available.

(2) Security Safeguards

(a) Each party acknowledges that it is solely responsible for determining and communicating to the other the appropriate technological, physical and organizational security measures required to protect Personal Data.

(b) Each party will ensure that Personal Data is protected in accordance with the security safeguards communicated and agreed to by the other.

(c) Each party will ensure that any third party to whom Personal Data is transferred is bound by the applicable terms of this section.

(d) Additional or different services required to comply with the Laws will be deemed a request for new services.

(3) Use

Each party agrees that Personal Data will only be used, accessed, managed, transferred, disclosed to third parties or otherwise processed to fulfill the purpose(s) for which it was made available.

(4) Access Requests

(a) Each party agrees to reasonably cooperate with the other in connection with requests to access or amend Personal Data.

(b) Each party agrees to reimburse the other for any reasonable charges incurred in providing each other assistance.

(c) Each party agrees to amend Personal Data only upon receiving instructions to do so from the other party or its personnel.

(5) Retention

Each party will promptly return to the other or destroy all Personal Data that is no longer necessary to fulfill the purpose(s) for which it was made available, unless otherwise instructed by the other or its personnel or required by law.

(6) Public Bodies Who Are Subject to Public Sector Privacy Legislation

For Licensees who are public bodies subject to public sector privacy legislation, this Item 13.m applies only to Personal Data made available to Licensee in connection with this Agreement, and the obligations in this section apply only to Licensee,

except that: 1) section (2)(a) applies only to IBM; 2) sections (1)(a) and (4)(a) apply to both parties; and 3) section (4)(b) and the last sentence in (1)(b) do not apply.

PERU

10. Limitation of Liability

The following is added to the end of this Section 10 (Limitation of Liability):

Except as expressly required by law without the possibility of contractual waiver, Licensee and IBM intend that the limitation of liability in this Limitation of Liability section applies to damages caused by all types of claims and causes of action. If any limitation on or exclusion from liability in this section is held by a court of competent jurisdiction to be unenforceable with respect to a particular claim or cause of action, the parties intend that it nonetheless apply to the maximum extent permitted by applicable law to all other claims and causes of action.

10.1 Items for Which IBM May be Liable

The following is added at the end of this Subsection 10.1:

In accordance with Article 1328 of the Peruvian Civil Code, the limitations and exclusions specified in this section will not apply to damages caused by IBM's willful misconduct ("dolo") or gross negligence ("culpa inexcusable").

UNITED STATES OF AMERICA

5. Taxes

The following is added at the end of this Section 5 (Taxes)

For Programs delivered electronically in the United States for which Licensee claims a state sales and use tax exemption, Licensee agrees not to receive any tangible personal property (e.g., media and publications) associated with the electronic program.

Licensee agrees to be responsible for any sales and use tax liabilities that may arise as a result of Licensee's subsequent redistribution of Programs after delivery by IBM.

13. General

The following is added to Section 13 as Item 13.m:

U.S. Government Users Restricted Rights – Use, duplication or disclosure is restricted by the GSA IT Schedule 70 Contract with the IBM Corporation.

The following is added to Item 13.f:

Each party waives any right to a jury trial in any proceeding arising out of or related to this Agreement.

ASIA PACIFIC COUNTRY AMENDMENTS

AUSTRALIA

5. Taxes

The following sentences replace the first two sentences of Section 5 (Taxes):

If any government or authority imposes a duty, tax (other than income tax), levy, or fee, on this Agreement or on the Program itself, that is not otherwise provided for in the amount payable, Licensee agrees to pay it when IBM invoices Licensee. If the rate of GST changes, IBM may adjust the charge or other amount payable to take into account that change from the date the change becomes effective.

8.1 Limited Warranty

The following is added to Subsection 8.1 (Limited Warranty):

The warranties specified this Section are in addition to any rights Licensee may have under the Competition and Consumer Act 2010 or other legislation and are only limited to the extent permitted by the applicable legislation.

10.1 Items for Which IBM May be Liable

The following is added to Subsection 10.1 (Items for Which IBM May be Liable):

Where IBM is in breach of a condition or warranty implied by the Competition and Consumer Act 2010, IBM's liability is limited to the repair or replacement of the goods, or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily obtained for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

HONG KONG SAR, MACAU SAR, AND **TAIWAN**

As applies to licenses obtained in Taiwan and the special administrative regions, phrases throughout this Agreement containing the word "country" (for example, "the country in which the original Licensee was granted the license" and "the country in which Licensee obtained the Program license") are replaced with the following:

(1) In **Hong Kong SAR**: "Hong Kong SAR"

(2) In **Macau SAR**: "Macau SAR" except in the Governing Law clause (Section 14.1)

(3) In **Taiwan**: "Taiwan."

INDIA

10.1 Items for Which IBM May be Liable

The following replaces the terms of Items 1 and 2 of the first paragraph:

1) liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence; and 2) as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Agreement, IBM's liability will be limited to the charge paid by Licensee for the individual Program that is the subject of the claim.

13. General

The following replaces the terms of Item 13.g:

If no suit or other legal action is brought, within three years after the cause of action arose, in respect of any claim that either party may have against the other, the rights of the concerned party in respect of such claim will be forfeited and the other party will stand released from its obligations in respect of such claim.

INDONESIA

3.3 Term and Termination

The following is added to the last paragraph:

Both parties waive the provision of article 1266 of the Indonesian Civil Code, to the extent the article provision requires such court decree for the termination of an agreement creating mutual obligations.

JAPAN

13. General

The following is inserted after Item 13.f:

Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

MALAYSIA

10.2 Items for Which IBM Is not Liable

The word "SPECIAL" in Item 10.2b is deleted.

NEW ZEALAND

8.1 Limited Warranty

The following is added:

The warranties specified in this Section are in addition to any rights Licensee may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if Licensee requires the goods for the purposes of a business as defined in that Act.

10. Limitation of Liability

The following is added:

Where Programs are not obtained for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE'S REPUBLIC OF CHINA

4. Charges

The following is added:

All banking charges incurred in the People's Republic of China will be borne by Licensee and those incurred outside the People's Republic of China will be borne by IBM.

PHILIPPINES

10.2 Items for Which IBM Is not Liable

The following replaces the terms of Item 10.2b:

b. special (including nominal and exemplary damages), moral, incidental, or indirect damages or for any economic consequential damages; or

SINGAPORE

10.2 Items for Which IBM Is not Liable

The words "SPECIAL" and "ECONOMIC" are deleted from Item 10.2b.

13. General

The following replaces the terms of Item 13.i:

Subject to the rights provided to IBM's suppliers and Program developers as provided in Section 10 above (Limitation of Liability), a person who is not a party to this Agreement will have no right under the Contracts (Right of Third Parties) Act to enforce any of its terms.

TAIWAN

8.1 Limited Warranty

The last paragraph is deleted.

10.1 Items for Which IBM May Be Liable

The following sentences are deleted:

This limit also applies to any of IBM's subcontractors and Program developers. It is the maximum for which IBM and its subcontractors and Program developers are collectively responsible.

EUROPE, MIDDLE EAST, AFRICA (EMEA) COUNTRY AMENDMENTS

EUROPEAN UNION MEMBER STATES

8. Warranty and Exclusions

The following is added to Section 8 (Warranty and Exclusion):

In the European Union ("EU"), consumers have legal rights under applicable national legislation governing the sale of consumer goods. Such rights are not affected by the provisions set out in this Section 8 (Warranty and Exclusions). The territorial scope of the Limited Warranty is worldwide.

EU MEMBER STATES AND THE COUNTRIES IDENTIFIED BELOW

Iceland, Liechtenstein, Norway, Switzerland, Turkey, and any other European country that has enacted local data privacy or protection legislation similar to the EU model.

13. General

The following replaces Item 13.e:

(1) **Definitions** – For the purposes of this Item 13.e, the following additional definitions apply:

(a) **Business Contact Information** – business-related contact information disclosed by Licensee to IBM, including names, job titles, business addresses, telephone numbers and email addresses of Licensee's employees and contractors. For Austria, Italy and Switzerland, Business Contact Information also includes information about Licensee and its contractors as legal entities (for example, Licensee's revenue data and other transactional information)

(b) **Business Contact Personnel** – Licensee employees and contractors to whom the Business Contact Information relates.

(c) **Data Protection Authority** – the authority established by the Data Protection and Electronic Communications Legislation in the applicable country or, for non-EU countries, the authority responsible for supervising the protection of personal data in that country, or (for any of the foregoing) any duly appointed successor entity thereto.

(d) **Data Protection & Electronic Communications Legislation** – (i) the applicable local legislation and regulations in force implementing the requirements of EU Directive 95/46/EC (on the protection of individuals with regard to the processing of personal data and on the free movement of such data) and of EU Directive 2002/58/EC (concerning the processing of personal data and the protection of privacy in the electronic communications sector); or (ii) for non-EU countries, the legislation and/or regulations passed in the applicable country relating to the protection of

personal data and the regulation of electronic communications involving personal data, including (for any of the foregoing) any statutory replacement or modification thereof.

(e) **IBM Group** – International Business Machines Corporation of Armonk, New York, USA, its subsidiaries, and their respective Business Partners and subcontractors.

(2) Licensee authorizes IBM:

(a) to process and use Business Contact Information within IBM Group in support of Licensee including the provision of support services, and for the purpose of furthering the business relationship between Licensee and IBM Group, including, without limitation, contacting Business Contact Personnel (by email or otherwise) and marketing IBM Group products and services (the "Specified Purpose"); and

(b) to disclose Business Contact Information to other members of IBM Group in pursuit of the Specified Purpose only.

(3) IBM agrees that all Business Contact Information will be processed in accordance with the Data Protection & Electronic Communications Legislation and will be used only for the Specified Purpose.

(4) To the extent required by the Data Protection & Electronic Communications Legislation, Licensee represents that (a) it has obtained (or will obtain) any consents from (and has issued (or will issue) any notices to) the Business Contact Personnel as are necessary in order to enable IBM Group to process and use the Business Contact Information for the Specified Purpose.

(5) Licensee authorizes IBM to transfer Business Contact Information outside the European Economic Area, provided that the transfer is made on contractual terms approved by the Data Protection Authority or the transfer is otherwise permitted under the Data Protection & Electronic Communications Legislation.

AUSTRIA

8.2 Exclusions

The following is deleted from the first paragraph:

MERCHANTABILITY, SATISFACTORY QUALITY

10. Limitation of Liability

The following is added:

The following limitations and exclusions of IBM's liability do not apply for damages caused by gross negligence or willful misconduct.

10.1 Items for Which IBM May Be Liable

The following replaces the first sentence in the first paragraph:

Circumstances may arise where, because of a default by IBM in the performance of its obligations under this Agreement or other liability, Licensee is entitled to recover damages from IBM.

In the second sentence of the first paragraph, delete entirely the parenthetical phrase:

"(including fundamental breach, negligence, misrepresentation, or other contract or tort claim)".

10.2 Items for Which IBM Is Not Liable

The following replaces Item 10.2b:

b. indirect damages or consequential damages; or

BELGIUM, FRANCE, ITALY, AND LUXEMBOURG

10. Limitation of Liability

The following replaces the terms of Section 10 (Limitation of Liability) in its entirety:

Except as otherwise provided by mandatory law:

10.1 Items for Which IBM May Be Liable

IBM's entire liability for all claims in the aggregate for any damages and losses that may arise as a consequence of the fulfillment of its obligations under or in connection with this Agreement or due to any other cause related to this Agreement is limited to the compensation of only those damages and losses proved and actually arising as an immediate and direct consequence of the non-fulfillment of such obligations (if IBM is at fault) or of such cause, for a maximum amount equal to the charges (if the Program is subject to fixed term charges, up to twelve months' charges) Licensee paid for the Program that has caused the damages.

The above limitation will not apply to damages for bodily injuries (including death) and damages to real property and tangible personal property for which IBM is legally liable.

10.2 Items for Which IBM Is Not Liable

UNDER NO CIRCUMSTANCES IS IBM OR ANY OF ITS PROGRAM DEVELOPERS LIABLE FOR ANY OF THE FOLLOWING, EVEN IF INFORMED OF THEIR POSSIBILITY: 1) LOSS OF, OR DAMAGE TO, DATA; 2) INCIDENTAL, EXEMPLARY OR INDIRECT DAMAGES, OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES; AND / OR 3) LOST PROFITS, BUSINESS, REVENUE, GOODWILL, OR ANTICIPATED SAVINGS, EVEN IF THEY ARISE AS AN IMMEDIATE CONSEQUENCE OF THE EVENT THAT GENERATED THE DAMAGES.

10.3 Suppliers and Program Developers

The limitation and exclusion of liability herein agreed applies not only to the activities performed by IBM but also to the activities performed by its suppliers and Program developers, and represents the maximum amount for which IBM as well as its suppliers and Program developers are collectively responsible.

GERMANY

8.1 Limited Warranty

The following is inserted at the beginning of Section 8.1:

The Warranty Period is twelve months from the date of delivery of the Program to the original Licensee.

8.2 Exclusions

Section 8.2 is deleted in its entirety and replaced with the following:

Section 8.1 defines IBM's entire warranty obligations to Licensee except as otherwise required by applicable statutory law.

10. Limitation of Liability

The following replaces the Limitation of Liability section in its entirety:

a. IBM will be liable without limit for 1) loss or damage caused by a breach of an express guarantee; 2) damages or losses resulting in bodily injury (including death); and 3) damages caused intentionally or by gross negligence.

b. In the event of loss, damage and frustrated expenditures caused by slight negligence or in breach of essential contractual obligations, IBM will be liable, regardless of the basis on which Licensee is entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), per claim only up to the greater of 500,000 euro or the charges (if the Program is subject to fixed term charges, up to 12 months' charges) Licensee paid for the Program that caused the loss or damage. A number of defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one default.

c. In the event of loss, damage and frustrated expenditures caused by slight negligence, IBM will not be liable for indirect or consequential damages, even if IBM was informed about the possibility of such loss or damage.

d. In case of delay on IBM's part: 1) IBM will pay to Licensee an amount not exceeding the loss or damage caused by IBM's delay and 2) IBM will be liable only in respect of the resulting damages that Licensee suffers, subject to the provisions of Items a and b above.

13. General

The following replaces the provisions of 13.g:

Any claims resulting from this Agreement are subject to a limitation period of three years, except as stated in Section 8.1 (Limited Warranty) of this Agreement.

The following replaces the provisions of 13.i:

No right or cause of action for any third party is created by this Agreement, nor is IBM responsible for any third party claims against Licensee, except (to the extent permitted in Section 10 (Limitation of Liability)) for: i) bodily injury (including death); or ii) damage to real or tangible personal property for which (in either case) IBM is legally liable to that third party.

IRELAND

8.2 Exclusions

The following paragraph is added:

Except as expressly provided in these terms and conditions, or Section 12 of the Sale of Goods Act 1893 as amended by the Sale of Goods and Supply of Services Act, 1980 (the "1980 Act"), all conditions or warranties (express or implied, statutory or otherwise) are hereby excluded including, without limitation, any warranties implied by the Sale of Goods Act 1893 as amended by the 1980 Act (including, for the avoidance of doubt, Section 39 of the 1980 Act).

IRELAND AND UNITED KINGDOM

2. Agreement Structure

The following sentence is added:

Nothing in this paragraph shall have the effect of excluding or limiting liability for fraud.

10.1 Items for Which IBM May Be Liable

The following replaces the first paragraph of the Subsection:

For the purposes of this section, a "Default" means any act, statement, omission or negligence on the part of IBM in connection with, or in relation to, the subject matter of an Agreement in respect of which IBM is legally liable to Licensee, whether in contract or in tort. A number of Defaults which together result in, or contribute to, substantially the same loss or damage will be treated as one Default.

Circumstances may arise where, because of a Default by IBM in the performance of its obligations under this Agreement or other liability, Licensee is entitled to recover damages from IBM. Regardless of the basis on which Licensee is entitled to claim damages from IBM and except as expressly required by law without the possibility of contractual waiver, IBM's entire liability for any one Default will not exceed the amount of any direct damages, to the extent actually suffered by Licensee as an immediate and direct consequence of the default, up to the greater of (1) 500,000 euro (or the equivalent in local currency) or (2) 125% of the charges (if the Program is subject to fixed term charges, up to 12 months' charges) for the Program that is the subject of the claim. Notwithstanding the foregoing, the amount of any damages for bodily injury (including death) and damage to real property and tangible personal property for which IBM is legally liable is not subject to such limitation.

10.2 Items for Which IBM is Not Liable

The following replaces Items 10.2b and 10.2c:

b. special, incidental, exemplary, or indirect damages or consequential damages; or

c. wasted management time or lost profits, business, revenue, goodwill, or anticipated savings.

JAMA SOFTWARE
SOFTWARE LICENSE AGREEMENT

NOTE: THIS AGREEMENT WILL ONLY APPLY TO THE EXTENT THAT NO BINDING AGREEMENT, WRITTEN OR ELECTRONIC, (THE "OTHER AGREEMENT") IS ALREADY IN PLACE BETWEEN CUSTOMER (DEFINED BELOW) AND JAMA SOFTWARE, INC. ("JAMA") PERTAINING TO THE SOFTWARE PRODUCT TO WHICH THIS AGREEMENT APPLIES OR RELATED PROFESSIONAL SERVICES (AS DEFINED BELOW). TO THE EXTENT THAT ANY OTHER AGREEMENT IS IN EFFECT, THEN SUCH OTHER AGREEMENT WILL GOVERN CUSTOMER'S DOWNLOAD AND USE OF THE SOLUTION AND RECEIPT OF HOSTING SERVICES AND/OR PROFESSIONAL SERVICES AND THIS AGREEMENT WILL NOT APPLY EVEN IF YOU ARE REQUIRED TO CLICK THE BOX AFFIRMING YOUR CONSENT TO THE TERMS OF THIS AGREEMENT.

BY COMPLETING THE ONLINE REGISTRATION FORM AND CLICKING THE "I AGREE" BUTTON, ACCESSING OR USING THE SOFTWARE (AS DEFINED BELOW) WITHOUT AN APPLICABLE OTHER AGREEMENT OR BY OTHERWISE AGREEING IN WRITING TO THE TERMS AND CONDITIONS SET FORTH HEREIN, YOU SUBMIT TO JAMA, A DELAWARE CORPORATION ("WE" OR "JAMA"), AN OFFER TO OBTAIN THE RIGHT TO USE THE SOFTWARE UNDER THE PROVISIONS OF THIS SOFTWARE LICENSE AGREEMENT (THE "AGREEMENT").

BY CLICKING THE "I AGREE" BUTTON, YOU HEREBY AGREE THAT YOU HAVE THE REQUISITE AUTHORITY, POWER AND RIGHT TO FULLY BIND THE PERSON AND/OR ENTITIE(S) (COLLECTIVELY, THE "CUSTOMER") WISHING TO USE THE SOFTWARE LISTED ON THE ORDER CONFIRMATION PAGE, QUOTE, QUOTE AND/OR INVOICE (EACH A "QUOTE") WHICH JAMA OR ONE OF ITS AUTHORIZED RESELLERS (A "RESELLER") PROVIDES TO CUSTOMER IN CONNECTION WITH THE PURCHASE OF LICENSES TO THE SOLUTION AND RECEIPT OF PROFESSIONAL SERVICES DESCRIBED BELOW. THE TERMS OF EACH ORDERING DOCUMENT WILL SET FORTH THE SPECIFIC TERMS OF THE ORDER BUT ALL APPLICABLE TERMS AND CONDITIONS BELOW SHALL APPLY.

IF YOU DO NOT HAVE THE AUTHORITY TO BIND THE CUSTOMER OR YOU OR THE CUSTOMER DO NOT AGREE TO ANY OF THE TERMS BELOW, JAMA IS UNWILLING TO PROVIDE THE SOFTWARE OR PROFESSIONAL SERVICES TO THE CUSTOMER, AND YOU SHOULD NOT CLICK TO ACCEPT THE TERMS OF THIS AGREEMENT AND YOU SHOULD DISCONTINUE THE ORDER, DOWNLOAD AND/OR INSTALLATION PROCESS AND NOT REQUEST ANY PROFESSIONAL SERVICES.

CUSTOMER ACKNOWLEDGES AND AGREES THAT IT IS A PARTY TO THIS AGREEMENT WITH JAMA AND THAT JAMA MAY ENFORCE THESE TERMS AND CONDITIONS AGAINST CUSTOMER EVEN IF THE QUOTE (DEFINED BELOW) HAS BEEN ISSUED AND/OR EXECUTED BY A RESELLER.

1. **Ordering.** Under this Agreement Customer may order from Jama or one of its authorized resellers (a) licenses to the Jama's standard software offerings (in object code format) ("Software"), (b) related maintenance and support services ("Maintenance and Support") and/or (c) consulting, implementation or other professional services ("Professional Services"). The specifics of each Customer order will be set forth on a confirmation page, quote, invoice or other ordering form that references this Agreement and is mutually agreed to by the parties in writing (each, a "Quote"). Certain components and modules of the Software may be developed and licensed by a third party and additional terms and conditions may apply and will be specified on the Quote. Customer's execution of, or other agreement to the terms of, a Quote constitutes a binding commitment to purchase the items described therein under the terms of this Agreement. All mutually executed Quotes are incorporated herein by reference.

2. **License Grant and Restrictions.**

   2.1. License. Subject to the terms of this Agreement and solely during the license term set forth in the Quote ("License Term"), Jama hereby grants to Customer a limited, worldwide, non-exclusive, and non-transferable license (without sublicense rights) to (i) install a single instance of the Software for production purposes for Customer's own internal business purposes, (ii) use and permit Users (as defined in Section 2.2 below) to use to Software in accordance with the user documentation made available in connection with the Software ("Documentation") and (iii) make copies of and use the Documentation for Customer's own internal business purposes. Upon the effectiveness of a Quote, Jama will make the Software available to Customer for download. Updates and Upgrades (as defined in the Support Terms referenced in Section 9 below) that are provided as part of Maintenance and Support are deemed part of the Software for purposes of this Agreement.

   2.2. License Implementation Types. Jama licenses the Software for use by Customer's employees, partners, consultants, contractors and other individuals designated by Customer (each a "User") under one of several license models. The type and number of licenses obtained by Customer (including a description of the rights associated therewith) are specified in the relevant Quote.

2.3. Restrictions: Customer agrees not to: (a) reverse engineer or otherwise attempt to discover the source code of or trade secrets embodied in the Software; (b) distribute, lend, rent, sell, transfer or grant sublicenses to, or otherwise make available the Software (or any portion thereof or data resulting therefrom) to parties other than authorized Users; (c) create modifications to or derivative works of Software; (d) reproduce Software except that Customer may make one archival copy of the Software solely for backup purposes; (e) attempt to modify, alter or circumvent any license control mechanisms within the Software; (f) use or transmit the Software in violation of any applicable laws, including, without limitation any data privacy or data protection laws; (g) in any way access, use, or copy any portion of the Documentation or Software (including the logic and/or architecture thereof and any trade secrets included therein) to directly or indirectly develop, promote, distribute, sell or support any product or service that is competitive with any Jama products or services; or (h) remove, obscure or alter any copyright notices or any name, logo, tagline or other designation of Jama displayed on any display screen within the Software ("Jama Marks"). Customer will not permit any party to perform any of the foregoing actions. The Software is a "commercial item," as that term is defined at 48 C.F.R. 2.101 (OCT 1995), and more specifically is "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (SEPT 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (JUNE 1995), the Software is provided to U.S. Government End Users (i) only as a commercial end item and (ii) with only those rights as are granted to all other end users pursuant to the terms and conditions herein.

3. Bankruptcy. All licenses granted pursuant to this Agreement are, for the purposes of Section 365(n) of the U.S. Bankruptcy Code ("Code"), deemed to be licenses of rights to "intellectual property," as defined under Section 101 of the Code. In any bankruptcy or insolvency proceeding involving Jama, Customer (as licensee of such rights) will retain and may fully exercise all of its rights and elections under the Code will apply notwithstanding conflicts of law principles.

4. Professional Services. If indicated in the Quote, Jama will perform Professional Services. The particulars of each Professional Services engagement (including any deliverables to be provided in connection therewith ("Deliverables")) will be as set forth in Jama's standard data sheets provided to Customer and/or one or more statements of work (each an "SOW") entered into by the parties. In a timely manner, Customer will provide all assistance reasonably requested by Jama in connection with the Professional Services.

5. Proprietary Rights. As between the parties, (a) Customer and its suppliers shall retain ownership of all Customer Confidential Information, pre-existing Customer intellectual property and data, requirements and other content of any kind uploaded by Customer and its Users through the Software (collectively, "Customer Content"), and (b) Jama and its suppliers will retain all right, title and interest in and to the Jama Marks, Software, Documentation , all Updates and Upgrades thereto, the Deliverables (except to the extent they include pre-existing Customer Confidential Information or intellectual property), and other derivative works of the Software and/or Documentation that are provided by Jama, including any and all intellectual property and other proprietary rights to the foregoing. Jama may collect and use data pertaining to use of the Solution ("Usage Data"). All such data will be collected anonymously without reference to Customer or any User. Customer acknowledges the goodwill associated with the Jama Marks belongs exclusively to Jama and, upon request, Customer will modify or cease its use of any Jama Marks. All rights not expressly licensed by Jama hereunder are reserved. Customer's rights to the Deliverables shall be the same as Customer rights to the Software to which such Deliverables pertain.

6. Representations and Warranties.

6.1. Limited Performance Warranty. Jama represents and warrants that (a) it will perform all Professional Services in a professional manner consistent with industry standards and practices, (b) for a period of ninety (90) days after the Software is first made available to Customer, the Software, when used as permitted under this Agreement and in accordance with the Documentation, will perform in all material respects as described in the Documentation and (c) upon delivery the Software will not contain any time bombs or other computer software routines intentionally designed to permit unauthorized access to the Software or Customer Content by a third party or to cause damage to Customer Content or Customer's systems ("Viruses"). In the event of any breach of the warranties in Sections 6.1(a) or (b) above, Jama shall, as its sole liability and Customer's sole remedy, diligently remedy any deficiencies after receipt of written notice from Customer. If Jama determines that it is unable to remedy the deficiency, Jama will refund to Customer a pro-rata portion of the license or fees actually paid by Customer to Jama for the defective Software and, in such instance, Customer's right to use that particular Software will terminate. Jama will not be liable to the extent that any breach of the foregoing warranties are caused by (a) third-party components (including in combination with the Software) not provided by Jama or any open source components or freeware; (b) modifications to the Software other than Updates or Upgrades; or (c) unauthorized use or use of the Software other than in accordance with the Documentation; or (d) Viruses introduced by Customer or its Users (collectively, "Exclusions").

6.2. Disclaimer. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH ABOVE, THE SOFTWARE, PROFESSIONAL SERVICES, AND DELIVERABLES, ARE PROVIDED "AS IS" AND JAMA HEREBY DISCLAIMS ALL WARRANTIES, IMPLIED OR EXPRESS, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF SATISFACTORY QUALITY, MERCHANTABILITY, FITNESS, NON-INFRINGEMENT, TITLE, ACCURACY, AND COURSE OF DEALING.

7. Indemnification. Jama will defend or settle, at its own expense, any claim or suit by a third party against Customer alleging that the Software infringes any trademark, copyright, or trade secret recognized in the United States, Canada or any member country within the European Union. Jama will also pay all damages and costs that by final judgment may be assessed against Customer due to such infringement. Jama's obligation as set forth in this paragraph is expressly conditioned upon the following: (1) that Jama shall be notified promptly in writing by Customer of any claim or suit; (2) that Jama shall have sole control of the defense or settlement of any claim or suit; (3) that Customer shall cooperate with Jama in a reasonable way to facilitate the settlement or defense of any claim or suit; and (4) that the claim or suit does not arise from any combinations of Software with non-Jama programming or devices. Jama's indemnification obligations shall not apply to the extent that any claim or liability results from any Exclusion or unsupported version of the Software. If the Software (or any component thereof) becomes, or in Jama's reasonable opinion is likely to become, the subject of an infringement claim, Jama may, at its option and expense, either (y) procure for Customer the right to continue exercising the rights licensed to Customer in this Agreement or (z) replace or modify the Software so that it is non-infringing and reasonably functionally equivalent. If neither of the foregoing options are in Jama's reasonable opinion, commercially reasonable, Jama may terminate the applicable Quote and refund to Customer a pro-rata portion of the applicable prepaid fees. This Section 7 states Jama's entire liability and Customer's sole and exclusive remedy for infringement claims and actions.

8. Limitation on Liability. EXCEPT FOR LIABILITY UNDER SECTION 7 ABOVE, IN NO EVENT SHALL JAMA OR ITS SUPPLIERS BE LIABLE TO CUSTOMER, USERS OR TO ANY THIRD PARTY FOR ANY INDIRECT, INCIDENTAL, PUNITIVE, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING BUT NOT LIMITED TO DAMAGES TO BUSINESS REPUTATION, LOST BUSINESS OR LOST PROFITS), WHETHER FORESEEABLE OR NOT AND HOWEVER CAUSED, EVEN IF JAMA IS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE TOTAL LIABILITY OF JAMA OR ITS SUPPLIERS TO CUSTOMER, USERS OR ANY THIRD PARTY EXCEED THE FEES PAID BY CUSTOMER HEREUNDER.

9. Maintenance and Support Services. If purchased by Customer, Jama will provide Maintenance and Support in accordance with the terms and conditions set forth in the applicable Maintenance and Support Services Agreement made available at <http://www.jamasoftware.com/legal>, which such terms are incorporated herein by reference (the "Support Terms").

10. Confidentiality.

10.1. General. Each party acknowledges that it may have access to certain confidential information of the other party concerning the other party's business, plans, customers, technology, products and services ("Confidential Information"). Confidential Information will include, but not be limited to, each party's proprietary software, technology and trade secrets and customer information, to the extent identified as confidential or proprietary, and the terms and conditions of this Agreement. Each party agrees that it will not use in any way, for its own account or the account of any third party, nor disclose to any third party (except as required by law or to the disclosing party's attorneys, accountants and other advisors as reasonably necessary and subject to the confidentiality provisions hereof), any of the other party's Confidential Information, whether received prior to or following the Effective Date, and will take reasonable precautions to protect the confidentiality of Confidential Information. If either party is required by a court order or other binding legal obligation to disclose Confidential Information of the other party, then it will, to the extent permitted, notify the other party and use reasonable efforts to prevent or limit the scope of such disclosure.

10.2. Exclusion. Information will not be deemed Confidential Information hereunder if such information: (i) is rightfully known to the receiving party prior to receipt from the disclosing party directly or indirectly from a source other than one having an obligation of confidentiality to the disclosing party; (ii) becomes known (independently of disclosure by the disclosing party) to the receiving party directly or indirectly from a source other than one having an obligation of confidentiality of the disclosing party; (iii) becomes publicly known or otherwise ceases to be secret or confidential, except through a breach of this Agreement by the receiving party; or (iv) is independently developed by the receiving party.

11. Term and Termination.

11.1. Term. This Agreement will remain in effect until terminated. The term of each license to use the Software and related Maintenance and Support will be as set forth on the Quote. Each such term will automatically renew for the renewal period

specified in the Quote, if any, or, if not specified, for a period of one year unless one party notifies the other party at least 30 days prior to the commencement of the renewal term that it does not wish to renew.

11.2. Termination. Either party may terminate this Agreement thirty (30) days after giving written notice to the other party if the other party materially breaches any term of this Agreement and fails to cure such breach within such period after receiving written notice describing the breach from the non-breaching party.

11.3. Effect. Upon any termination of this Agreement, without prejudice to any other rights or remedies which the parties may have, (a) all rights licensed and obligations required hereunder shall immediately cease (including Customer's and Users' right to access and use the Software); provided that Sections 2.3, 5, 6.2, 8, 10, 11.3, 12, and 13 shall survive termination, (b) Customer will promptly delete and destroy all instances of the Software in its possession or control (if any), and (c) Customer shall promptly pay to Jama any outstanding fees that have accrued prior to the date of termination.

12. Fees and Payment. Subject to the terms and conditions below, all fees for the Software licenses, Hosting Services, Professional Services and/or Maintenance and Support will be set forth on the applicable Quote. Unless otherwise agreed to in writing by the parties, Customer will pay to Jama or, if applicable, one of its authorized resellers all undisputed fees owed within thirty (30) days after Customer's receipt of an invoice pertaining thereto. Payments will be sent to the address included on the invoice. Unless otherwise set forth in a Quote, all amounts payable shall be in the currency of the United States and specifically exclude (and Customer is responsible for) any and all applicable sales, use and other taxes, (other than taxes based on Jama's income).

13. Miscellaneous. Not more than once per year Jama may audit Customer's use of the Software to ensure that Customer is operating within the license parameters and other requirements of this Agreement. The parties are independent contractors with respect to each other. Each party will be excused from any delay or failure in performance hereunder, other than the payment of money, caused by reason of any occurrence or contingency beyond its reasonable control. The obligations and rights of the party so excused will be extended on a day-to-day basis for the period of time equal to that of the underlying cause of the delay. Neither party will assign, transfer or delegate its rights or obligations under this Agreement (in whole or in part) without the other party's prior written consent except pursuant to a transfer of all or substantially all of such party's business and assets, whether by merger, sale of assets, sale of stock, or otherwise. Any attempted assignment, transfer or delegation in violation of the foregoing shall be null and void. All modifications to or waivers of any terms of this Agreement must be in a writing that is signed by the parties hereto and expressly references this Agreement. This Agreement shall be governed by the laws of the Oregon excluding its conflicts of law principles. The exclusive venue and jurisdiction for any and all disputes, claims and controversies arising from or relating to this Agreement shall be the courts located in the state of either party's headquarters. Each party waives any objection (on the grounds of lack of jurisdiction, forum non conveniens or otherwise) to the exercise of such jurisdiction over it by any such courts. The United Nations Convention on Contracts for the International Sale of Goods will not apply to the interpretation or enforcement of this Agreement. In the event that any provision of this Agreement conflicts with governing law or if any provision is held to be null, void or otherwise ineffective or invalid by a court of competent jurisdiction, (a) such provision shall be deemed to be restated to reflect as nearly as possible the original intentions of the parties in accordance with applicable law, and (b) the remaining terms, provisions, covenants and restrictions of this Agreement shall remain in full force and effect. No waiver of any breach of any provision of this Agreement shall constitute a waiver of any prior, concurrent or subsequent breach of the same or any other provisions hereof, and no waiver shall be effective unless made in writing. This Agreement includes any applicable Quotes and other terms and conditions incorporated herein by reference. Collectively the foregoing constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements or communications. The terms on any purchase order or similar document submitted by Customer to Jama will have no effect and are hereby rejected. All notices, consents and approvals under this Agreement must be delivered in writing by courier, by facsimile, or by certified or registered mail, (postage prepaid and return receipt requested) to the other party at its main corporate headquarters and sent to the attention of such party's Chief Executive Officer with a copy to each party's General Counsel.

Addendum

The following terms and conditions supplement or modify the terms and conditions of the Agreement, as set out above, to the extent Customer has indicated on an applicable Quote that Customer is subject to the laws of any of the countries (or any state of any of the countries) set out below. In the event of any inconsistencies between this Addendum and the provisions of the Agreement, this Addendum shall prevail. Unless expressly amended in this Addendum, the provisions of the Agreement shall remain in full force and effect.

All countries in the Europe, Middle East and Africa (EMEA) region, except for France and Germany:

1. Notwithstanding Section 2.3(a), Customer may not reverse engineer or otherwise attempt to discover the source code of the Solution or any portion thereof except to the limited extent required to be permitted by mandatory applicable law notwithstanding contractual prohibition.

2. Notwithstanding any provision of the Agreement to the contrary, neither party excludes or limits its liability for (i) personal injury or death caused by its negligence, (ii) fraud or fraudulent misrepresentation, or (iii) any other liability which may not lawfully be excluded or limited.

3. For the purposes hereof, "Bribery Act" means the Bribery Act 2010 and any subordinate legislation made under that Act from time to time together with any guidance or codes of practice issued by the relevant government department concerning the legislation; and "Prohibited Act" means (a) to directly or indirectly offer, promise or give any person working for or engaged by the other party a financial or other advantage to (i) induce that person to perform improperly a relevant function or activity; or (ii) reward that person for improper performance of a relevant function or activity; (b) to directly or indirectly request, agree to receive or accept any financial or other advantage as an inducement or reward for improper performance of a relevant function or activity in connection with the Agreement; (c) committing any offense (i) under the Bribery Act; (ii) under legislation creating offences concerning fraudulent acts; (iii) at common law concerning fraudulent acts relating to this Agreement or any other contract between the parties; or (iv) defrauding, attempting to defraud or conspiring to defraud a party. Each party shall not, and shall procure that any of its related parties and its personnel shall not, in connection with the Agreement, commit a Prohibited Act and undertakes that it is not aware of any financial or other advantage being given to any person working for or engaged by the other party, or that an agreement has been reached to that effect, in connection with the entering into of the Agreement, excluding any arrangement of which full details have been disclosed in writing to the other party before entering into of the Agreement.

4. Notwithstanding Section 13, the Agreement shall be governed by the laws of England. The exclusive venue and jurisdiction for any and all disputes, claims and controversies arising from or relating to the Agreement shall be the courts of England.

France:
1. In Section 7, the words "terminate this Agreement" are replaced with the words: "terminate as of right ("de plein droit") without any judicial formalities".

2. Section 8 is replaced with the words: "NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY UNDER THIS AGREEMENT, FOR ANY INDIRECT DAMAGES (INCLUDING ANY DAMAGE TO BUSINESS REPUTATION, LOST PROFITS OR LOST DATA), WHETHER FORESEEABLE OR NOT AND WHETHER A PARTY IS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. EACH PARTY'S AGGREGATE CUMULATIVE LIABILITY TO THE OTHER, IN CONNECTION WITH THIS AGREEMENT, INCLUDING THE SOLUTION, SERVICES AND INTELLECTUAL PROPERTY PROVIDED HEREUNDER SHALL NOT EXCEED, IN THE AGGREGATE THE TOTAL OF THE FEES ACTUALLY PAID AND THE FEES PAYABLE TO JAMA BY CUSTOMER UNDER THIS AGREEMENT DURING THE ONE YEAR PERIOD PRIOR TO THE DATE THAT SUCH LIABILITY FIRST ARISES. HOWEVER, THERE IS NO LIMITATION ON DIRECT LOSS, CLAIM OR DAMAGES ARISING AS A RESULT OF AN INFRINGEMENT OF EITHER PARTY'S INTELLECTUAL PROPERTY RIGHTS, OR A BREACH OF SECTION 10.0 OF THIS AGREEMENT, OR IN CONNECTION WITH A PARTY'S INDEMNIFICATION OBLIGATIONS."

3. In Section 11.2, the words "may be terminated" are replaced with the words "may be terminated as of right ("de plein droit") without any judicial formalities."

4. In Section 12, after the words "Unless otherwise agreed to in writing by the parties including in a Pricing Schedule, Customer will pay to Jama or the Reseller, as applicable, all undisputed Fees owed within 30 days of the date of the invoice pertaining thereto", the following words are added: "In the event of failure to pay an invoice within this deadline, the unpaid amounts will give rise to the payment of late payment interest, equal to three (3) times the legal interest. Interest will begin to run on the day following the due date of the relevant invoice."

5. In Section 12, replace the words "All amounts payable shall be in the currency of the United States and any and all applicable sales, use and other taxes (other than taxes based on Jama's income) will be separately and specifically stated (and are the responsibility of Customer)", with the following: "All amounts payable shall be in the currency dictated by Jama or its resellers and any and all applicable sales, use and

other taxes (other than taxes based on Jama's income) will be separately and specifically stated (and are the responsibility of Customer). Accordingly, if any amount to be paid under this Agreement to Jama or the Reseller, is subject to any deductions or withholdings for any present or future taxes, levies, imposts, duties, fees, charges, or liabilities imposed by any competent governmental authority then the Customer must pay an additional amount to Jama or the Reseller, as the case may be, as is necessary so that the net amount actually received by Jama or the Reseller after such deduction, payment or withholding will equal the full amount stated to be payable under this Agreement".

6. Notwithstanding Section 13.0, this Agreement shall be governed by the laws of France. The exclusive venue and jurisdiction for any and all disputes, claims and controversies arising from or relating to this Agreement shall be the Commercial Court of Paris, France.

Germany:
1. In Section 2.1, after the words "Jama grants to Customer a" the word "non-perpetual" is added.

2. In Section 2.3, after the words "Except as otherwise expressly permitted under this Agreement" the following words are added: "or allowed according to §§ 69d et seq. of the German Copyright Act".

3. In Section 2.3, the following words are deleted: "The Solution is a "commercial item," as that term is defined at 48 C.F.R. 2.101 (OCT 1995), and more specifically is "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (SEPT 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (JUNE 1995), the Solution is provided to U.S. Government End Users (i) only as a commercial end item and (ii) with only those rights as are granted to all other end users pursuant to the terms and conditions herein."

4. If the Professional Services are regarded as works in terms of §§ 631 et seq. of the German Civil Code (Bürgerliches Gesetzbuch, "BGB"), any Defects in the Professional Services shall be remedied by Jama through free-of-charge removal of defects (repair) or replacement. If the defect cannot be remedied within a reasonable period, or if the repair or replacement has failed for other reasons, Customer may, at its discretion, either withdraw from the relevant SOW or reduce the fees for the Professional Services.

5. In section 6.1, the following words are added: "Any warranty claims against Jama shall expire after one year provided that Jama did not cause a defect intentionally or in case of breach of a guarantee."

6. Section 8 is replaced with the following words: "For damages with respect to injury to health, body or life caused by Jama, Jama's representatives or Jama's agents in the performance of the contractual obligations, Jama is fully liable. Jama is fully liable for damages caused willfully or by gross negligence by Jama, Jama's representatives or Jama's agents in the performance of the contractual obligations. The same applies to damages which result from the absence of a quality which was guaranteed by Jama or to damages which result from malicious action of Jama. If damages, except for such cases covered by sentence no. 1 or sentence no. 4, with respect to a breach of a contractual core duty are caused by slight negligence, Jama is liable only for the amount of the damage which was typically foreseeable. Contractual core duties, abstractly, are such duties whose accomplishment enables proper fulfillment of the Agreement in the first place and whose fulfillment a contractual party regularly may rely on. Jama's liability based on the German Product Liability Act remains unaffected. Any further liability of Jama is excluded. The limitation period for claims for damages against Jama expires after one (1) year, except for such cases covered by sentences 1, 2 or 4."

7. In Section 10, the following words are added: "The Receiving Party's obligation under this Section 10 shall expire five years after the term of this Agreement."

8. In Section 11.2 after the words "30 days of the date of" the following words are added: "Customer's receipt of"

9. Notwithstanding Section 13, this Agreement shall be governed by the laws of Germany. The exclusive venue and jurisdiction for any and all disputes, claims and controversies arising from or relating to this Agreement shall be the courts of Hamburg, Germany.

All countries in the Japan and Asia Pacific (JAPAC) region

1. Section 2 of the recitals in the Agreement shall be amended to: "BY COMPLETING THE ONLINE REGISTRATION FORM AND CLICKING THE "I AGREE" BUTTON, ACCESSING OR USING THE SOFTWARE (AS DEFINED BELOW) WITHOUT AN APPLICABLE OTHER AGREEMENT OR BY OTHERWISE AGREEING IN WRITING TO THE TERMS AND CONDITIONS SET FORTH HEREIN, YOU HEREBY ACCEPT ALL THE TERMS AND CONDITIONS SET OUT HEREUNDER IN THIS AGREEMENT FOR THE RIGHT TO USE THE SOFTWARE AND RECEIVE PROFESSIONAL SERVICES (EACH AS DEFINED BELOW) PROVIDED BY JAMA SOFTWARE, INC., A DELAWARE CORPORATION ("WE" OR "JAMA") (THE "AGREEMENT")."

2. Section 13 of the Agreement shall be amended as follows:

a. The following sentence shall be added to Section 13: "A person who is not a party to this Agreement shall not be able to enforce any term in this Agreement under any laws purporting to grant such rights, which shall be excluded to the fullest extent permissible."

b. The following sentences shall be deleted from Section 13: “This Agreement shall be governed by the laws of the State of Oregon, without regard to its conflict of laws rules. The exclusive venue and jurisdiction for any and all disputes, claims and controversies arising from or relating to this Agreement shall be the state or federal courts located in the jurisdiction of the headquarters of either party.”

and be replaced with: “The Customer acknowledges and agrees that in the event of any breach or threatened breach of this Agreement, Jama shall be authorized and entitled to seek, from any court of competent jurisdiction, preliminary and permanent injunctive relief in addition to any other rights or remedies to which Jama may be entitled. This Agreement shall be governed by and determined in accordance with the laws of the Republic of Singapore and the parties hereby submit to the non-exclusive jurisdiction of the courts of the Republic of Singapore.”

South America:

1. Section 2 of the recitals in the Agreement shall be amended to:
“BY COMPLETING THE ONLINE REGISTRATION FORM AND CLICKING THE “I AGREE” BUTTON, ACCESSING OR USING THE SOFTWARE WITHOUT AN APPLICABLE OTHER AGREEMENT OR BY OTHERWISE AGREEING IN WRITING TO THE TERMS AND CONDITIONS SET FORTH HEREIN, YOU HEREBY ACCEPT ALL THE TERMS AND CONDITIONS SET FORTH IN THIS AGREEMENT BETWEEN JAMA SOFTWARE, INC., A DELAWARE CORPORATION (“WE” OR “JAMA”) AND CUSTOMER (THE “AGREEMENT”).”

2. The following words shall be added to the beginning of Section 8: “NOTWITHSTANDING ANY PROVISION OF THE AGREEMENT TO THE CONTRARY, NEITHER PARTY EXCLUDES OR LIMITS ITS LIABILITY FOR (I) GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, OR (II) ANY OTHER LIABILITY WHICH MAY NOT LAWFULLY BE EXCLUDED OR LIMITED.”

3. The following words shall be added to Section 8: “CUSTOMER ACKNOWLEDGES AND AGREES THAT THE LIMITATIONS SET FORTH IN THIS SECTION 8 ARE ESSENTIAL ELEMENTS OF THIS AGREEMENT AND THAT IN THE ABSENCE OF SUCH LIMITATION THE PRICES AND OTHER TERMS PROVIDED FOR HEREIN WOULD BE SUBSTANTIALLY DIFFERENT.”

4. The following words shall be added to Section 13: “For purposes of determining the governing law, the parties acknowledge that Jama is the proponent of this Agreement and of the business transactions embodied herein.”

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Last updated: 14 June 2013

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JUnit

JUnit 4 / Project License

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A. Definitions. Capitalized terms used in the Terms and Conditions and not otherwise defined therein shall have the meanings set forth below.

1. "Documentation" shall mean the then-current printed and digital user manual(s), instructions, on- line help files and technical documentation for the Programs (including Releases) made available by Perforce.
2. "Program(s)" shall mean the machine-readable object code of the computer software program or programs described in one or more price quotes issued by

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4. "Severity A Issue" shall mean a crash, data corruption, erroneous result, high-risk security vulnerability, or malfunction of the Program with no workaround or serious performance constraint.

5. "Software" shall mean, collectively, the Program and the Documentation.

6. "Term" shall mean the effective time period for which the Customer has purchased Software Support Services or Critical Care Support Services that are confirmed in the applicable price quote for such level(s) of services to be performed by Perforce.

B. Software Support Services. In consideration of a fee (the "Software Support Services Fee(s)") per license of the Software paid by Customer and Customer's agreement to meet the responsibilities set forth below, Perforce shall provide the Customer the following support services (the "Software Support Services") during the Term:

1. Standard Technical Support.

a. Perforce shall assist Customer in diagnosing errors and malfunctions that occur when the Program is used by Customer.

b. Perforce shall provide support services to Customer to attempt to correct diagnosed errors and malfunctions.

c. Unless otherwise agreed upon in writing between Perforce and Buyer, Perforce will provide standard technical support services by email or telephone. Standard technical support services are available during normal business hours as detailed on the Perforce website located at: https://www.perforce.com/support.

d. Perforce will use commercially reasonable efforts to respond to requests from the Customer for standard technical support services:

i. to accept/acknowledge the support request via email or phone within one business day of Perforce's receipt of request;

ii. to promptly inform Customer of current known status of the problem and enter a Job Report in Perforce's tracking system when appropriate;

iii. to provide a response within three business days detailing Perforce's analysis and/or assessment, including options and estimated time for resolution; and

iv. for bona fide defects or problem reports, Perforce will attempt to develop a software fix or workaround in a timely fashion.

e. Standard technical support also includes:

i. Patches. Software patches are available for download from Perforce's website located at: https://www.perforce.com/downloads. The Customer can also be notified of any patches by email or RSS feed.

ii. Knowledge Base. The Perforce Knowledge Base is a web-based repository for Perforce and general SCM topics. It is highly indexed and easily searched.

iii. Perforce Workshop. The Workshop supports the Perforce community, and open source developers at large, in building and sharing tools using the Software.

iv. Online Community. Customers can join the Perforce user community to seek advice and share opinions with other experienced Perforce Software users.

2. Standard Maintenance Support.

a. Perforce will make each Release of the Software published during the term of the Customer's Software Support Services for which it has paid the Software Support Services Fee available to Customer for download. All such downloads must be initiated by Customer. Perforce shall make commercially reasonable efforts to provide Releases that implement corrections, and Perforce will assist Customer in using the Software in a way that can avoid diagnosed errors, malfunctions, and defects.

b. Customer is not entitled to receive any new Software that Perforce does not deem to be a part of the Software package. For example, Customer is entitled to all updates and upgrades to the Software during the term of the Customer's Software Support Services for which it has paid the Software Support Services Fee, but should Perforce release another software package with related but different functionality under a different product name, Customer would not be entitled to such Software as an update or upgrade to their current Software package.

c. Customer is entitled to download, at no additional cost, versions of the Program for any additional Platforms available from Perforce as listed in Perforce's published offering of products, provided that the aggregate configuration of users supported among all servers does not exceed the number of licenses as provided in Customer's license file.

d. Perforce will provide patches for Severity A Issues for:

1. i. Server Products. The latest server releases and earlier server products for two years after the Software's initial availability.
2. ii. Desktop and Web Apps. Latest releases and earlier releases for one year after the Software's initial availability.

e. End of Life Software Support. Buyer will also have the option of paying additional fees to extend Software Support Services for a specific Perforce server product release for up to two additional years or a specific Perforce desktop or web app for one additional year. For a list of the end of life terms for the Software, go to Perforce's website located at: https://www.perforce.com/maintenance-support.

3. Critical Care Support Services. In consideration of an additional fee (the "Critical Care Support Services Fee(s)") per license of the Software paid by Customer, in addition to the Software Support Services provided above, Perforce shall provide the Customer with the following services (the "Critical Care Support Services") during the Term:

a. Perforce will provide Customer with a telephone response from a technical support engineer within 60 minutes of reporting a Critical Problem to Perforce by telephone at Perforce's designated Critical Care telephone number, which is provided to Customer upon receipt of the Critical Care Support Services Fee.

b. A "Critical Problem" is defined as a condition where an entire group is prevented from performing critical tasks in the Perforce Helix Versioning Engine by the failure of Perforce Helix Versioning Engine to perform as specified in the Perforce Helix Versioning Engine's Documentation. The following symptoms are examples of a Critical Problem: (i) the failure of Perforce Helix Versioning Engine following a server upgrade; (ii) denial of access to the server where the Perforce Helix Versioning Engine resides; or (iii) providing assistance in recovering Helix server data after a hardware failure or crash.

C. Exclusions from Software Support Services and Critical Care Support Services. Perforce has no obligations to: (a) provide Software Support Services, or Critical Care Support Services where hardware, tools, or software other than those supplied by or approved by Perforce have been incorporated into the Software; (b) provide Support for Software damaged by, or caused by, Customer; (c) import or export customer data, create or modify custom business rules or reports, or support custom modifications of the

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D. Obligations and Acknowledgments of Customer.

1. Customer agrees to these Terms and Conditions as part of one or more licenses for Perforce's Software, or other agreements relating to the Software, by and between Perforce and the Customer.
2. Customer will promptly report problems or bugs with the Software to Perforce.
3. Perforce may request that Customer take certain actions to determine whether the Customer's issue, error, or problem is related to the Software, or to another item in the Customer's environment.
4. Customer agrees to reasonably cooperate with the support representatives from Perforce.
5. Customer must keep adequate backup copies of its data and databases, and agrees that Customer is solely responsible for any and all restoration and reconstruction of lost or altered files or data that occurred prior to, or may occur during, the support process.
6. Customer agrees that Perforce may collect and use technical information and statistics regarding Customer's use of the Software during the provision of Software Support Services and Critical Care Services. Such information, used in an aggregated and de-identified format, will be used for internal diagnostic purposes and to help Perforce improve its Software and Software Support Services and Critical Care Services.

E. Termination. Perforce reserves the right to immediately terminate the Software Support Services and the Critical Care Support Services, without any further obligation to Customer, if Customer tampers with or modifies the Software without the express written authorization of Perforce in its sole discretion, or if Customer uses the Software in violation of any applicable agreement between Customer and Perforce or these Terms and Conditions.

F. Warranty. Perforce warrants that it will perform the Software Support Services and the Critical Care Support Services, as applicable, in a professional and workmanlike manner in accordance with the specifications set forth in herein. Perforce's sole liability, and Customer's exclusive remedy, for any breach of the under the warranty set forth in this Section F is limited to Perforce re-performing the non-conforming the Software Support Services or the Critical Care Support Services, as applicable, so as to make the non-conforming support services conforming.

G. Disclaimer of Additional Warranties. WITH THE EXCEPTION OF THE WARRANTIES SET FORTH IN SECTION F, PERFORCE HEREBY DISCLAIMS ALL WARRANTIES RELATING TO THE SOFTWARE, OR OTHER SUBJECT MATTER OF THIS AGREEMENT, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND CONFORMITY TO ANY REPRESENTATION, SKILL, AND CARE. PERFORCE DOES NOT MAKE ANY WARRANTY OR GUARANTEE THAT THE SOFTWARE SUPPORT SERVICES AND THE CRITICAL CARE SUPPORT SERVICES WILL BE FREE FROM ERRORS OR DEFECTS OR THAT THE SOFTWARE OR THAT THE SOFTWARE SUPPORT SERVICES AND THE CRITICAL CARE SUPPORT SERVICES WILL PROTECT CUSTOMER AGAINST ALL POSSIBLE THREATS.

H. Limitation of Liability. PERFORCE WILL NOT BE LIABLE TO CUSTOMER WITH RESPECT TO THE SUBJECT MATTER OF THESE TERMS AND CONDITIONS UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES (OTHER THAN ANY PUNITIVE DAMAGES PAID OR PAYABLE TO A THIRD PARTY), INCLUDING, WITHOUT LIMITATION, CLAIMS FOR DAMAGES FOR LOSS OF BUSINESS,

LOSS OF PROFITS, LOSS OR CORRUPTION OF DATA, FILES, OR PROGRAMS OR COSTS OF RECOVERING SUCH INFORMATION, EVEN IF PERFORCE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. PERFORCE WILL NOT BE LIABLE FOR ANY AMOUNTS THAT, IN THE AGGREGATE, EXCEED THE SOFTWARE SUPPORT FEES AND THE CRITICAL CARE FEES PAID, OR DEEMED TO HAVE BEEN PAID, BY CUSTOMER TO PERFORCE DURING THE 12 MONTHS IMMEDIATELY PRECEDING THE EVENT GIVING RISE TO SUCH CLAIM.

I. General.

1. Recording. In providing the Software Support Services and the Critical Care Support Services, Perforce may record the telephone calls for quality assurance and training purposes in compliance with all applicable laws.
2. Assignment. The provision of the Software Support Services and the Critical Care Support Services are not assignable by Customer without the prior written consent of Perforce. Any attempt to assign by Customer without consent will be void and of no effect. Perforce may subcontract the provision of the Software Support Services and the Critical Care Support Services to a third party.
3. Applicable Law. This Agreement shall be governed by the laws of the State of Minnesota without giving effect to any choice of law or conflict provision or rule (whether of the State of Minnesota or of any other jurisdiction) that would cause the laws of any other jurisdiction to be applied.

PERFORCE SOFTWARE, INC. END-USER LICENSE AGREEMENT ("EULA")

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This EULA is a legal agreement between the end user (referred to herein as "You," "Your," "Customer," or "Licensee"), and Perforce Software, Inc., a Delaware corporation, on its own behalf, and on behalf of each its subsidiaries (collectively, “Perforce”). This EULA governs Your use of Perforce's program(s) (the "Software").

BY INSTALLING, DOWNLOADING, REGISTERING, OR OTHERWISE ACCESSING OR USING THE SOFTWARE, YOU (OR YOUR AUTHORIZED AGENT, IF APPLICABLE) EXPRESSLY ACKNOWLEDGE AND AGREE THAT YOU HAVE READ THIS EULA AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. IF YOU DO NOT SO AGREE, YOU MAY NOT INSTALL, DOWNLOAD, OR OTHERWISE ACCESS THE SOFTWARE. IF YOU ARE ENTERING INTO THIS EULA ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH COMPANY OR ENTITY, AND ITS SUBSIDIARIES, AFFILIATES AND USERS, TO THIS EULA, IN WHICH CASE THE TERM "YOU, "YOUR," "CUSTOMER," AND "LICENSEE" SHALL REFER TO SUCH COMPANY OR ENTITY AND ITS SUBSIDIARIES, AFFILIATES, AND USERS.

1. Updates to this EULA. Perforce reserves the right, from time to time, to update, revise, modify and supplement the terms of this EULA, including, without limitation, the imposition of new or additional rules, policies, or terms on Licensee's use of the Software. Perforce will post the updated EULA on its website at www.perforce.com/termsandconditions, at which time such updated EULA will become immediately effective for all subsequently purchased licenses of the Software.
2. Grant of License; Conditions; Restrictions.
   2.1 Subject to the terms and conditions of this EULA, Perforce grants to Licensee, and Licensee hereby accepts, a limited, non-sublicensable, non-exclusive, and non-

transferable license for the Software, for the number of authorized users, and for the term as specified on the Perforce price quote or Perforce invoice, for Licensee's users to: (a) install and use the Software in accordance with the documentation for Licensee's own direct internal business purposes, and subject to all restrictions herein; and (b) make the number of exact copies of the Software and the related documentation as required for archival and back-up purposes, provided that each back-up copy of the Software retains all copyright and other proprietary notices included in the original copy provided by Perforce to the Licensee. Perforce hereby reserves all rights in and to the Software that are not specifically granted by this EULA. Notwithstanding anything to the foregoing in this Section 2.1, if the licenses granted under this EULA are for evaluation purposes, then, during the specified evaluation period, Licensee's use of the Software shall be limited to internal non-production evaluation use only.

2.2 Except as expressly provided in Section 2.1 above, Licensee shall not, either directly or indirectly, cause, instruct, direct, or permit any other person or entity to: (a) reverse engineer, translate, disassemble, decompile, reverse engineer, sell, rent, lease, manufacture, adapt, create derivative works from, or otherwise modify or distribute the Software or the documentation, or any part thereof, or otherwise attempt to discover the source code; (b) copy, in whole or in part, the Software or the documentation; (c) delete any copyright, trademark, patent or other notices of proprietary rights of Perforce or other parties as they appear anywhere in or on the Software or the documentation, or any portion thereof; or (d) tamper with, or attempt to tamper with, or circumvent or disable, or attempt to circumvent or disable, any license key or other limiting function delivered with the Software, or otherwise attempt to gain access to functionality or capacity that is not validly licensed by Licensee.

2.3 Open Source Components. The Software may include open source software (the "Open-Source Components"). Any use of the Open-Source Components by Licensee shall be governed by and is subject to, the terms and conditions of the applicable licenses and notices for such Open-Source Components. The Open-Source Components and the terms and conditions of the applicable licenses and notices for such Open-Source are SPECIFICALLY EXCLUDED FROM ANY WARRANTY OR OTHER PERFORCE OBLIGATIONS IN THIS EULA.

2.4 Federal Government End Use Provisions. Perforce provides the Software for ultimate federal government end use solely in accordance with the following: Government technical data and software rights related to the Software include only those rights customarily provided to the public as defined in this EULA. This customary commercial license is provided in accordance with FAR 12.211 (Technical Data) and FAR 12.212 (Software) and the Department of Defense transactions, DFAR 252.227-7015 (Technical Data – Commercial Items) and DFAR 227.7202-3 (Rights in Commercial Computer Software or Computer Software Documentation).

3. Limited Warranties, Disclaimers, and Limitation of Liability.

3.1 Limited Warranties. For a period of 30 days from the purchase date, Perforce warrants that the Software will substantially comply with its documentation; provided, however, that Perforce shall not be liable under this warranty if Licensee has not implemented any subsequent versions of the Software made available by Perforce under the software support, or provided to avoid potential infringement claims. Perforce's sole liability, and Licensee's exclusive remedy, for any breach of the foregoing warranty by Perforce is limited to the following: Perforce will, at its option, either repair or replace, at no additional charge to Licensee, any Software that fails to meet the foregoing warranty. Perforce makes no representations or warranties as to the continued availability of the Software.

3.2 DISCLAIMER OF WARRANTIES. WITH THE EXCEPTION OF THE WARRANTIES SET FORTH IN SECTION 3.1, PERFORCE AND ITS SUPPLIERS HEREBY DISCLAIM ALL

WARRANTIES RELATING TO THE SOFTWARE, OR OTHER SUBJECT MATTER OF THIS EULA, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF TITLE, NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER PERFORCE NOR ITS SUPPLIERS MAKES ANY WARRANTY WITH RESPECT TO THE RESULTS THAT MAY BE OBTAINED FROM USE OF THE SOFTWARE OR THAT THE SOFTWARE WILL OPERATE IN AN UNINTERRUPTED OR ERROR-FREE FASHION OR MEET LICENSEE'S REQUIREMENTS. ALL OPEN-SOURCE COMPONENTS AND OTHER THIRD PARTY MATERIALS ARE PROVIDED "AS IS."

3.3 Limitation of Liability. IN NO EVENT SHALL PERFORCE BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, CLAIMS FOR DAMAGES FOR LOSS OF BUSINESS, LOSS OF PROFITS, LOSS OR CORRUPTION OF DATA, FILES, OR PROGRAMS OR COSTS OF RECOVERING SUCH INFORMATION, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THE SOFTWARE OR THIS EULA EVEN IF PERFORCE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. PERFORCE WILL NOT BE LIABLE FOR ANY AMOUNTS THAT, IN THE AGGREGATE, EXCEED THE FEES PAID, BY LICENSEE TO PERFORCE DURING THE 12 MONTHS IMMEDIATELY PRECEDING THE EVENT GIVING RISE TO SUCH CLAIM. LICENSEE ACKNOWLEDGES THE PROVISIONS OF THIS SECTION 3.3 ALLOCATES THE RISKS UNDER THIS EULA BETWEEN THE PARTIES, AND LICENSEE HAS RELIED ON THE LIMITATIONS SET FORTH HEREIN IN DETERMINING WHETHER TO ENTER INTO THIS EULA.

4. Intellectual Property Ownership; Confidentiality. Licensee acknowledges and agrees that it obtains no ownership rights in the Software or the documentation, and that Perforce has and retains all right, title, interest and ownership, including any and all intellectual property rights, in and to the Software and any documentation, and in any copies, improvements, enhancements, or updates of the Software or the documentation, whether made by Licensee or Perforce. The Software is protected by United States laws, laws of other nations, and international treaty provisions. All rights not expressly granted in this EULA are reserved. Licensee acknowledges and agrees that the Software and the documentation, and all license keys to the Software, constitute and embody valuable confidential information and trade secret information of Perforce, and Licensee shall secure and protect such confidential information and trade secret information consistent with Perforce's rights therein, and shall not disclose such confidential information and trade secret information to any third party.

5. Compliance. Licensee acknowledges and agrees that Licensee shall be responsible for (a) installing the Software, (b) ensuring that usage by each of its users is in accordance with the terms and conditions of this EULA, and (c) ensuring that Licensee, and its users, agree to comply fully with all applicable laws, rules, and regulations, including, without limitation, to ensure that neither the Software nor any components thereof are exported, directly or indirectly, in violation of export laws or are intended to be used or are used for any purposes prohibited by law. Licensee is and remains liable to Perforce for any breach of this EULA by Licensee or its users and any breach of this EULA by Licensee or its users shall be deemed a breach by Licensee for which

6. Term; Termination.

6.1 This EULA, and the licenses granted hereunder are effective upon the date that Perforce makes the Software available to Licensee for download. Unless terminated earlier pursuant to Section 6.2 below, the term for the licenses granted hereunder shall be as provided in the Perforce price quote with respect to a specified evaluation term, specified subscription term or perpetual term.

6.2 Notwithstanding the foregoing, Perforce shall have the right to terminate this EULA immediately in the event that Licensee materially breaches its obligations hereunder.

Licensee shall, within 15 days of termination of this EULA for any reason, (a) discontinue all use of the Software, (b) destroy the original and all copies of the Software in its possession or control, and (c) provide written confirmation to Perforce of its compliance with the foregoing requirements. Upon any termination or expiration of EULA, all rights granted by Perforce to Licensee shall terminate.

7. Licensee Indemnification. Licensee shall indemnify and defend Perforce and its officers, directors, shareholders, employees, agents, affiliates, subsidiaries, successors, and assigns against any third party claim or threat of claim arising from or related to Licensee's, or any of its users, breach of this EULA.
8. Miscellaneous. Licensee may not sell, transfer, assign, or delegate any rights or obligations under this EULA. This EULA shall be governed by the laws of the State of Minnesota, without giving effect to any choice of law or conflict provision or rule, and excluding the United Nations Convention on Contracts for the International Sale of Goods. Any judicial proceeding brought with respect to this EULA may only be brought in the state and federal courts located in the State of Minnesota located in Hennepin County, and the Licensee hereby submits to the exclusive jurisdiction and venue of such courts, and any related appellate courts. No amendment or modification of this EULA, nor any waiver of any rights hereunder, shall be effective unless agreed to in a writing signed by authorized representatives by both parties. Any such waiver shall be narrowly construed to apply only to the specific provision and under the specific instance and circumstances for which it was given. Except as expressly provided in this EULA, no person or entity who is not a party will have any right or obligation pursuant to this EULA. Licensee agrees that, in addition to any other remedies available hereunder, by law, or otherwise, Perforce, and its third party providers, will be entitled to seek injunctive relief, as well as any other available equitable remedies, against any such continued breach by Licensee of such obligations. If any provision of this EULA is held invalid, illegal, or otherwise unenforceable, such provision shall be modified rather than voided in order to achieve the intent of the parties to the extent necessary to make the provision enforceable, and the enforceability of the remaining provisions of this EULA will not be impaired thereby. This EULA, including all price quotes and invoices issued in connection herewith, constitutes the sole and entire agreement of the parties with respect to the subject matter hereof and supersedes and cancels any prior and contemporaneous oral or written proposals, promises, or agreements. No terms or conditions, including any pre-printed or boilerplate terms and conditions, stated in any Licensee purchase order, or in any other Licensee documentation, shall be incorporated into or form any part of this EULA, and all such terms or conditions shall be null and void and of no force and effect.

PRIVACY POLICY

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(last updated May 2017)

1. Overview
Perforce Software, Inc., a Delaware corporation, on its own behalf, and on behalf of each its subsidiaries (collectively, “Perforce,” “we,” “us,” or “our”) is committed to protecting and respecting your privacy. The purpose of this website privacy policy (the “Policy”) sets out the basis by which any personal data we receive from you and about you through the Perforce website. This Policy does not apply to information collected through means of

communication other than the Perforce website, such as telephone, mail, facsimile, or in person, although such information collected by those other means may be protected by other policies or applicable laws.

By using the Perforce website, you, on behalf of yourself and any other person or entity on whose behalf you are using the Perforce website (collectively, "you"), consent and agree to our use, sharing, and disclosure of information as described in this Policy including any revisions to this Policy.

2. Information We May Collect From You

The personal information that Perforce collects is information that identifies you, or is reasonably linked to you, such as your email address, name, company name, home and/or work address, and/or telephone number. When you visit the Perforce website, we may view the Internet Protocol (or "IP") address of the device you are using to connect to the Internet and view the Perforce website.

You do not need to provide us with personal information in order to view the Perforce website, but, when you use the Perforce website, you may choose to provide us with information about yourself in a variety of different ways. We may collect and combine this information with information you choose to provide off-line. While you are under no obligation to provide such information, we cannot guarantee that we can provide customer support in the event that relevant information related to the use of our products or services is withheld. We may retain communications relating to customer support, and/or information drawn from such communications, for statistical and/or reference purposes. Some examples of the types of information we collect on the Perforce website include:

- Information you provide when subscribing to our mailing lists and company newsletter, interacting with the Public Depot, KnowledgeBase, user lists, and weblog, and when reporting a problem with our Perforce website;
- Request of srvices such as customer support, technical support, interactive demos, training, and consulting;
- Details of your visits to our site including, but not limited to, traffic data, location data, the resources that you access, and other communication data;
- Ensuring content from our site is presented in the most effective manner;
- Providing you with services that you request from us;
- Carrying out our obligations arising from any contracts entered into between you and us;
- Allowing you to participate in interactive features of our service when you choose to do so;
- Notifying you about changes to our services;
- Submitting a testimonial, comment, or other feedback message on a blog or other public-forum hosted on the Perforce website; and
- Contacting you with information about goods and services similar to those which were the subject of a previous sale to you.

3. Social Media Features; Links to other Websites

The Perforce website includes social media features, such as the Facebook "Like" button, widgets like the "Share This" button, or interactive mini-programs that run on the Perforce website. These features may collect your IP address, which page you are visiting on the Perforce website, and may set a cookie to enable the feature to function properly. Social media features and widgets are either hosted by a third party or hosted directly on the Perforce website. Your interactions with these features are governed by the privacy policy of the company providing such features. The Perforce website includes links to other websites whose privacy practices may differ from those of Perforce. If you follow a

link to any of these websites, please note that these websites have their own privacy policies and we do not accept any responsibility or liability for these policies. If you submit personal information to any of those websites, your information is governed by their privacy statements. We encourage you to carefully read the privacy statement of any website(s) you visit.

4. Information Collected Automatically Online
We collect information about your interactions with Perforce, including the type of device or browser you're using, your IP address, your browsing behavior while on the Perforce website, and the URLs of the websites you were at that referred you to the Perforce website. Perforce uses technologies such as cookies or similar technologies to analyze trends, administer the website, track users' movements around the Perforce website, and to gather demographic information about the Perforce user base as a whole. Users can control the use of cookies at the individual browser level.

We may permit third party service providers to collect and process some information from our digital properties. These providers may automatically collect information provided by your browser as part of a web page request, such as your referring domain, cookies, or your IP address. For more information on how these tools collect and use your information, please refer to the third parties' respective privacy policies. By using the Perforce website, you consent to the processing of data by these third parties in accordance with the third parties' privacy policies.

Please note that the Perforce website does not monitor, or behave differently, if your computer transmits a "do not track" or similar beacon or message.

5. Where We Store Your Personal Data
The data we collect from you may be transferred to, and stored at, various locations dependent on where Perforce systems are hosted, which are primarily located in the United States, United Kingdom, and Australia. The data may be processed by staff who work for us or for one of our suppliers. By submitting your personal data, you agree to this transfer, storing, or processing.

The transmission of information via the internet is not completely secure. Although we will take reasonable precautions to protect your personal data, we cannot guarantee the security of your data transmitted to our site, and any transmission is at your own risk. Once we have received your information, we will use strict procedures and security features to try to prevent unauthorized access.

6. Uses Made of Your Information
We do not sell, rent, or lease our customer lists to third parties. We occasionally hire other companies to provide services on our behalf, but they are required to maintain the confidentiality of the information provided and are prohibited from using it for any purpose other than to deliver the services. Additionally, some of Perforce's services are co-branded and offered in conjunction with other companies. We may share with those companies information collected in conjunction with the co-branded services.

7. How We Use the Information We Collect
We use the information we collect for things like:

Identifying you on our Perforce website in order to customize your experience;
Fulfilling orders and requests for products, services, or information;
Marketing and advertising products and services; and
Conducting research and analysis.

8. Protecting Children's Privacy

We are committed to protecting children's privacy on the Internet and we do not knowingly collect personal information from children under the age of 13 without prior parental consent. Please contact us via the "Contact Us" section of this Policy if you believe we may have collected information from your child and we will work to delete it.

9. Disclosure of Your Information
In the event we sell any business or assets, we may disclose your personal data to the prospective buyer of such business or assets. We may access or disclose information about you if we are under a duty to disclose or share your personal data to comply with any legal obligation, or to protect the rights, property, or safety of our employees, customers, or affiliates.

10. Third-Party Tracking Technologies
The use of cookies and web beacons by any tracking utility company is not covered by our privacy statement. Perforce does not have access or control over these third-party tracking technologies.

11. Legal Disclaimer
The Perforce website will disclose your personal information, without notice, only if required to do so by law or in the good faith belief that such action is necessary or reasonably desirable in our business judgment to protect our interests or those of third parties to: (a) comply with applicable laws or with any legal process served on Perforce or the Peforce website; (b) protect and defend the rights or property of Perforce (including enforcing this Policy); and, (c) act under exigent circumstances to protect the personal safety of users of Perforce or the public.

12. Your Rights
If your personally identifiable information changes, or if you no longer desire our services, you may correct, update, and/or request deletion on our site by emailing our privacy team at marketing@perforce.com. We will respond to all access requests within 30 days. In some cases, we may not be able to remove your personal information, in which case we will let you know if we are unable to do so and why. You can also stop the delivery of future promotional email from Perforce by following the opt-out instructions in emails that you receive.

If you request that your user information be deactivated from our records, there may be a brief delay in our processing that request while we verify that the request is valid and that it originates from you as opposed to an unauthorized third party. If you request that your information be deactivated, we reserve the right to terminate and/or limit your access to the Perforce website.

If you provide Perforce with user information, you have the following rights with respect to that information:

- To review the user information that you have supplied to us;
- To request that we correct any errors, outdated information, or omissions in user information that you have supplied to us;
- To request that your user information not be used to contact you;
- To request that your user information be removed from any solicitation list that we use;
- To request that your user information be deactivated from our records; and
- To unsubscribe.

To exercise any of these rights, please contact us at marketing@perforce.com.

13. Your California Privacy Rights
This Policy describes how we share information for marketing purposes. This Policy and

rights apply to all customers, including California residents:

We do not sell information with others outside of Perforce for marketing purposes, except as is otherwise described in this Policy.
We may share information with vendors, such as a fulfillment company that assists us with our operations, as provided in this Policy.

14. Contact Us
If you have questions regarding this privacy policy, please contact us.

Phone: 510-864-7400

Email: marketing@perforce.com.

Address: 400 North First Avenue, Suite 200
Attention: Marketing Department
Minneapolis, Minnesota 55401

15. Changes to Our Privacy Policy
In the event Perforce modifies the way(s) your information may be used, or otherwise changes the Privacy Policy, Perforce will update this page. You—our valued customer—should periodically visit this page to stay informed regarding such updates.

Background User

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A "background user" is a user identification which runs only Perforce background jobs. A "Perforce background job" is a software program which uses the Perforce server, either by means of Perforce client programs or the Perforce client API, to perform automated tasks. A background user license gives Customer the right to create one background user. Customer acknowledges the limitations of this background user license and agrees to restrict use of this non-paid user license as described herein.

Change of Server IP Address

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The Customer requests that Perforce Software, Inc., a Delaware corporation, on its own behalf, and on behalf of each its subsidiaries (collectively, “Perforce”), issue a license file enabling Customer to use the Perforce server software ("Software") on the computer identified as the "New server." This license file will supersede one or more license files ("Superseded Files") that presently permit the Software to run on the computer identified as the "Old server."

In consideration of Perforce's issuing the requested license file, Customer acknowledges and agrees that Customer will, within fifteen (15) days from the date the new license file is issued, take all measures necessary to remove and/or unrecoverably and permanently delete and/or destroy all copies of the Software located on the Old Server, and the related duplicate license files, including the permanent, unrecoverable deletion, or destruction, of

all copies of the Software, or parts thereof, on the Old Server, and on any other media where the Software was installed or accessed that is not connected to the New Server or the main license file stored on the New Server.

Customer acknowledges and agrees that, in the event Customer's representation above is untrue or has been breached, and Perforce commences legal action, to enforce the terms hereof, or to enforce intellectual property rights in the Software for Customer's unauthorized use thereof: (a) Perforce will be threatened with immediate and irreparable harm and will be entitled to seek, without limitation, (i) preliminary and permanent injunctive relief, without the requirement of posting a bond or other security, that will prohibit Customer's further possession or use of unauthorized copies of the Software or any part thereof, and/or (ii) specific enforcement of the terms hereof; and (b) should Perforce prevail in any such legal action, Customer will pay all attorneys' fees and reasonable expenses incurred by Perforce in prosecuting such legal action.

All terms and conditions of the license agreement entered into by and between Customer and Perforce, or the click accept license agreement located at https://www.perforce.com/terms-use#eula, whichever is applicable, with the exception of those terms expressly modified by this agreement, are incorporated herein by reference and made part of this agreement.

Customer certifies that the information provided is correct and complete and acknowledges that no distribution or duplication of the Software is permitted.

By making this change of server IP request, Customer agrees to allow Perforce, during reasonable business hours and upon reasonable notice, to conduct an audit of Customer's computer systems, including, without restriction, the server identified by its IP address in this request and all servers for which Perforce Software Inc. has previously granted licenses to Customer, for the sole purpose of verifying Customer's compliance with the conditions set forth in the foregoing paragraph ("Purpose"). Customer agrees to cooperate with Perforce in the conduct of such an audit, and to provide all technical assistance reasonably requested by Perforce for the Purpose.

Duplicate Server Request

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Customer understands and agrees that the additional software licenses being supplied by Perforce Software, Inc., a Delaware corporation, on behalf of itself and its subsidiaries, as applicable (collectively, "Perforce"), are for the sole purpose of enabling already-licensed personnel to access more than one Perforce server. Customer acknowledges that Perforce licenses its product to an authorized party of Customer who is assigned a user account of type standard by Customer to consume one license to use the products licensed by Perforce and for which a user record in the Customer's Perforce database will have been created, and does not operate a floating, concurrent, or site license system.

By making this request, Customer agrees to allow Perforce, during reasonable business hours and upon reasonable advance notice, to conduct an audit of Customer's computer systems, including, without restriction, the server identified by its IP address in this request, and all servers for which Perforce has previously granted licenses to Customer, for the sole purpose of verifying Customer's compliance with the conditions set forth in the foregoing

paragraph (the "Purpose"). Customer agrees to cooperate with Perforce in the conduct of such an audit, and to provide all technical assistance reasonably requested by Perforce for the Purpose.

IP-Less Request

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Perforce Software, Inc., a Delaware corporation, on behalf of itself, and on behalf of its subsidiaries, as applicable (collectively, “Perforce”), understands that, due to Customer's representations regarding Customer’s current server environment, licensing based on the IP address of the server host is not practical. Customer acknowledges and agrees that the license of Perforce’s software requires that each of Customer’s employees and other authorized parties who will have access to use the software must be assigned a user account of type standard by Customer to consume one license to use the software licensed to Customer by Perforce and for which a user record in the Customer’s Perforce database will have been created. Customer further acknowledges and agrees that Perforce does not operate a floating license system. All copies of the license file delivered to Customer remain the property of Perforce, and all copies of the license file, including Customer’s use of such license file, are subject to the terms and conditions of the license agreement entered into by and between Customer and Perforce, or the click accept license agreement located at https://www.perforce.com/terms-use#eula, whichever is applicable. Notwithstanding the foregoing, Customer is expressly forbidden from copying, reverse engineering, altering, tampering with, circumventing, disabling, or otherwise distributing the license file under any circumstances. The terms of this acknowledgment are deemed to be additional terms to the license agreement entered into by and between Customer and Perforce, or the click accept license agreement located at https://www.perforce.com/terms-use#eula, whichever is applicable.

Data Security and Privacy Statement for Helix ALM Add-On for Jira

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1. Overview

The Helix ALM add-on for JIRA allows the Customer's users to view data about Helix ALM items that are associated with JIRA issues. Perforce Software, Inc., a Delaware corporation, on behalf of itself, and on behalf of its subsidiaries, as applicable (collectively, “Perforce”), is responsible for provisioning, managing, and monitoring the hosted servers for JIRA add-on's applications.

2. Data Storage

The Helix ALM add-on for JIRA stores JIRA issue IDs and the JIRA project configuration information in the Customer's instance of the Helix ALM server. Perforce stores no customer or JIRA data because the JIRA add-in is a client side extension. The only operation Perforce servers perform is providing the download material for the JIRA add-in. No data is ever sent back to Perforce servers.

3. People and Access

Access to all of Customer's Helix ALM data is restricted by command and field security settings within Customer's Helix ALM, and Perforce does not have access to such data. All of Customer's JIRA add-on data is restricted by security settings within Customer's JIRA add-on., and Perforce does not have access to such data.

4. Privacy

Perforce understands the importance of maintaining the privacy of all customer-related data. For more information please see our privacy statement.

Copyright Terms and Conditions

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The content on the Perforce website is protected by the Copyright Laws of the United States of America and other countries worldwide. The unauthorized use and/or duplication of this material without the express and written permission from Perforce is strictly prohibited. Excerpts and links may be used, provided that full and clear credit is given to Perforce with the proper and specific direction to the original content.

Equal Employment Opportunity / Affirmative Action Policy Statement

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Perforce Software is committed to providing equal employment opportunity to all applicants and employees regardless of their race, creed, color, religion, gender, age, national origin, disability, military service, protected veteran status, genetic information, sexual orientation, gender identity or any other characteristic protected by federal, state or local law. We are strongly committed to this policy and believe in the concept and spirit of the law.

Perforce Software is further committed to ensuring that employment decisions are based on valid job requirements. In addition, all employment actions, such as recruiting, hiring, training, promotion, compensation, benefits, transfers, layoffs and termination are administered fairly to all persons on an equal opportunity basis, without discrimination on the basis of protected categories named above.

Perforce Software will not tolerate employees and applicants to be subjected to harassment, intimidation, threats, coercion or retaliation because they engaged or may engage in filing a complaint or assisted in a review, investigation or hearing related to any federal, state or local law requiring equal employment opportunity; or because they opposed any act deemed unlawful. Perforce Software will provide qualified applicants and employees with disabilities any needed reasonable accommodations, as required by law.

Janet Dryer, CEO, supports this affirmative action program and has appointed Brian Holsten, VP of Human Resources as Perforce's EEO Coordinator. The EEO Coordinator's responsibilities include implementing an internal audit and reporting system to monitor and measure the effectiveness of Perforce's equal employment opportunity efforts and report to executive management on this and any needs for remedial action.

Perforce Software maintains affirmative action plans for minorities, women, individuals with disabilities and protected veterans. Any questions regarding these plans or the company's equal opportunity policy should be directed to the EEO Coordinator who is responsible for the implementation of the plan. All employees are responsible for supporting the concept of equal employment opportunity and affirmative action, and assisting and cooperating in meeting our plan goals.

If you wish to view the plans for protected veterans and individuals with disabilities, contact Brian Holsten during normal business hours and arrangements will be made for the areas of the plan available for inspection under the law.

Perforce Software is committed to providing equal employment opportunity to all job seekers according to all applicable equal opportunity and affirmative action laws and regulations. If you are a qualified individual with a disability, a disabled veteran, or an individual that has other barriers that limit your ability to access our on-line application system, please contact Human Resources at 510-545-5400 or email at contact-hr@perforce.com to discuss alternative ways to apply for open positions.

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10.2 Exceptions. The above restrictions on the use or disclosure of the Confidential Information shall not apply to any Confidential Information that: (a) is independently developed by the Receiving Party without reference to the Disclosing Party's Confidential Information, or is lawfully received free of restriction from a third party having the right to furnish such Confidential Information; (b) has become generally available to the public without breach of this Agreement by the Receiving Party; (c) at the time of disclosure, was known to the Receiving Party free of restriction; or (d) the Disclosing Party agrees in writing is free of such restrictions.

10.3 Confidential Terms and Conditions; Publicity. Licensee shall not disclose the terms and conditions of this Agreement to any third party except for the Partner and the Distributor. Neither Party shall use the name of the other Party in publicity, advertising, or similar activity, without the prior written consent of the other, except that Licensee agrees that any member of the SAP Group may use Licensee's name in customer listings or, at times mutually agreeable to the Parties, as part of SAP Group's marketing efforts (including without limitation reference calls and stories, press testimonials, site visits, SAPPHIRE participation). SAP will make reasonable efforts to avoid having the reference activities unreasonably interfere with Licensee's business. Licensee agrees that SAP may share information on Licensee with any other member of the SAP Group for marketing and other business purposes and that Licensee has secured permission from its employees to allow SAP to share business contact information with any other member of the SAP Group.

11. ASSIGNMENT. Licensee may not, without SAP's prior written consent, assign, novate, delegate, pledge, subcontract or otherwise transfer this Agreement, or any of its rights or obligations under this Agreement, or the SAP Materials or SAP Confidential Information, to any party, whether voluntarily or by operation of law, including by way of sale of assets, merger or consolidation. SAP may assign, novate, delegate, pledge, subcontract or otherwise transfer this Agreement or any of its rights or obligations thereunder (in whole or in part) to any member of the SAP Group. SAP and any other member of the SAP Group may use third parties as sub-contractors for fulfilling any of its rights or obligations under this Agreement. SAP will continue to be liable for such obligations.

12. GENERAL PROVISIONS.

12.1 Retention of data. With regard to business transactions covered by this Agreement, End User must retain any records for a period of ten years starting on 1th of January of the year following the year during which the data were transmitted or otherwise transferred, or for the minimum period prescribed by applicable law, whichever is longer. In addition, Licensee must maintain current, complete and accurate reports on all of SAP's Confidential Information in its possession or in the possession of its representatives.

12.2 Severability. It is the intent of the parties that in case any one or more of the provisions contained in this Agreement shall be held to be wholly or in part illegal, invalid or unenforceable in any respect, such illegality, invalidity or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid or unenforceable provision had never been contained herein. The illegal, invalid or unenforceable provision will be replaced by a valid and enforceable provision which approximates as closely as possible the intent of the invalid or unenforceable provision. This will also apply in the case of contractual gaps.

12.3 No Waiver. If either Party should waive any breach of any provision of this Agreement, it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision hereof.

12.4 Counterparts. This Agreement may be signed in one or more counterparts, each of which will be considered an original but all of which together form one and the same instrument and will be treated as if the signatures on the counterparts were on a single copy. This Agreement may be validly executed by means of transmission of signed facsimile, pdf or any other documented form for which a process has been provided by SAP. Signatures sent by fax, pdf, email or other electronic means for which a process has been provided by SAP shall be deemed original signatures.

12.5 Regulatory Matters. The Software, SAP Delivered Support, Documentation and SAP Materials as well as parts of any of these (e.g. new versions, releases, updates, upgrades, patches, fixed or correction of a software product) are subject to Export Laws of various countries, including, without limitation, the laws of the United States, the EU, Ireland and Germany. Licensee agrees that it will not submit the Software, SAP Delivered Support, Documentation or other SAP Materials or parts of any of these to any government agency for licensing consideration or other regulatory approval without the prior written consent of SAP, and that it will not export, re-export or import any Software, SAP Delivered Support, Documentation and/or SAP Materials to countries, persons or entities prohibited by any applicable Export Law. In that context, Licensee is responsible for complying with all applicable Export Laws. If SAP or any other member of the SAP Group wants to deliver and/or grant access to Software, SAP Delivered Support, Documentation other SAP Materials, or parts of any of these directly to a Licensee, Licensee will support SAP and any other member of the SAP Group in obtaining any required authorization, approval or other consent from the competent authorities by providing any necessary or useful declarations or other necessary or useful information, e.g. Licensee certificates, as may be requested by SAP or any other member of the SAP Group. Licensee acknowledges that the delivery of and/or granting of access to Software, SAP Delivered Support, Documentation and SAP Materials as well as parts of any of these may be subject to the prior obtaining of export or import authorizations or both from the competent authorities and that this process may (i) considerably delay or prevent the delivery of and/or granting of access to Software, SAP Delivered Support, Documentation and SAP Materials or part of any of these, (ii) impact SAP's ability or the ability of any other member of the SAP Group to provide SAP Delivered Support or other services and

(iii) lead to SAP or any other member of the SAP Group having to limit, suspend or terminate Licensee's access to SAP Delivered Support services or other services.

Neither SAP nor any other member of the SAP Group assumes any responsibility or liability:

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b) if any required authorization, approval or other consent for the delivery of and/or granting of access to Software, SAP Delivered Support, Documentation and SAP Materials or parts of any of these cannot be obtained from the competent authorities;

c) if the delivery of and/or granting of access to Software, SAP Delivered Support, Documentation and SAP Materials or parts of any of these is prevented due to applicable Export Laws; and

d) if access to SAP Delivered Support or other services has to be limited, suspended or terminated due to applicable Export Law.

SAP may terminate this Agreement and the license granted hereunder with thirty days' prior written notice if SAP or any relevant member of the SAP Group may not deliver or grant access to Software, SAP Delivered Support, Documentation and SAP Materials to Licensee due to an embargo or other comparable trade sanction, which is expected to be in place for six months or longer.

12.6 Governing Law; Limitations Period. This Agreement and any claims (including any non-contractual claims) arising out of or in connection with this Agreement are governed by the laws of Thailand to the exclusion of the international law of conflicts and the UN Sales Convention. The exclusive place of jurisdiction for all disputes arising out of or in connection with this Agreement (including any dispute regarding the existence, validity or termination of this Agreement) is Bangkok, Thailand . Licensee must initiate a cause of action for any claim(s) arising out of or relating to this Agreement and its subject matter within one (1) year from the date when Licensee knew, or should have known after reasonable investigation, of the facts giving rise to the claim(s).

12.7 Notices. All notices or reports which are required or may be given pursuant to this Agreement shall be in writing and shall be deemed duly given when delivered to the respective executive offices of SAP and Licensee at the addresses first set forth in the EULA Acceptance Form. Where in this Section 12.6 or elsewhere in this Agreement a written form is required, except for any notice of termination or notice of a material breach which shall occur by exchange of letter(s), that requirement can be met by facsimile transmission, exchange of letters or other written form, including email or other electronic means for which a process has been provided by SAP.

12.8 Force Majeure. Any delay or nonperformance of any provision of this Agreement (other than for the payment of amounts due hereunder) caused by conditions beyond the reasonable control of the performing party shall not constitute a breach of this Agreement, and the time for performance of such provision, if any, shall be deemed to be extended for a period equal to the duration of the conditions preventing performance.

12.9 Entire Agreement. This Agreement constitutes the complete and exclusive statement of the agreement between SAP and Licensee, and all previous representations, discussions, and writings are merged in, and superseded by this Agreement and the Parties disclaim any reliance on any such representations, discussions and writings. This Agreement shall prevail over any additional, conflicting, or inconsistent terms and conditions which may appear on any purchase order or other document furnished by Licensee to SAP. This Agreement shall prevail over any additional, conflicting or inconsistent terms and conditions which may appear in any clickwrap end user agreement included in the Software. This Agreement does not create any partnership, joint venture or principal-and-agent relationship.

12.10 Amendments. Any modification, amendment or supplement to this Agreement (including this Section 12.10 (Amendments) must be made in writing or in any other documented form for which a process has been provided by SAP.

12.11 Effective Date. If a Party signs a part of this Agreement but fails to date its signature, the date that the other Party receives the signing Party's signature will be deemed to be the date on that the signing Party signed that part of the Agreement.

12.12 WAIVER OF JURY TRIAL. EACH PARTY HEREBY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LITIGATION COMMENCED UNDER OR IN CONNECTION TO THIS AGREEMENT.

12.13 Hierarchy. The following order of precedence shall be applied in the event of conflict or inconsistency between provisions of the components of this Agreement: (i) the EULA Acceptance Form; (ii) the EULA; (iii) the Software Use Right Schedule except with respect to third party pass-through terms for Third Party Software stated in the Software Use Rights Schedule, in which case the Software Use Rights Schedule shall prevail over any conflict or inconsistency in any component of this EULA solely with respect to such third party pass-through terms.

12.14 Survival. Sections 6.1 (Reservation of Rights), 6.2 (Protection of Rights), 7 (Performance Warranty), 8 (Third Party Claims), 9 (Limitations of Liability), 10 (Confidentiality), 12.1 (Retention of data), 12.2 (Severability), **Error! Reference source not found.** (Governing Law; Limitations Period), 12.12 (Waiver of Jury Trial) shall survive any termination of this Agreement.

(http://apache.org/foundation/contributing.html)

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Version 2.0, January 2004

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Usage Policy

This is the Usage Policy referred to in your legal agreement with Smart Communications and contains the limitations on your use of the Services and the consequences of exceeding those limitations. It covers the following Solutions: Smart Correspond for Salesforce and Smart Communications. Defined terms used in this policy shall have the meaning ascribed to them in the relevant legal agreement. This Usage Policy does NOT apply to those legal agreements to which a Usage Policy is attached as a schedule.

Limitations & Overages:

1.1 Page Allowance

Page Allowance – Customer's Page Allowance is calculated by multiplying the total number of Users or Volume Packs, for each solution/edition, as stated in the Order by the Page Allowance per User or Volume Pack, for the relevant solution/edition, as set out in the table below.

Overages – If the Page Allowance is exceeded, but without sufficient additional volume having been purchased in advance of exceeding the Page Allowance, Smart Communications reserve the right to charge Overage at the rate specified by Smart Communications from time to time.

Page Types	Allowance	
On-Demand Pages	2500	per Volume Pack / month
Correspond Pages	1250	per User / month
Collaborative Pages	250	per User / month

Solution	**On-Demand Pages**	**Correspond Pages**	**Collaborate Pages**	
	Standard	2500	0	0

Smart Correspond for Salesforce				
	Professional	0	1250	0
	Advanced	0	1250	250
Smart Collaborate for Salesforce	na	0	1250	250
Smart Communicate	Standard	2500	0	0
	Professional	0	1250	0
	Advanced	0	1250	0
Smart Collaborate	na	0	1250	250

1.2. PCPGR Limit

PCPGR limit – for On-Demand Pages as specified in the Order, for all other cases as 5% of aggregate Users.

Overages – If the PCPGR limit is exceeded, but without additional PCPGR having been purchased in advance of exceeding the amount of PCPGR, Smart Communications reserves the right to charge Overages at a rate specified by Smart Communications from time to time.

1.3. PCUR Limit

The PCUR limit is calculated as 10% of aggregate Users for Smart Communicate and 20% of the aggregate Users who have access to the Collaborate feature.

Overages – If the PCUR limit is exceeded, but without additional PCUR having been purchased in advance of exceeding the amount of PCUR, Smart Communications reserves the right to charge Overages at a rate specified by Smart Communications from time to time the current rates being set out in the Order.

1.4. Through Put –Limits

Maximum Through Put isthe number of Pages generated in:

- 24hrs being no more than 15% of the Page Allowance
- 1hr being no more than 3% of the Page Allowance
- 1minute being no more than 0.1% of the Page Allowance

Overages – In the event of Through-Put being exceeded Smart Communications reserves the right to temporarily suspend Customer's access to the Services for the relevant period.

1.5. The number of Users will be as specified in the relevant Order.

Additional Users – Additional Users can be purchased in advance of exceeding the number specified in an Order by the payment of additional Annual Fees at the rate specified by Smart Communications from time to time.

Overages – If the User limit is exceeded where additional Users have not been purchased, Smart Communications reserve the right to suspend access in respect of the unauthorized Users.

1.6. Storage Space Allowance

Storage Space Allowance–In respect of each Tenancy: 1Gb for each Solution which has a collaborative feature and 500MB for each Solution which does not have a collaborative feature.

Overages – If the Storage Space is exceeded but without additional capacity being purchased in advance of exceeding the limit, Smart Communications reserves the right to charge Overage at the rate specified by Smart Communications from time to time.

1.7. Collaborative Page View Allowance

Collaborative Page View allowance is 20 times the Collaborative Page allowance.

Overages – In the event of Collaborate Page View being exceeded Smart Communications reserves the right to temporarily suspend Customer's access to the Services for the relevant period.

1.8. Collaborative Page Save Allowance

Collaborative Page Save allowance is 10 times the Collaborative Page allowance.

Overages – In the event of Collaborate Page Save being exceeded Smart Communications reserves the right to temporarily suspend Customer's access to the Services for the relevant period.

1.9. Non finalized Collaborative Pages

Non finalized Collaborate Pages, are the total number of Collaborative Pages that are or have been collaborated upon but not finalized.

At the end of each 12 month period during the License Term, non finalized Collaborate Pages will be deemed finalized for the purpose of calculating whether the total number of Collaborative Pages are within the Page Allowance for Collaborative Pages.

Monitoring and Enforcement

1. If, in Smart Communications' reasonable opinion, Customer has exceeded the limitations set out in this Usage Policy, Smart Communications will contact Customer by appropriate means (such as email or telephone) and advise Customer that its usage is outside of the Usage Policy. Smart Communications will then, subject to paragraph C below, apply the remedy specified above which will be either the charging of Overages or temporary suspension as the case may be.
2. If the Customer persistently (meaning on two or more occasions in a calendar month) exceeds the limitations set out in this Usage Policy or otherwise uses the Services in a way which adversely affects Smart Communications Services/systems and/or other users Smart Communications shall in good faith attempt to renegotiate the Annual Fees with the Customer to reflect such use of the Services and if such renegotiations fail Smart Communications may treat such use as an irremediable breach entitling Smart Communications to terminate your legal agreement.

Prohibitions

1. If at any time Customer contravenes any of the prohibitions on usage listed in your legal agreement Smart Communications may treat such contravention as an irremediable breach entitling Smart Communications to terminate your legal agreement.

SoapUI End User License Agreement

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- The Work: the Original Work and/or its Derivative Works.
- The Source Code: the human-readable form of the Work which is the most convenient for people to study and modify.
- The Executable Code: any code which has generally been compiled and which is meant to be interpreted by a computer as a program.
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Address Matching System Application Program Interface (AMS API) Product

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8.0 **DPV.** The DPV Product is incorporated into the AMS API Product to identify whether a ZIP + 4 coded address is currently represented in the USPS delivery point file as a known address record. The CASS Certified™ AMS API Product matches and standardizes addresses within a range of valid addresses. The DPV system ensures ZIP + 4 codes will be assigned only when the primary number of the address can be validated using the DPV Product, and whether the input address reflects any applicable municipality address conversions. Utilization of the DPV system will allow users to confirm valid known USPS addresses as well as identify potential addressing issues that may cause problems with delivery. Correcting potential addressing issues can reduce the amount of undeliverable-as-addressed (UAA) pieces, which in turn will result in more efficient mail processing and delivery. All requirements and specifications are specified within the most current version of Exhibit E of this Agreement.

8.1 **LACS^{Link}.** The LACS^{Link} Product is incorporated into the AMS API Product and identifies whether an input address reflects any applicable municipality address conversions. The LACS^{Link} system is a tool for communicating changes in a location's delivery address. Such changes most commonly arise from implementation of 911 emergency systems, which normally involves changing rural-style addresses to city-style addresses or in renaming or renumbering existing city-style addresses. Correcting potential addressing issues can reduce the amount of undeliverable-as-addressed (UAA) pieces, which in turn

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8.2 **RDI.** The RDI Product works in conjunction with the AMS API Product to identify whether a ZIP + 4 coded address is classified as residential or business in the USPS Address Management System (AMS) database. Utilization of the RDI system will allow users to identify non-business delivery addresses. All requirements and specifications are specified within the most current version of Exhibit G of this Agreement.

The interface for the RDI Product can be developed by purchasing the RDI Developer's Kit. The RDI Product data may only be obtained by completing the Address Information Systems (AIS) Products Order Form and returning the form to the USPS.

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A. That the Licensee has properly executed and maintained current all licenses associated with this License Agreement and has paid all fees required under this Agreement prior to using the Licensed Materials or selling and/or distributing Licensee's Product.

B. That the Licensee shall not encourage or permit, to the knowledge of the Licensee, unauthorized use or duplication of the Licensed Materials, except where it has been previously authorized by Licensee's acquisition of sufficient licenses so as to permit such occurrences to exist.

C. That the Licensee shall adopt and enforce all security and "expiration date" logic in all products used internally, services offered to Licensee's End Users or in Licensee's Product which accesses the Licensed Materials.

D. That Licensee's Product shall include the provision for updating the Licensed Materials provided by Licensor as required by its intended use. That Licensee's Product shall not obligate the Licensor to provide the Licensed Materials for a period in excess of one (1) year.

E. That the Licensee shall make provisions with all its End Users to whom Licensed Materials are supplied, to protect the security and unique value of the Licensed Materials.

i. Security Procedures. At all times, the Licensee shall maintain (a) appropriate security controls to restrict access to the hardware, software (including the server and workstations), and data used in connection with the service or process and to ensure a secure environment for maintaining that hardware, software, and data, (b) personnel and management policies sufficient to provide reasonable assurance of the trustworthiness and competence of its employees and the satisfactory performance of their duties and in accordance with all applicable laws, rules and regulations, and (c) appropriate computer and network security controls, including the use of reasonable security procedures which are sufficient to ensure that documents, notices and other information specified in this Agreement that are electronically created, communicated, processed, stored, retained, or retrieved are authentic, accurate, reliable, complete, and confidential, and that business records and data are protected from improper access.

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F. That the Licensee shall not make, nor allow, any attempt to restructure or reverse engineer any component, process, or function of the Licensed Materials for any purpose.

13.0 Multiple Users Rights. Licensee is authorized to transfer the Licensed Materials from electronic media to other media as may be desired for the purpose of accommodating access by multiple users, provided such transfer provides access only to the number of users for which Licensee has paid and does not violate any other license restrictions or use restrictions on the number of active copies of files that Licensee may use or that may exist at a single time. This includes transfer of the Licensed Materials to network file servers or other central system server devices.

A. Licensor authorizes Licensee to use the Licensed Materials on remote multi-user access (network/Internet, dial-up, peer to peer, etc.) file servers or other system server devices ("Multi-user Access Devices") , regardless of the number of concurrent users that access the Multi-User Access Devices, so long as Licensee permits use of only a single copy of the Licensed Materials authorized under this Agreement through the payment of appropriate fees to be in use at any one time and all fees associated with this agreement have been collected prior to user access.

14.0 Quality Control. The Licensee shall implement reasonable quality control procedures to assure faithful transfer of the Licensed Materials from electronic media to another media upon which the Licensed Materials will operate, in accordance with the Multiple User Rights provision.

15.0 Ordering Of Electronic Media. All ordering and requisition documents to obtain copies of the electronic media require a minimum of fifteen (15) days processing by Licensor. Licensee shall not commit nor expect of Licensor, fulfillment of the Licensed Materials in a lesser time frame than fifteen (15) days.

16.0 CASS Certification. Licensee shall obtain, maintain and comply with CASS™ certification requirements established by the United States Postal Service prior to either using internally or in offering for sale to its End Users, any Licensee Product which incorporates the Licensed Materials that is intended to qualify mail for discounts in postage rates.

16.1 Licensee shall take all necessary steps to insure that the Licensee Product is designed with maximum safeguards to restrict modifications by its End Users of any aspect regarding the use or operation of the Licensed Materials. This shall include the restriction of End Users' ability to modify or alter any documents produced by the Licensee's Product that are intended for use in qualifying mail for postage discounts.

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17.0 Trademarks And Copyright Notices. Licensee shall include the following copy with each release or revision of documentation (both hardcopy and electronic formats), which accompanies Licensee's Product as supplied by Licensee that incorporates Licensed Materials belonging to Licensor:

A. Each copy shall be distributed with suitable introductory material provided by Licensor relating to the use of ZIP Code™ and ZIP + 4 information.

B. Licensor's trademarks used in and on each edition shall be so identified in a distinct manner: "The following are trademarks belonging to the United States Postal Service: United States Postal Service® , Postal Service™, Post Office™, United States Post Office®, the Eagle logo, ZIP + 4®, CASS™, CASS Certified™ , DPV®, eLOT®, RDI™, LACSLink®, SuiteLink®. This list is not exhaustive of all the trademarks belonging to the Postal Service™."

C. Each copy shall contain Licensor's copyright notice on the page following the Licensee's Operating Manual/User Guide title page and on media (DVD, diskette, etc.) labels in the following form: "© <insert year of software as provided by the copyright notice on the product furnished by Licensor> United States Postal Service."

D. The page following the title page of each Licensee's Operating Manual/User Guide and as an insert with each media (DVD, diskette, etc.) edition, shall contain a prominent notice furnishing the following information:

i. That the information was published by the company which holds a non-exclusive license from the United States Postal Service to incorporate Licensed Materials of the United States Postal Service as part of Licensee's Product.

ii. That the price of Licensee's Product is neither established, controlled or approved by the United States Postal Service.

iii. If Licensee's Product contains commercial advertising by the Licensee or others, a statement that such advertising is neither approved nor endorsed by the United States Postal Service.

iv. That use of Licensee's Product constitutes acceptance of articles defined in section 9.

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18.0 Confidential and Proprietary Information. Due to the sensitive nature of the confidential and proprietary information contained in the Licensed Materials, Licensee acknowledges that unauthorized use and/or disclosure of Licensed Materials will irreparably harm the Licensors right to control its intellectual property. Accordingly, Licensee (a) agrees to reimburse Licensor for any unauthorized use and/or disclosure at a rate of treble (3 times) the current annual fee charged to Licensee under this Agreement or treble the average total revenue Licensee obtained through its use of the Licensed Materials, whichever amount is greater, and (b) consents to such injunctive, equitable or other monetary relief as a court of competent jurisdiction may deem proper.

19.0 Advertising. The following specific provisions shall apply to Licensee's advertising of Licensee's Product containing the Licensed Materials. These provisions are not exclusive, and Licensor may impose additional requirements which, in its sole discretion, it finds necessary.

A. The words "Non-exclusive licensee of the United States Postal Service" shall appear once, and not more than once in each advertisement of Licensee's Product that contain Licensor's Licensed Materials.

B. Each use in an advertisement of a trademark owned by Licensor must be accompanied by an acknowledgment of Licensor's ownership in the following form: "The following trademarks are owned by the United States Postal Service®: [insert marks here].".

C. Licensee shall not use all or any portion of any trademark owned by Licensor without prior authorization and a license by Licensor, including but not limited to use of a USPS trademark in any business or trade name, or otherwise suggest by such name any association with Licensor or the United States Postal Service and associated government entities.

D. Licensee shall not employ in its advertising or in-person marketing any language, mode of dress, or other representation or sales technique from which a prospective purchaser might infer that Licensee or its agent is an employee or representative of Licensor.

E. Licensee's advertising shall direct that all payment for Licensee's Product shall be made payable to Licensee's trade name.

F. Licensee's advertising shall clearly state that the price at which Licensee's Product is sold by Licensee is neither established, controlled or approved by the United States Postal Service.

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20.0 Approval Of Advertising And Method Of Sale. To ensure that prospective purchasers are not misled by any aspect of the advertising and method of sale used by Licensee to sell Licensee's Product, and specifically to ensure that the relationship between the Licensee and the Licensor is correctly represented, Licensor shall review Licensee's proposed methods of sale, proposed advertising and any proposed use of the Licensed Marks by Licensee. For the purpose of this paragraph, advertising means Licensee's public disclosures concerning a product, including but not limited to proposed copy for news releases, radio, television, World Wide Web, magazine and newspaper advertising, and direct mail solicitations. Licensee shall not publish or distribute any advertising or engage in any method of sale of Licensee's Product unless approved by the Licensor. The granting or withholding of approval shall be at the sole discretion of the Licensor. Licensor shall within fifteen (15) days of receipt of proposed advertising or a proposed method of sale, approve in writing or provide a written statement of the reasons for disapproval and, at its discretion, a statement of the changes necessary for approval. Licensor's failure to respond within fifteen (15) days shall be deemed disapproval of Licensee's proposal.

21.0 Term Of Agreement. The term of this agreement shall be from the date of execution and continue until the end of the current subscription year.

22.0 Renewal Of Agreement. Prior to the annual subscription year expiration, Licensor shall provide Licensee a renewal package, which may include Agreement Exhibits, signature forms, order forms, etc.

23.0 Cancellation By Licensor. Notwithstanding the term established herein, Licensor may cancel this agreement upon one (1) year written notice to Licensee by Licensor. Upon receipt of a written notice of cancellation, Licensee shall immediately modify its product offering to reflect the fact that its use of the Licensed Materials will expire upon the cancellation effective date.

23.1 In the event that the cancellation effective date specified is not coincidental with the current term of this Agreement, Licensor shall allow the continued use of the Licensed Materials through the cancellation effective date. Licensee shall be liable to pay all fees specified herein on a pro-rated basis for the time period between the end of the term of the current agreement and the cancellation effective date specified by Licensor, should Licensee elect to continue past the end of the subscription year until the cancellation effective date.

23.2 Licensor shall continue to supply Licensee with sufficient quantities of electronic media to allow Licensee to fulfill any outstanding obligations to its End Users through the cancellation effective date. Licensee shall remain obligated to pay Licensor all fees associated with this Agreement

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that were in effect prior to the notice of cancellation. Under no circumstances shall Licensor be obligated to provide electronic media to Licensee for its use or for its subsequent provision to its End Users for a period in excess of one (1) year from the date Licensor notifies Licensee of its intent to cancel this Agreement through this provision.

24.0 Cancellation By Licensee. Notwithstanding the term established herein, Licensee may cancel this agreement upon ninety (90) days written notice to Licensor. Licensee and its End Users shall remain bound by all terms and provisions of this agreement through the cancellation effective date. Licensor will retain all fees paid to Licensor under this agreement without reimbursement. All fees for electronic media duplication fees ordered prior to the cancellation effective date shall be due and payable in advance after Licensee notifies Licensor of its intent to cancel this agreement. Licensor shall have no obligation to provide electronic media to Licensee after the date Licensee specifies as the cancellation effective date.

25.0 Termination For Cause. If the Licensee or any of its End Users at any time during the term of this Agreement shall fail to comply with or fulfill any of the terms or conditions thereof, Licensor may, at its discretion, terminate this agreement for cause by sending Licensee a notice of termination. The notice shall state the reasons for the termination and shall provide Licensee with a period of ninety (90) days to cure all defects and avoid termination. Said termination shall be without liability to the Licensor. Licensor shall not be obligated to continue to provide the Licensed Materials to Licensee for its own use or for its subsequent provision to any or all of its End Users if this Agreement is terminated for cause.

26.0 Cancellation/Termination Obligations. Pursuant to Sections 23, 24 and 25, upon cancellation and/or termination of License Agreement by either Licensor, Licensee and/or termination for cause, Licensee and its End Users shall, upon the termination date, cease all usage, advertising, selling, and fulfillment of orders that include any Licensed Materials or Licensed Marks belonging to Licensor. Fees received for orders not yet filled as of the termination date shall be refunded to the purchaser within six (6) to eight (8) weeks of receipt of said fees. Licensee shall immediately destroy and/or deliver to Licensor the Licensed Materials along with all whole or partial copies thereof and deliver to Licensor a written statement signed by an officer of the Licensee confirming the removal of the above items.

27.0 Suspension For Cause. If the Licensee or its sublicensee at any time during the term of this Agreement shall fail to comply with or fulfill any of the terms or conditions thereof, Licensor may, at its discretion, suspend for cause the Licensee's or its End User's right to use the Licensed Materials or the Licensed Marks by sending Licensee a notice of suspension. The notice shall state the reasons for the suspension and shall provide Licensee with a period of ninety (90) days to cease the named activities

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until the Licensee or its End Users make the necessary corrections and the Licensor verifies the corrections. Upon receipt of the suspension notice, Licensee or its End User shall immediately cease all named activities until authorized in writing by Licensor that the activities may be resumed. Said suspensions shall be without liability to the Licensor. Licensor shall not be obligated to continue to provide the Licensed Materials to Licensee for its own use or for its subsequent provision to any one or all of its End Users, nor shall Licensor be obligated to reimburse any fees associated with this Agreement, if this Agreement is suspended for cause. If necessary action has not been completed at the end of ninety (90) days, the Licensor shall terminate this Agreement.

28.0 **Modification**. The Licensor may modify the terms of this agreement with ninety (90) days written notice to Licensee.

29.0 **Indemnity.** Licensor agrees to indemnify the Licensee and its End Users for any claims of infringement by a third party of any U.S. copyright, trademark, or service mark owned by Licensor and used by Licensee or its End User pursuant to this agreement.

30.0 **Compliance With Regulation.** Licensee and its End Users shall comply with all United States Postal Service regulations governing the publication and distribution of Licensed Materials by Licensee.

31.0 **Assignment Prohibited.** Neither this agreement nor any license granted hereunder may be assigned voluntarily or by operation of law.

32.0 **Limited Warranty.** Licensor offers a Limited Warranty covering the Licensed Materials or any accompanying written materials to the original Licensee in the following areas:

A. That the Licensed Materials provided by Licensor for the purpose of interfacing with Licensee's product will not change in the form, fit or function without a minimum of thirty (30) days advance notice in writing to Licensee.

B. That the Licensed Materials provided will be CASS Certified™ according to the current United States Postal Service rules in effect at the time of release or issue. This provision does not guarantee that Licensee will be capable of obtaining CASS Certification through use of the Licensed Materials, only that the Licensor will possess the required CASS Certification prior to issuance of the Licensed Materials.

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C. That the Licensed Materials provided on each release will be current according to the current DMM® requirements.

D. That the electronic media should be returned to the Licensor within thirty (30) days if it does not meet the above conditions.

Some States do not allow limitations or a Limited Warranty, so the above limitations may not apply to you.

33.0 Disclaimer Of Warranty. The Licensor makes no warranty or representation regarding the Licensed Materials suitability, merchantability or fitness for purpose, and specifically disclaims any implied warranties of the Licensed Material's suitability, merchantability or fitness for any purpose.

34.0 Licensor Liability. The Licensor's entire liability and Licensee's exclusive remedy shall be, at Licensor's option, either (a) return of the purchase price or (b) replacement of the Licensed Materials that does not meet the Licensor's Limited Warranty and which is returned to Licensor. If failure of the Licensed Materials has resulted from accident, abuse, or misuse, Licensor shall have no responsibility to replace the Licensed Materials or refund the purchase price. Any replacement will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is greater. Under no circumstances shall Licensor be liable for any incidental, consequential, or other similar damages resulting from the use or operation of the Licensed Materials.

35.0 Force Majeure. Licensor shall not be liable for any failure, delay or default, to provide Licensed Materials due to natural disasters, labor difficulties, military or police actions, computer failures or any other cause that is beyond the reasonable control of the Licensor.

36.0 Restrictions. No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom; but this prohibition shall not be construed to extend to this agreement if made with a corporation for its general benefit.

37.0 No Commission, Percentage, Brokerage or Contingent Fee by Licensee. Licensee warrants that no person or selling agency has been employed or retained to solicit or secure this agreement, upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employee or bona fide established commercial or selling agencies maintained by Licensee for the purpose of securing business. For breach or violation of this warranty, the United States Postal Service shall have the right to annul this agreement without liability or in its discretion, to recover the full amount of such commission percentage, brokerage or contingent fee.

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38.0 Integration. This agreement contains the entire understanding of the parties. There are no representations, warranties, promises, covenants, or understandings other than those expressly set forth herein.

39.0 Modifications in Writing. No waiver, alteration, or modification of any of the provisions shall be binding unless in writing and signed by a duly authorized representative of Licensor.

40.0 Severability. If any term, provision, or condition of this agreement is held by a court of competent jurisdiction or by a request, direction, or indication of an agency or department of a Governmental Body having subject matter jurisdiction to be invalid or unenforceable, the remainder of the provisions of this instrument shall continue in full force and effect unless the rights and obligations of the parties have been materially altered or abridged by such invalidation or unenforceability.
If a material provision of this agreement is materially altered or abridged as a result of an order, request, or direction of a Governmental Body having subject matter jurisdiction, then the parties will meet to negotiate in good faith a mutually satisfactory modification to this agreement based on such material change.

41.0 Jurisdiction and Venue. The Parties acknowledge and agree that any action taken with respect to claims filed in court, whether at law or equity, shall be brought, if possible, in the District of Columbia.

42.0 Choice of Law. This Agreement shall be governed by and construed in accordance with principles of federal law. Further, the parties each agree and acknowledge that the provisions of USPS Purchasing Manual shall not apply to this Agreement, and the parties waive any and all express and implied remedies, recourse or administrative procedures provided or created thereby.

43.0 Audit/Inspection Rights. To the extent reasonably necessary to ensure Licensee's use of the Licensed Marks and Licensed Materials in compliance with the terms of this Agreement, Licensor, through its employees or agents and at its own expense, may inspect and audit the premises, operations, books, and records of Licensee upon (ten) 10 days written notice to Licensee. Licensee shall provide Licensor or its agent's access during normal business hours to the premises, books, and records that relate to Licensee's use of the Licensed Materials and the Licensed Marks. Books and records that relate to Licensee's Materials and the Licensed Marks shall be retained in accordance with Licensee's retention guidelines, but for no less than two (2) years from such performance or use. Notwithstanding the foregoing, Licensor may inspect, at any time, the Licensee's use of the Licensed Marks on Licensee's Web site.

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44.0 Notices. All notices or other communications required or desired to be sent to either party shall be in writing.

45.0 Centralized Email Address. Licensees shall establish a central email address for receipt and disbursement of USPS electronic correspondence within Licensee's organization. All electronic correspondence will be directed to a central email address within the company's organization. The email address must be ncscinfo@<yourcompany.com>. In the event that this address is already assigned for some other purpose, an alternate address must be submitted to USPS for approval. Licensee will subsequently distribute all applicable USPS notifications internally to ensure receipt by the proper staff. Such correspondence will also be sent to the pertinent contacts provided during the application process; however in the event of "bounce backs" successful delivery via the central address will be considered confirmation of receipt.

46.0 Relations of the Parties. This Agreement does not create a partnership or joint venture between the parties and Licensee shall have no power to obligate or bind Licensor in any manner whatsoever.

47.0 Dispute Resolution. If a dispute arises out of or relates to (1) this Agreement or (2) any agreements between the Parties related to or issued under this Agreement or (3) any actions in breach of any such agreement, the Parties agree to endeavor to settle the dispute in an amicable manner. Efforts shall first be made to settle the dispute through direct discussion among the personnel directly involved with the implementation of the terms of the Agreement in dispute. If not able to resolve the dispute within thirty (30) days, the Licensor manager(s) and the Licensee manager(s) involved shall attempt to resolve the dispute.

If any portion of the dispute remains unresolved, then the dispute shall be mediated through the American Arbitration Association pursuant to its Commercial Mediation Rules. Any such proceedings shall be held in Washington, D.C. Thereafter, any unresolved controversy or claim arising out of or relating to this Agreement, or the breach thereof, may be filed in accordance with Section 40.

48.0 Captions. The captions used in connection with the paragraphs and subparagraphs of this Agreement are inserted only for reference purposes. They shall not be deemed to govern, limit, modify or in any other manner affect the scope, meaning or intent of the provisions of this Agreement or any part of it nor shall such captions otherwise be given any legal affect.

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49.0 Waiver.

A. No waiver by either party of a breach or a default of this Agreement shall be deemed a waiver by such party of a subsequent breach or default of a like or similar nature.

B. Resort by Licensor to any remedies referred to in this Agreement or arising by reason of a breach of this Agreement by Licensee shall not be construed as a waiver by Licensor of its right to resort to any and all other legal and equitable remedies available to Licensor.

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Exhibit A: Product Fees and Descriptions

The fees specified are for an annual subscription. Fees are assessed annually and are subject to change (see section 7.0 of the AMS API License Agreement).

An Address Matching System Application Program Interface (AMS API) User Guides and electronic media will be provided upon receipt of fees and a copy of all signed License Agreement forms. Release notes with any changes to the electronic media will be included on the yearly beta disc.

Product Fees

Product	**Fee**
AMS API, DPV®, LACS$^{Link®}$ and Suite^{Link} Resell License	$22,850.00
Additional AMS API Resell License	$11,500.00
AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit	$ 5,200.00
Additional AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit	$ 1,850.00
Additional AMS, DPV, LACS^{Link} and Suite^{Link} ZIP + 4® Database License	See Pricing Table*
RDI Resell License	$ 1,600.00
Additional RDI Resell License	$ 900.00
RDI Developer's Kit	$ 420.00

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Exhibit A: Product Fees and Descriptions (continued)

Address Matching System (AMS) Application Programming Interface (API) Current Pro-rated Fee Schedule

Month Vendor is licensed for product	AMS, DPV®, LACSLink®, & SuiteLink® API Developer's Kit	Additional AMS, DPV, LACSLink, & SuiteLink API Developer's Kit	AMS, DPV, LACSLink, & SuiteLink API Resell License	Additional AMS, DPV, LACSLink, & SuiteLink API Resell License	RDI™ Developer's Kit	Additional RDI Developer's Kit	RDI Resell License	Additional RDI Resell License
September	$5,200.00	$1,850.00	$22,850.00	$11,500.00	$420.00	$420.00	$1,600.00	$900.00
October	4,766.67	1,695.83	20,945.83	10,541.67	385.00	385.00	1,466.67	825.00
November	4,333.34	1,541.66	19,041.66	9,583.34	350.00	350.00	1,333.34	750.00
December	3,900.00	1,387.50	17,137.50	8,625.00	315.00	315.00	1,200.00	675.00
January	3,466.67	1,233.33	15,233.33	7,666.67	280.00	280.00	1,066.67	600.00
February	3,033.34	1,079.16	13,329.16	6,708.34	245.00	245.00	933.34	525.00
March	2,600.00	925.00	11,425.00	5,750.00	210.00	210.00	800.00	450.00
April	2,166.67	770.83	9.520.83	4,791.67	175.00	175.00	666.67	375.00
May	1,733.34	616.66	7,616.66	3,833.34	140.00	140.00	533.34	300.00
June	1,300.00	462.50	5,712.50	2,875.00	105.00	105.00	400.00	225.00
July	866.67	308.33	3,803.33	1,916.67	70.00	70.00	266.67	150.00
August	433.34	154.16	1,904.16	958.34	35.00	35.00	133.34	75.00

For new licensees, initial license fees will be prorated based on the number of full months remaining in the license year.

The fees above are based on the license term year October 1 – September 30.

Exhibit A: Product Fees and Descriptions (continued)

Pricing Table

Additional Licenses	Fees
1 to 100	$2,750.00
101 to 200	$5,600.00
201 to 300	$8,400.00
301 to 400	$11,200.00
401 to 500	$14,050.00
501 to 600	$16,900.00
601 to 700	$19,550.00
701 to 800	$22,550.00
801 to 900	$25,500.00
901 to 1,000	$28,050.00
1,001 to 10,000	$36,350.00
10,001 to 20,000	$44,650.00
20,001 to 30,000	$53,450.00
30,001 to 40,000	$61,850.00

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Exhibit A: Product Descriptions

AMS, DPV, LACS^{Link} and Suite^{Link} API Resell License

This license is needed only if you currently have or will develop a product for commercial resell. The resell license is for one operating platform only and includes Internet usage.

Additional AMS, DPV, LACS^{Link} and Suite^{Link} API Resell License

This license is needed only if you are requesting additional operating platforms for the AMS API Resell License. For example: If the user originally purchased the W32 platform, and later requested the L32 platform, this fee will be required.

AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit

This kit is required to access AMS API, DPV API, LACS^{Link} API and Suite^{Link} API. This kit includes one AMS ZIP + 4 database license, one DPV database license, one LACS^{Link} database license, one Suite^{Link} database license and one operating platform.

Additional AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit

This kit is required when the user requests additional operating platforms for the AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit. For example: If the user originally purchased the W32 platform and later requested the L32 platform, this fee will be required.

Additional AMS, DPV, LACS^{Link} and Suite^{Link} ZIP + 4 Database License

If you are using or selling more than one copy of the AMS ZIP + 4 database files at the same time, you will need to purchase additional ZIP + 4 database licenses. Refer to Exhibit D for a listing of the AMS ZIP + 4 database files. Use the pricing table in Exhibit A to determine the fees to enter on the front of the order form.

RDI API Resell License

This license is needed only if you currently have or will develop a product for commercial resell. The resell license is for one operating platform only and includes Internet usage.

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Exhibit A: Product Descriptions (continued)

Additional RDI API Resell License

This license is needed when the user requests additional operating platforms for the RDI API Resell License. For example: If the user originally purchased the W32 platform, and later requested the L32 platform, this fee will be required.

RDI API Developer's Kit

This kit is required to develop an RDI interface. The contents of this kit will be defined at shipment.

Exhibit B: Operating Platforms

Operating Platforms

Codes	Description
W32	Windows 32-bit (includes 95, 98, and NT)
L32	Linux 32-bit
L64	Linux 64-bit

Exhibit C: Use Restrictions of Address Matching System Files and Directories

The following list of files and directories are contained on the electronic media, upon which the Licensed Materials are supplied, are considered restricted. Only a single copy of these files and directories may be in existence for use at one time. There are no restrictions on the number of files and directories that can be in existence at a time if the files and/or directories are not defined as restricted.

Files/Directories

AMS API	eLOT	DPV
CTYSTATE.DAT	ELTRVFLE.DAT	DPHE.HSA
CTYSTATE.NDX	ELTRVFLE.NDX	DPHE.HSC
ZADRFLE.DAT		DPHE.HSF
ZADRFLE.NDX		LCD.NDX
ZIP5FLE.DAT		LCD
ZIP5FLE.NDX		
ZXREFDTL.DAT		
*DEV_KITS <DIR>		*DEV_KITS <DIR>
W32 <SUBDIR>		W32 <SUBDIR>

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SUN <SUBDIR>	SUN <SUBDIR>
AIX <SUBDIR>	AIX <SUBDIR>
LNX <SUBDIR>	LNX <SUBDIR>
S64 <SUBDIR>	S64 <SUBDIR>

LACS^{Link} API

LLK.HS1	LLK.HS2
LLK.HS3	LLK.HS4
LLK.HS5	LLK.HS6
LLK.HSA	LLK.HSL
LLK_CLN.DAT	LLK_CLN.TXT
LLK_CZP.DAT	LLK_CZP.TXT
LLK_CRD.DAT	LLK_DSC.DAT
LLK_HINT.LST	LLK_LCD
LLK_LEFTRITE.TXT	LLK_LLN.DAT
LLK_NAM.DAT	LLK_PNO.DAT
LLK_RV9.DAT	LLK_RV9.ESD
LLK_RV9.IDX	LLK_SNO.DAT
LLK_STRNAME.TXT	LLK_SUF.DAT
LLK_URBX.LST	LLK_X11
LLKHDR01.DAT	

*****The DEV_KITS directory on the electronic media, upon which the Licensed Material is supplied, contains development kit subdirectories for all operating platforms supported by the USPS. If a user has not obtained the proper licensing for a specific operating platform, then the files in that subdirectory are prohibited from use at all times.

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Exhibit D: Stop Processing in the AMS, DPV, LACS^{Link} and Suite^{Link} API Product

1.0 Terms. For purposes of Exhibit E: Stop Processing in the AMS, DPV, LACS^{Link} and Suite^{Link} API Product , the United States Postal Service is referred to as the Licensor. The Licensee is a corporation/company/partnership/proprietorship using the AMS, DPV, LACS^{Link} and Suite^{Link} API Product to produce internal software or to produce a Product to be distributed to End Users. The Vendor is considered the corporation/company/partnership/proprietorship that produces a Product for internal use or for distribution to End Users.

2.0 Scope. Licensee shall not use the AMS, DPV, LACS^{Link} and Suite^{Link} API technology to artificially compile a list of delivery points not already in Licensee's possession or to create other derivative products based upon information received from or through the AMS, DPV, LACS^{Link} and Suite^{Link} API product technology.

2.1 Any sublicense of AMS,DPV, LACS^{Link} and Suite^{Link} API and/or any of the rights granted under this Agreement must (a) be in writing, (b) not contain terms that are any less restrictive than the terms of this Agreement, and (c) ensure that all obligations of Licensee's End Users referred to in this Agreement are binding upon Licensee's End Users and inure to the benefit of the Licensor. Upon request of USPS, Licensee shall provide copies of such sublicense agreements to USPS.

2.2 When the End User encounters the "Stop Processing" function they must call their Vendor in order to restore AMS, DPV, LACS^{Link} and Suite^{Link} API processing capability.

2.3 The Vendor shall inform the End User that the processing was halted due to an unauthorized exposure to an apparent artificially created address. The Licensee shall immediately notify the Licensor of the End User's name and address. The Vendor shall design a unique "one time only, restart code" to restore AMS, DPV, LACS^{Link} and Suite^{Link} API processing capability (i.e. cannot be used after the first occurrence to bypass any further "Stop Processing" error codes). The Licensor reserves the right to require the Licensee to suspend an End User's ability to perform AMS, DPV, LACS^{Link} and Suite^{Link} API processing when multiple incidents of artificial address detection occur.

FOR DISPLAY ONLY

2.4 The following statement regarding the Stop Processing function shall be placed into all documentation provided to the End User. The error code definition shall read: "AMS, DPV, LACS^{Link} and Suite^{Link} API processing was terminated due to the detection of what is determined to be an artificially created address. No address beyond this point has been validated and/or processed. In accordance with the Agreement between the Licensor and the Licensee, AMS, DPV, LACS^{Link} and Suite^{Link} API shall be used to validate legitimately obtained addresses only, and shall not be used for the purpose of artificially creating address lists. The written agreement between the Licensee and the End User shall also include this same restriction against using AMS, DPV, LACS^{Link} and Suite^{Link} API to artificially create address lists. Continuing use of AMS, DPV, LACS^{Link} and Suite^{Link} API requires compliance with all terms of the Agreement. If you believe this address was identified in error, please contact your Vendor."

2.5 Licensee shall pay Licensor a per copy fee, for each media provided by Licensor to Licensee. The method of payment of this fee shall be subject to the manner in which the Licensed Materials are intended for use, as specified below.

A. For use of the electronic media in Licensee's Internal Software, Licensee shall pay this fee at the time that it requires additional electronic media. Included with the annual subscription fee are six (6) bi-monthly releases of the AMS, DPV, LACS^{Link} and Suite^{Link} API electronic media.

B. For use of electronic media in Licensee's Product for End User's, Licensee shall pay this fee at the time that it requires additional electronic media. Included with the annual subscription fee are six (6) bi-monthly releases of the AMS, DPV, LACS^{Link} and Suite^{Link} API electronic media.

3.0 CASS Certification. Licensee shall obtain, maintain and comply with CASS Certification requirements established by the United States Postal Service prior to either using internally or in offering for sale to its End Users, any Licensee Product which incorporates the Licensed Materials that is intended to qualify mail for discounts in postage rates or to certify address information is being matched properly.

FOR DISPLAY ONLY

4.0 **Z4DPV.** End Users may directly access the DPV segment of the CASS process to validate an address through a process called Z4DPV.

A. The Z4DPV process includes probing the DPV tables using the parsed component of an address.

B. The output from the Z4DPV process does not meet CASS requirements. The Z4DPV process works in a call center type environment.

C. When processing in Z4DPV mode, Stop Processing and False Positive reporting are still applicable and the appropriate actions must continue to be followed.

Exhibit F: Suite^{Link} AMS API Product

1.0 **Terms.** For purposes of Exhibit F: Suite^{Link} AMS API as referenced in section 8.3 of this Agreement, the United States Postal Service is referred to as the Licensor. The Licensee is a corporation/company/partnership/proprietorship using the AMS, DPV, LACS^{Link} and Suite^{Link} API Product to produce internal software or to produce a Product to be distributed to End Users. The Vendor is considered the corporation/company/partnership/proprietorship that produces a Product for internal use or for distribution to End Users.

2.0 **Scope.** The purpose of the Suite^{Link} Product is to provide mailers with a tool to improve business addresses within a mailing list used for the preparation of mail that will be submitted to the USPS for acceptance and delivery.

2.1 Any sublicense of AMS, DPV, LACS^{Link} and Suite^{Link} API and/or any rights granted under this Agreement must (a) be in writing, (b) not contain any terms that are any less restrictive than the terms of this Agreement, and (c) ensure that all obligations of the Licensee's End Users referred to in this Agreement are binding upon Licensee's End Users and inure the benefit of the Licensor. Upon request of USPS, Licensee shall provide copies of such sublicense agreements to USPS.

3.0 **CASS Certification.** Licensee shall obtain, maintain and comply with CASS certification requirements established by the United States Postal Service prior to either using internally or in offering for sale to its End Users, any Licensee Product which incorporates the Licensed Materials that is intended to qualify mail for discounts in postage rates or to certify address information is being matched properly.

FOR DISPLAY ONLY

Exhibit G: RDI Enabled AMS API Product

1.0 **Terms.** For purposes of Exhibit G: RDI Enabled AMS API Product as referenced in section 8.2 of this Agreement, the United States Postal Service is referred to as the Licensor. The Licensee is a corporation/company/partnership/proprietorship using the RDI Enabled AMS API Product to produce internal software or to produce a Product to be distributed to End Users in accordance with the USPS RDI License Agreement. The Vendor is considered the corporation/company/partnership/proprietorship that produces a Product for internal use or for distribution to End Users.

2.0 **Scope.** Licensee shall not use the RDI product technology to artificially compile a list of delivery points not already in Licensee's possession or to create other derivative products based upon information received from or through the RDI product technology.

2.1 Any sublicense of RDI and/or any of the rights granted under this Agreement must (a) be in writing, (b) not contain terms that are any less restrictive than the terms of this Agreement, and (c) ensure that all obligations of Licensee's End Users referred to in this Agreement are binding upon Licensee's End Users and inure to the benefit of the Licensor. Upon request of USPS, Licensee shall provide copies of such sublicense agreements to USPS.

3.0 **Independent License.** Prior to using RDI internally, Licensee shall enter into a separate agreement with the USPS to facilitate the distribution of the RDI data product to the Licensee.

FOR DISPLAY ONLY

United States Postal Service® AMS, DPV, LACS^{Link} and Suite^{Link} API and eLOT Licensee Acknowledgment of License and Licensor Acceptance Signature Form

IN WITNESS THEREOF, the parties have executed this Agreement effective as of the date signed by USPS :

To be completed by Licensee

Please print the following information.

Name: _____

E-Mail Address: _____

Title: _____

Firm: _____

Address: _____

City / State / ZIP+4: _____

Signature: _____ Date: _____

To be completed by Licensor

This License Agreement between the Licensor and the Licensee is not valid unless completed by a USPS contracting officer or a USPS NCSC Contracting Officer's Representative.

USPS Contracting Officer

Name: JAMES D. WILSON

Title: DIRECTOR, ADDRESSING & GEOSPATIAL TECHNOLOGY

Firm: UNITED STATES POSTAL SERVICE
Address: 225 N HUMPHREYS BLVD STE 501
City / State / ZIP+4: MEMPHIS TN 38188-1001

Signature: _____ Date: _____

FOR DISPLAY ONLY

United States Postal Service® AMS, DPV, LACS^{Link} and Suite^{Link} API Advertising Form

Licensee shall provide Licensor with a brief, but detailed, description of how the Licensee will advertise the AMS, DPV, LACS^{Link} and Suite^{Link} API, RDI API, Information Based Indicia Program (IBIP), Address Matching System ZIP + 4 (AMS ZIP + 4), DPV, LACS^{Link}, Suite^{Link} and RDI database, and/or the eLOT database in their Product. If Licensee will not be advertising their software product, please write NONE and complete the section, "To be completed by Licensee" below.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

To be completed by Licensee

Please print the following information.

Name: _____

E-Mail Address: _____

Title: _____

Firm: _____

Address: _____

City / State / ZIP+4: _____

Signature: _____
(This signature is required and will be compared to the signature received on the original license agreement)

Date: _____

FOR DISPLAY ONLY

United States Postal Service® AMS, DPV, LACS^{Link} and Suite^{Link} API Developer's Kit Customer ID Form

Licensee shall provide Licensor a unique customer ID for access to the API Developer's Kit for use in decrypting modules contained within the Address Matching System Application Program Interface (AMS API). Only the user identified on the signed copy of the license agreement may request unique customer ID assignment.

Unique customer IDs should be at least six (6) characters and less than twenty-four (24) characters in length. Unique customer IDs may contain any ASCII character between decimal 33 and 122. Your unique customer ID will be case sensitive, meaning that a lower case "a" is different than an upper case "A". Because unique customer IDs are case sensitive, please indicate your unique customer ID clearly in the space provided below. The unique customer ID will be assigned to more than one operating system if applicable.

To be completed by Licensee

Please print the following information.

Name: _____

E-Mail Address: _____

Title: _____

Firm: _____

Address: _____

City / State / ZIP+4: _____

Unique Customer ID: _____

Operating System(s): _____

Signature: _____
(This signature is required and will be compared to the signature received on the original license agreement)

Date: _____

To be completed by Licensor

Date Customer ID Received: _____

Date Customer ID Effective: _____

Date Licensee Notified: _____

NCSC Initials: _____

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AMS API Modifications

This Modifications document lists the changes to the current Address Matching System Application Program Interface (AMS API) Product License Agreement.

January 23, 2017

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.

AIS025 (Order Form)

- Updated to reflect new prices.

December 2, 2016

License Agreement

- In Exhibit A, updated the prorated fee schedule to include the fees for October – December.

AIS025 (Order Form)

- Updated page 3 to include the prorated fees for October – December.

May 23, 2016

License Agreement

- On the signature page, updated James D. Wilson's title to 'Director, Addressing & Geospatial Technology.'

January 19, 2016

License Agreement

- Updated Section 2.0 to reflect September 30 as the end of the license term.
- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.

AIS025 (Order Form)

- Updated page 3 to reflect nine-month prorated fees for the current fees, effective January 17, 2016.

December 30, 2015

AIS025 (Order Form)

- Updated page 3 to reflect nine-month prorated fees for the current fee and the fees effective January 17, 2016.

June 2, 2015

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.
- Removed Exhibit C: Options to Purchase AMS Commercial Discs Containing the Licensed Materials. Renumbered Exhibits.

AMS API Modifications

AIS025 (Order Form)

- Updated to reflect new prices.

October 7, 2014

AIS025 (Order Form)

- Removed line items under 'Additional DVD Discs'
- Under 'Product Descriptions – AMS, DPV, LACS^{Link} and Suite^{Link} Developer's Kit' in the last sentence, remove 'and six (6) bimonthly media updates for AMS, DPV, LACS^{Link}, Suite^{Link} API and eLOT (as requested).'
- Removed the section 'Additional Discs'
- Removed the following statement '*Prices listed are for calendar year subscriptions with bimonthly media updates. Bimonthly updates are available for the months listed in* ***bold*** *type.'*

February 13, 2014

License Agreement

- Revised Section 8.2 to state an RDI interface can be developed by purchasing the RDI Developer's Kit.
- In Exhibit A, revised the prorated fee schedule to remove the column 'Additional RDI Developer's Kit.'
- In Exhibit A in the Product Descriptions in the 'RDI Developer's Kit' paragraph, revised to state that the RDI Developer's Kit is required to build the RDI interface.
- In Exhibit A in the Product Descriptions, removed the 'Additional RDI Developer's Kit' paragraph.
- In Exhibit D, remove the heading 'RDI API.'
- In Exhibit G section 3.0, revised to state a separate agreement with the USPS is required to receive the RDI data.

AIS025 (Order Form)

- On page 1 in the line item 'RDI Developer's Kit' added '(One-Time Fee).'
- On page 1, removed the line item 'Additional RDI Developer's Kit.'
- On page 2 under 'Product Descriptions' in the 'RDI Developer's Kit' paragraph, revised the first sentence to state the kit is required to develop an RDI interface.
- On page 3, updated the prorated fee schedule to remove the column 'Additional RDI Developer's Kit.'

January 27, 2014

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.
- In Exhibit B: Operating Platforms, noted USPS will no longer support the AIX, SUN and S64 platforms, effective July 31, 2015.

AIS025 (Order Form)

- Updated the fee structure and prorated fee schedule to reflect new prices.
- On page 2, noted USPS will no longer support the AIX, SUN and S64 platforms, effective July 31, 2015.

June 27, 2013

AMS API Modifications

License Agreement

- In section 8.2, updated description of the RDI Product.
- In Exhibit E section 4.0, updated heading from 'ZPDPV' to 'Z4DPV'
- Removed pages 30 and 31.
- On the Licensee and Licensor Acceptance Signature Page, changed the name of the USPS Contracting Officer's Representative.

January 28, 2013

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.

AIS025 (Order Form)

- Updated the fee structure and prorated fee schedule to reflect new prices.

October 12, 2012

License Agreement

- Updated address of the National Customer Support Center.

January 23, 2012

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.

AIS025 (Order Form)

- Updated the fee structure and prorated fee schedule to reflect new prices.

January 3, 2011

License Agreement

- In Exhibit A, updated the fee structure and prorated fee schedule to reflect new prices.

AIS025 (Order Form)

- Updated the fee structure and prorated fee schedule to reflect new prices.

November 1, 2010

License Agreement

- Throughout document, modified product name to include Suite^{Link} API because the Suite^{Link} data is included in the AMS API Product.
- In section 8.3, added the Suite^{Link} product description.
- In Exhibit A, added Suite^{Link} to product descriptions. Also updated the Pro-rated Fee Schedule to include Suite^{Link}.
- In Exhibit B, changed the operating platform 'LNX' to 'L32 (Linux 32-bit)' and 'L64 (Linux 64-bit).'
- In Exhibit G, added information on the Suite^{Link} AMS API Product.

AIS025 (Order Form)

- Throughout document, modified product name to include Suite^{Link} API because the Suite^{Link} data is included in the AMS API Product.

AMS API Modifications

- On page 1 under 'Ordering', removed the question regarding RIBBS posting.
- On page 2 under 'Operating Platforms' changed 'LNX' to 'L32 (Linux 32-bit)' and 'L64 (Linux 64-bit).'
- On page 3, updated the Pro-rated Fee Schedule to include Suite^{Link}.

November 17, 2008

License Agreement

- In the licensee box on page 1, change the USPS suite number to '101.'
- In 'Exhibit A: Product Fees and Descriptions' revised the layout of the Pro-Rated Fee Schedule.
- In 'Exhibit A: Product Fees and Descriptions' removed the 'Factor Table' and replaced it with the 'Pricing Table.'
- In 'Exhibit A: Product Descriptions' under 'Additional AMS, DPV and LACS^{Link} ZIP + 4 Database License' removed occurrences of 'factor table' and replaced with 'pricing table' and 'fees' where applicable.
- On the first two signature pages under 'USPS Contracting Officer' changed the suite number to '101.'

AIS025 (Order Form)

- Removed the 'Factor Table' and replaced with the 'Pricing Table.' Also revised the layout of the Pro-Rated Fee Schedule.
- Added information about the Centralized Email Account.

June 2, 2008

License Agreement

- License Agreement updated to reflect the DPV, LACS^{Link} and eLOT trademark changes to registered trademarks.
- Changed the watermark from "Sample" to "For Display Only"

AIS025 (Order Form)

- License Agreement updated to reflect the DPV, LACS^{Link} and eLOT trademark changes to registered trademarks.

January 14, 2008

- In Exhibit E, added information concerning Z4DPV in section 4.0.

October 10, 2007

- Throughout document, 'CD-ROM' was changed to 'electronic media' except for on page 22, Exhibit C, changed 'CD-ROM' to 'disc.'
- The Stop Processing sections for LACS^{Link} and DPV were combined into one section in Exhibit E.
- 'Resale' was changed to 'Resell' on all occurrences.
- Language regarding the creation of a centralized email account was added to section 45.0 and subsequent sections were renumbered.
- In Section 8.0:
    - In the first line, changed 'works in conjunction with' to 'is incorporated into.'
    - In the second line, changed 'valid delivery' to 'known address record.'
    - Changed the third sentence to the following: The DPV system ensures ZIP + 4 codes will be assigned only when the primary number of the address can

validated using the DPV Product, and whether the input address reflects any applicable municipality address conversions.
    - In the sixth line, changed ‘deliverable’ to ‘known USPS.’
- In Section 8.1:
    - Moved ‘RDI’ to section 8.3 and moved ‘LACS^{Link}’ to section 8.1.
    - Added the following sentence: The LACS^{Link} Product is incorporated into the AMS API Product and identifies whether an input address reflects any applicable municipality address conversions.
    - In the last line, changed the exhibit number to ‘E.’
- In section 8.2, changed ‘G’ to ‘F.’
- In Exhibit A: Product Fees and Descriptions:
    - Revised the fees, including adding pricing for CDs and DVDs.
    - Replaced the pro-rated fee schedule to coincide with the current order form.
- In Exhibit A: Product Descriptions, combined AMS, DPV and LACS^{Link} API where appropriate and removed the individual products for DPV and LACS^{Link} where appropriate.
- In Exhibit E: Stop Processing in the AMS, DPV and LACS^{Link} API Product, combined exhibits E and F and renumbered subsequent exhibit.
- On the Signature pages:
    - On the license page, added DPV, LACS^{Link} and eLOT and removed the eLOT signature page.
    - On the AMS API Description Request Form, added DPV and LACS^{Link}.
    - On the Advertising Form, added DPV and LACS^{Link}.
    - On the Developer’s Kit Customer ID Form, added DPV and LACS^{Link}.

March 14, 2007

- Removed ‘OSF’ as an operating platform in Exhibits B and D.

October 24, 2006

- Referenced Exhibit A in Section 2.0.
- In the first paragraph of Exhibit A, changed section reference to 7.0.
- Added Pro-rated Fee Schedule to Exhibit A.
- In Exhibit G in Section 2.3, removed ‘LicenseeVendor’ and replaced with ‘Vendor.’

September 25, 2006

- Reworded Section 32, item D to read ‘That the CD-ROM media should be returned to the Licensor within thirty (30) days if it does not meet the above conditions.

April 3, 2006

- Added new Section 26.0 Cancellation/Termination Obligations, which contains language pertaining to the cancellation and/or termination of License Agreement by either Licensor or Licensee.
- Renumbered existing sections.

December 8, 2005

- Information on the LACS^{Link} Product was added and information on the RDI Product was revised.

AMS API Modifications

- Exhibit A: Product and Fees and Descriptions was amended to include LACS^{Link} and RDI.
- Exhibit B: Operating Platforms was revised.
- Exhibit D: Use Restrictions of Address Matching System Files and Directories was revised to include the LACS^{Link} Product.
- Exhibit G: LACS^{Link} API Product was added.
- LACS^{Link} was added to the signature page and customer ID form.

July 6, 2005

Section 16.0, page 9

The phrase “or certify address information is being matched properly” was removed.

Fee Schedule – AISO27.PDF

The pro-rated fee schedule, which is located under AMS API, was removed from the RIBBS site.

June 22, 2005

The pro-rated fee schedule was added to the RIBBS site under AMS API.

February 16, 2005

Exhibit F: RDI Enabled AMS API Product, page 26

This section was added to incorporate the RDI product.

Section 8.1, page 5-6

This section was added to include the RDI product.

February 2, 2005

Dates were added to reflect the dates of the modifications.

December 1, 2004

Introduction, page 1
The statement of agreement between the licensee and the USPS has been revised, eliminating the effective date of the license.

Exhibit A: Product Fees and Descriptions, page 19

The Factor Table was moved from Exhibit B: Operating Platforms and Factor Table, page 23 of the January 2004 License Agreement to Exhibit A: Product Fees and Descriptions, page 19 of the current License Agreement.

Exhibit B: Operating Platforms and Factor Table, page 21

Under Operating Platforms, a code and description for SUN 64-bit (S64) was added. The Factor Table and discontinued platforms were deleted.

AMS API Modifications

Address Matching System Application Program Interface (AMS API) Developer's Kit, page 20 in the January 2003 License Agreement, page 19 in the current License Agreement

This section combined the Address Matching System Application Program Interface (AMS API) and the Delivery Point Validation Application Program Interface (DPV API) Developer's Kit. This section further explains that this kit is required to access both products. The kit includes one AMS ZIP + 4 database license, one DPV database license, operating platform and six (6) bi-monthly CD-ROMs for AMS API and DPV API.

Delivery Point Validation Application Program Interface (DPV API) Developer's Kit, page 21 in the January 2003 License Agreement

This section was combined with Address Matching System Application Program Interface (AMS API) Developer's Kit.

Exhibit D: Use Restrictions of Address Matching System Files and Directories, page 23

The Directories section was revised with an addition of S64 to the list of subdirectories. The following subdirectories were deleted: OS2, MAC, SCO and HP.

Exhibit E: Delivery Point Validation (DPV) Enabled AMS API Product, page 25

Section 2.5 A and B was revised to state included in the annual subscription fees in the Licensee's Internal Software and Licensee's Product for End Users are six (6) bi-monthly AMS API and AMS DPV CD-ROM discs.

United States Postal Service® Address Matching System Application Program Interface (AMS API) and Delivery Point Validation Application Program Interface (DPV API) License Acknowledgement of License and Licensor Acceptance Signature Form, page 26

This form was revised to combine License and Licensor Acceptance Signature Form for AMS API and DPV API. The USPS Contracting Officer section was updated and the USPS NCSC authorized representative section was removed.

United States Postal Service® Delivery Point Validation Application Program Interface (DPV API) Licensee Acknowledgement of License and Licensor Acceptance Signature Form, page 29 in the January 2003 License Agreement

This form was removed and combined with page 26 of the current License Agreement, therefore this page was deleted.

United States Postal Service® eLOT (Enhanced Line of Travel) Licensee Acknowledgement of License and Licensor Acceptance Signature Form, page 27

The USPS Contracting Officer section was updated and the USPS NCSC authorized representative section was removed.

United States Postal Service® Information Based Indicia Program (IBIP) Licensee Acknowledgement of Licensee and Licensor Acceptance Signature Form, page 28

The USPS Contracting Officer section was updated and the USPS NCSC authorized representative section was removed.

AMS API Modifications

United States Postal Service® Address Matching System Application Program Interface (AMS API) Stack Request Form, page 34 in the January 2003 License Agreement

This form was removed.

United States Postal Service® Address Matching System Application Program Interface (AMS API) and Delivery Point Validation Application Program Interface (DPV API) Developer's Kit Customer ID Form

This form was revised to include Delivery Point Validation Application Program Interface (DPV API) in the heading.

United States Postal Service® Delivery Point Validation Application Program Interface (DPV API) Developer's Kit Customer ID Form, page 36 in the January 2003 License Agreement

This form was removed.

United States Postal Service® Address Matching System Application Program Interface (AMS API) Stack Customer ID Form, page 37 in the January 2003 License Agreement

This form was removed.

WebSurveyor 4.117

EULA - End User License Agreement

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Enquoted.com

Fred Seibert

The early seasons of 'The Simpsons' had a great deal of heart. That's what I'm trying to pull from, the kind of stuff that goes straight to kids' hearts. When they're watching, they don't necessarily know why they love something.

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6. **Nitro Pro** 1052
7. **TNEPDS** 998

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Applicable Certifications and/or Licenses

Deloitte has provided a copy the Certificate of Status of Good Standing in Section VII 5.1.2 State of Nevada Registration. There are no other applicable certifications or licenses to submit.

DWSS is transforming its child support enforcement systems to better serve the families of Nevada. Child Support systems are complex. Deloitte offers efficiency and lower risk based on our experience with the CA CSE transfer solution, experience gained from implementing this solution in Oregon, a deep understanding of DWSS's technical environment, and experience gained through our national commitment to child support.

Hands-on experience with CA CSE transfer solution and its technology components

The CA CSE transfer solution is the foundation for your transformation, and the proposed Deloitte team members built and maintain the original CA CSE transfer solution, spending the past six years improving it. The same team that will serve you has implemented 82 major enhancements and 548 system fixes and maintenance change requests for CA CSE. They have also reduced the level of ongoing, non-critical defects by over 57 percent. In addition, we collaborated with the CA CSE team on upgrading major technology components of CA CSE to the latest versions of AIX, WebSphere, and WebSphere MQ. No other firm can match the level of current experience with the CA CSE system.

Leveraging Oregon's CA CSE transfer solution knowledge and experience

The Deloitte team for DWSS will leverage the knowledge and experience of the Oregon implementation of the CA CSE transfer solution to build the NCSEAS solution. That means we will take the years of work we've done in Oregon and apply best practices and lessons learned, significantly improving efficiency on multiple levels.

Understanding of DWSS's technical environment

We have worked with DWSS and Nevada delivering every project on-time and on-budget. Members of the Deloitte team for the NCSEAS project have hands-on experience and deep technical knowledge of your systems, including those that NCSEAS will be integrating. This experience and knowledge coupled with proven working relationships with your staff will minimize your risk and optimize our joint efficiency.

QUOTE

"With the Deloitte team's deep knowledge of the California child support system, they were able to stand up a solution in Oregon's proof of concept environment during the early stages of the project. This proof of concept provided a broad understanding of the functionality during requirements and design sessions which helped us identify areas that needed to change to meet Oregon's specific requirements. We are now in the System and Integration Testing phase of the project and our confidence in Oregon's decision to partner with Deloitte continues."

Kate Cooper Richardson,
Director, Oregon Child Support Program

Leading national child support experience

Experience with other HHS projects of similar scope is a critical success factor, as is specific child support enforcement experience. Deloitte has successfully built CSE solutions in states all over the US, which gives us eminence and knowledge we will bring to DWSS. There are very few challenges we haven't already encountered and solved across these previous projects.

Besides the knowledge our people bring, we also have accelerator tools developed specifically to create project efficiency. For example, Deloitte uses accelerators for requirements management based on our experience delivering the California and Oregon solutions. They include an inventory of child support requirements, CSE business process models, and templates. The accelerators enable expedited timelines while maintaining full coverage of necessary functional, non-functional, state, and federal requirements. The Deloitte team has developed requirements for six out of the last nine new child support systems: Oregon, California, Florida, Indiana, Massachusetts, and Texas.

Deloitte brings to DWSS a deep bench of qualified professionals that understand the complexity of the business rules in the child support program.

In this section, you will find a detailed description of Deloitte's approach to your system requirements. Integrated within this approach is experience gained in California, Oregon, Florida, Pennsylvania, and 20 other large-scale projects in child support enforcement systems.

3.1 Vendor Response to System Requirements

3.1 Vendor Response To System Requirements

The Implementation Contractor will prepare the RTM deliverable to document each of the baseline requirements, the changes that adjusted or expanded the requirements, the system components that implemented each requirement and the tests that verified them. The Implementation Contractor will maintain the RTM on an ongoing basis. The QA contractor will review the RTM on a periodic basis to ensure that all entries conform to project requirements. The Implementation Contractor will purchase the RTM software tool, subject to the Program's approval of the tool. The Program's staff, the PMO contractor, and the QA contractor will have copies of this tool so they can read and review the RTM. Functional designs, technical designs, test case development, code construction and unit testing, test execution, and training materials will address all requirements.

The ability to measure and track the coverage of requirements through each project phase is a principle that our Enterprise Value Delivery (EVD) methodology emphasizes. Our EVD methodology coupled with the tools that we selected for NCSEAS project provides the ability to establish a Requirements Traceability Matrix (RTM) at the outset of the project and follow it throughout the project lifecycle. Our approach for establishing an RTM and use of it throughout the project has been proven in several public sector projects, including the Oregon Child Support project where we are using the EVD methodology to transfer the CA CSE system. Our approach to meeting your requirements begins with understanding your requirements in the RFP as detailed in Attachment M – Implementation Vendor Requirements and the CA CSE system. We analyzed the NCSEAS project requirements and are proposing a solution that accounts for degree of fit with your requirements. These requirements and fit gap analysis of the requirements provide the basis for our solution that is comprised of our computing platform, the functional features and the technical platform for NCSEAS system.

SECTION HIGHLIGHTS

Oregon experience:

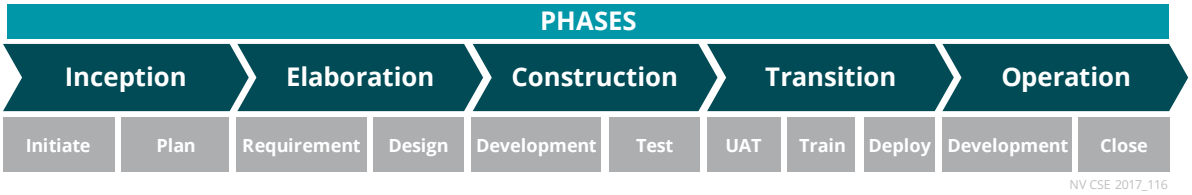
- ***Functional prototype in 60 days***
- ***Reverse engineer CA CSE design documents before JAD sessions***
- ***Repository based tools that provide improved quality***
- ***JIRA and JAMA for requirements and test management tools***
- ***Perforce for version control***
- ***Review and verify RTM throughout each project phase***
- ***Transparent access for the PMO and QA vendors review as part of deliverable stage gates***
- ***Added value by introducing innovative upgrades to the user interface***
- ***We are already working with Maximus and CSG in Oregon and have demonstrated a collaborative team***

EVD Methodology

Deloitte EVD Methodology is based on the Software Engineering Institute's (SEI) Capability Maturity Model Integration (CMMI) and Project Management Body of Knowledge (PMBOK). It supports the activities that are executed during the project life cycle. It has an extendable framework that can be customized for specific organizations and projects, and it incorporates a scalable architecture that provides a starting point to adapt and deploy a highly flexible and reliable system with ease of maintenance.

The EVD Methodology details key objectives and tasks for each phase within the project. Each project phase represents a defined segment in the implementation life cycle where a set of tasks are carried out to create deliverables that meet the phase objective.

Various phases of EVD Methodology are outlined in the following diagram:



Please refer to Section VII: 5.6, 5.7, 5.8, 5.9, 5.10 and 5.11 for details on how we apply EVD methodology to NCSEAS project.

Acquiring the Assets

We bring to DWSS our experience in collaborating with the State of Oregon and the State of California to identify, request, and acquire CA CSE transfer assets. We also bring to DWSS the experience of how to review the artifacts received and the reconciliation process that we used. This lays the foundation to meet the requirements and allows us to jump start the activities required to establish the requirements traceability matrix for the NCSEAS system. We propose to receive, reconcile and build a repository of the artifacts within thirty (30) days of receiving the assets from the State of California. The following table provides a list of artifacts that we recommend DWSS seek from the State of California. In our experience from transferring these assets from State of California to the State of Oregon, combined with Deloitte's experience maintaining the California system since 2011, we have a very good understanding of the documents that are needed for NCSEAS. Our team does not have to learn and discover what is in the artifacts. We already know them and this knowledge will reduce the startup risks associated with the NCSEAS project.

Number	Type of Artifact	Description
1	Page Mockups	Prototype environment available for JAD sessions (Hi-Fidelity HTML Mockups. Pages work, no database).
2	Source Code repository (from Clearcase views including source, repository, utilities)	Clearcase views that contain the source files for the following type of code components: • CS Online • CS Batch • CS Interfaces • CS Self service • Batch scripts • Utilities • Integration components • E-Filing Batch Descriptions • Online help • Self-Service (VIOLA) This includes the JAR Repository and Configuration Management folders in the source code repository. This may also include the Utilities Clear Case view with Image Capture code, mobile application, and other artifacts.
3	System Documentation	Software Use Cases.
4	Database Deployment Procedures and Scripts	Listing and codebase for deployment scripts.

Number	Type of Artifact	Description
5	Configuration Management Scripts	Deployment Scripts (e.g., Build Forge/ANT scripts). Configuration Files & Procedures Ticket Flow.
6	Process and modules cross reference	Cross reference to CSE screens and Batch Jobs. They accomplish the items listed in the Holistic Use Cases.
7	Process/Flow diagram	Holistic flow of the application and process by at subsystem level (Financials, Case Management).
8	IDD (Interface Design Documentation)	Document that details the design for external interfaces including input/output layouts, method of communication and business rules.
9	System Documentation	Page Descriptions for each online page. At one point, this was knows as the System Design Description (SDD).
10	Data Dictionary and Entity Relationship Diagram	List of Tables, Columns, and Visio diagrams for each module. Data files for ETL tools.
11	Activity Log/ Combined Log Configuration Spreadsheet	List of available Log/history entries used in CA CSE along with available dynamic parameters and static text for the log entry and triggering action.
12	OLTP Database Table Layout	List Tables, Columns, Data Type, and Size. This also includes database sequences, Views, and Triggers.
13	Reference Data Configuration	List of reference tables, and contents in delimited files (e.g., CSV format or other common delimiter formatted data).
14	Database	Scripts to replicate data from OLTP to the replicated database used for reporting.
15	Environment Scripts	Environment creation scripts, utility scripts, cron jobs. Environment specific configuration files.
16	Form Layouts	Mockups and Descriptions.
17	Report Mockups	Report Mockups and Descriptions (SDD).
18	Security Matrix	A matrix of security roles to CA CSE web pages, and mode of access (view/edit).
19	Task Configuration Spreadsheet	List of system triggered worker tasks by module including parameters like mandatory tasks, number of days to complete task, triggering action, and description.
20	Batch Run book	Batch run book including, batch job description, run frequency, parameters that are used; failure procedure and any current dependencies.
21	Utilities	Utilities used to support the functioning of the CA CSE application: • Configuration files • Test scripts Other assets that are required to execute the CA CSE application.
22	Quick reference guides	Quick reference guides used by staff and helpdesk.
23	Software User Manual	User manual that contains the online help manual for the CA CSE online system (Online help).
24	Training assets	Classroom training materials (student guides, instructor guides, Power Point presentations, handouts/job aids. Web-based or Computer based training materials (WBT/CBT).
25	Reporting Database Table Layout	List Tables, Columns, Data Type, and Size. This also includes database Views, Stored Procedures.

Table 3.1- 1. Recommended List of Artifacts.

In order to receive the artifacts, we suggest the following responsibility matrix and we recommend starting these activities as soon as DWSS is able to enter into contract negotiations. Based on our lessons learned, it may take six to eight weeks for the State of California to provide the required artifacts. This allows for the receipt of the source code and other artifacts so that we can begin setting up the source code repository and the functional prototype on day one of the project.

Task #	Task	Approximate Duration	Responsibility
1	Draft a letter for the State of Nevada to send to California	2 weeks	DWSS/Deloitte Support
2	Review draft letter and obtain required approval	2 weeks	DWSS
3	Send letter to State of California and hold call(s) to clarify any questions	1 week (2 weeks after sending the letter)	DWSS assisted by Deloitte
4	Package code artifacts and associated deployment instructions	8 weeks	State of California
5	Identify Reference Data required for system to function (e.g., case types, county names, security profiles.)	2 weeks	Deloitte NCSEAS team assisted by Deloitte Oregon and Deloitte California teams as needed.
6	Create demo/test data to populate basic information (Case, Participant, Third Party)	4 weeks	Deloitte NCSEAS team assisted by Deloitte Oregon and Deloitte California teams as needed.
7	Procure and Set-up Environment for deployment	4 weeks	DWSS/Deloitte support

Table 3.1- 2. Identified Tasks, Durations, and Responsibility.

We will collaborate with you prior to project start to submit the requests. We recommend that DWSS initiate the request for the artifacts at the earliest possible date. In addition, we recommend refreshing the assets with the State of California as they may change prior to the Design sub-phase of the project.

Establishing a Requirements Repository

The first step of our Enterprise Value Delivery (EVD) methodology is to establish a requirement repository. To accomplish this, we propose the Jama Contour tool to input and manage the requirements provided in Attachment L of the RFP – Implementation Vendor Requirements. We will start elaboration of requirements in the Plan sub-phase of the Inception Phase and complete it in Requirements Validation sub-phase of the Elaboration phase. Once we validate and finalize the requirements at the end of the Joint Requirements Planning (JRP) sessions, we load the requirements into the requirements repository. We group functional requirements by business processes (such as Case Initiation, Locate), and technical requirements by topic areas (such as core architecture, performance, document generation), and establish links between related requirements. These links provide users real-time visibility into the dependencies between the requirements and demonstrate how changes in one business process may affect a number of other business processes. At the end of this activity, DWSS and your QA and PMO contractors can access the requirement

repository and verify that the NCSEAS requirements trace to one or multiple detailed requirements elicited during JRP sessions. The RTM will be exported from Jama contour into a Microsoft Excel file for formal delivery.

Establish Design Traceability in the Beginning

With the foundational traceability established in RTM, we proceed to the Design sub-phase. Using a functional working proof of concept of the CA CSE system and reverse engineering documents from the source code are two important activities that we propose to DWSS to complete the Design sub-phase. Further, from our experience gained in the State of Oregon, we propose to build the traceability prior to the commencement of a phase rather than at the end of the phase. This provides the ability to establish a baseline and update RTM throughout the phase. This helps in performing impact analysis when modifying functionality for NCSEAS. In the State of Oregon, we worked collaboratively with the Agency staff, PM Contractor and the QA contractor to verify traceability at the end of each phase to validate coverage of requirements. We found this very effective and we propose to use this practice with DWSS.

Reverse Engineering CA CSE Design Documents

During our current effort to transfer the California system to Oregon, we discovered that the system documentation is more defect based. In other words, the current documentation that the State of California maintains is at the support ticket level, addressing only the changes that are a result of that particular ticket. Since the documentation was at the ticket level the Deloitte team needed to have a detailed understanding of the system to be able to conduct requirements and design sessions. While this approach works during the Maintenance and Operations phase at CA CSE, which has staff with matured understanding of the system, it may not serve the needs of DWSS. A thorough set of documentation that indicates the functionality in the CA CSE solution is needed to transfer the CA CSE solution to the NCSEAS solution. We intend to reverse engineer the code using the approach we took in Oregon, by way of reviewing code and filling in gaps that exist in the design documents. Completing this activity during the Requirements Validation sub-phase of the Inception phase. Our knowledge of the CA CSE system, combined with the knowledge of reverse engineering CA CSE design documents for Oregon, will be of immense value in completing this activity prior to the start of the JAD sessions. This also allows us to use RTM to trace requirements to functional and technical design documents prior to the start of design to understand where the gaps are. During design, we update the design documents, promptly identifying the documents affected using the established traceability as an impact analysis tool. We develop new design documents for reporting module based on the NOMADS data warehousing concepts as well as data conversion. These documents are loaded to the repository and traced during the Design phase.

CA CSE Functional Prototype – a catalyst for the NCSEAS solution

We propose to use a functional prototype of the CA CSE solution within the first sixty (60) days to demonstrate the functionality during the functional JAD sessions. Using the prototype in the JAD sessions helps the JAD participants to understand the functionality of the CA CSE system. This helps to focus in identifying modifications required to the CA CSE system for DWSS. We have the experience building a functional prototype for the State of Oregon using the CA CSE system source code. Standing up the prototype requires in-depth understanding of the CA CSE solution. It also requires navigating the issues to overcome the deficiencies posed by the lack of accurate documentation. We bring both these attributes to DWSS. We leverage our collective knowledge involving our practitioners from both the States of California and Oregon. This, in addition to our knowledgeable staff who understand your infrastructure and security standards, provides us with a unique advantage to complete this task. Design is the first step where requirements coverage is necessary. For the NCSEAS project, SMEs and business analysts as well your QA and PMO contractor to validate this, an understanding of the transfer system is of extreme importance. To be able to add and update data to demonstrate how the system meets the requirements and to identify where the gaps are during a JAD session is invaluable. We used the CA CSE Proof-of-Concept solution that we stood up in the Oregon JAD sessions extensively. Additionally, this helps the project team in the traceability of the requirements to the functional design documents once generated.

Maintain the traceability throughout the SDLC

We establish traceability with code modules in Perforce Software. We update the traceability for new modules as they are developed and loaded into the repository. We develop test cases for DWSS and use Jama Contour as the repository for storing them. We establish traceability between requirements and test cases allowing DWSS and your QA and PMO vendor to verify the traceability. DWSS has the option of using the developed test cases to form a base for your User Acceptance Testing scenarios.

We propose the use of Jira, Jama and Perforce for developing, maintaining and reviewing traceability. We store the configuration items that are delivered in SharePoint for distribution and reviews. Our EVD methodology promotes the use of these integrated tools to maintain traceability throughout the project lifecycle. Our project staff review and update traceability when completing each of their assigned work items. This includes modifying a requirement, updating a design document, modifying a code component, test case or training document. We understand and acknowledge that the DWSS staff along with your PMO and QA contractor should have the proper level of access to these tools. We work in a transparent way to orient DWSS staff and your PMO and QA contractor to the repository, an exercise that we performed in the State of Oregon. This collaborative approach helps in improving the quality of the software product. We suggest that the PMO and QA contractor conduct focus review of the RTM at each of the following milestones.

- ***Completion of the requirements***
- ***Completion of the design***
- ***Completion of the development and unit testing activities***

- ***Completion of system testing***

DWSS, PMO and QA contractor have continued access to the RTM and can review and get clarification throughout, but a thorough review at the end of the stage gates provides DWSS with the confidence that requirements are met at each important milestone.

The following table defines the activities and the responsibility of the Deloitte team and the DWSS for each task.

Task	Description	DWSS	Deloitte
1	Load requirements that trace to Federal and States statutes	Informed	Responsible
2	Review and validate the coverage defined as a part of the initial requirements and baseline them	Responsible	Informed
3	Load the requirements after the JAD and JTD sessions	Informed	Responsible
4	Review and approve the RTM deliverable and finalize the requirements as a baseline.	Responsible	Informed
5	Establish traceability of the code with the requirements by integrating perforce with JAMA	Informed	Responsible
6	Review and approve the traceability between the code and the requirements	Responsible	Informed
7	Develop test scripts against the identified requirements and establish traceability in JAMA and JIRA	Informed	Responsible
8	Review and approve the traceability between the test scripts and the requirements	Responsible	Informed

Table 3.1- 3. RTM RACI Matrix.

Our Ability to Meet Your Requirements

The process we use to establish, maintain and review the RTM provides DWSS a structure of how you can validate that NCSEAS meet your requirements. In this section we have addressed the attributes that are essential to meet your requirements.

Knowledge of the Current California System

Deloitte assumed operations and maintenance responsibilities of CA CSE in 2011, and over the last six (6) years, we have resolved over 1,200 system fixes, 400 maintenance change requests, and implemented over 180 major enhancements. Support establishment has improved by seven percent to 89 percent, current collections have improved by seven percent to 63 percent, and arrears collections have increased by five percent to 65 percent, and cost-effectiveness has also improved. Recently, our team members developed and implemented the self-service intake solution. DWSS benefits from our current experience as we provide staff with current working knowledge of the system who can expedite setting up the proof-of-concept and establishing the source code inventory for NCSEAS.

Experience of transferring CA CSE

Our functional and technical knowledge of the system has gained further depth because of the transfer effort that we are undergoing in the State of Oregon. Our understanding of your functional requirements are elaborated in Section V: 3.4 Functional Requirements. The

CA CSE system is based on Java EE technology and is very similar to the applications that we developed and implemented for DWSS. The experience that we gained as part of the State of Oregon transfer effort will be of immense help to DWSS. We understand the challenges imposed by transferring the CA CSE system, from setting up the workspace for compiling the source code without errors, to populating required reference data that is needed to bring up the proof-of-concept. We have upgraded the Java versions from Java 4 to Java 8 in Oregon. We have experience in switching out products that are currently used in CA CSE. For example, we are using OpenText Exstream in the State of Oregon instead of Adobe for document generation and IBM Cognos for reporting instead of Hyperion. Through these efforts, we understand the specific portions of the CA CSE system that requires modification to integrate with different products. We leverage this experience to integrate NCSEAS with Smart communications SmartCOMM (Thunderhead) and SAP Business Objects. CA CSE system provides processing logic for interfaces that were built for the State of California. Currently, we are in the process of customizing these interfaces for the State of Oregon. During this process, we identified the nature and extent of changes required to the system interfaces as well as the related batch processing logic that are specific to the State of California. We will work with DWSS by leveraging our knowledge gained to identify the changes that are needed for DWSS and build it into the design for NCSEAS. We share knowledge between the two implementations as necessary and bring value to DWSS by helping avoid issues before they occur. Additionally, we are making several critical enhancements to the CA CSE system for the State of Oregon; for example, we are making key changes to the financial module. We are also implementing a Judicial Establishment process that does not exist in CA CSE. These modifications will be an improvement on the CA CSE system and our knowledge of going through these changes in Oregon will greatly benefit DWSS.

Knowledge of Your Existing Environment

Our staff from the State of Nevada projects for DWSS have an in-depth understanding of the NOMADS system and the State of Nevada infrastructure and technology standards. Our understanding of your technical infrastructure is detailed in Section V: 3.2 Computing Platform. We propose tools that DWSS currently owns to minimize the Total Cost of Ownership; leveraging your existing hardware and software assets. In addition, we recognize that this provides you with an opportunity to utilize skillsets that DWSS has already developed in your organization. For example, we are proposing to use Thunderhead (now Smart Communications) for document generation and SAP Business Objects for Business Intelligence and reporting. DWSS currently has invested in both these tools. This provides an avenue to reduce costs that might be otherwise higher for initial procurement as well as ongoing maintenance. Consolidation on existing tools also reduces the risk of having to acquire skillsets in multiple tools for the same purpose.

We have the experience with interfacing agencies and system. First and foremost is our knowledge of the NOMADS system. The IVA interface is the most critical interface, when it comes to Child Support as a major portion of the case load, is initiated through this referral. Our knowledge of the data structures and the data provides us with a unique ability to build the interface that is required as a compensation for splitting the integrated system that exists today.

In summary, we bring to DWSS, a wealth of knowledge of the CA CSE system in its current form that is required for establishing a proof-concept and identifying changes required to make it DWSS specific. We demonstrated this in our detailed analysis of your functional requirements as described in Section V: 3.4 Functional requirements. We are experienced with your technical landscape, as well as the NOMADS system and the CA CSE technical architecture, instrumental in selecting the right tools and the target architecture. We have used this experience to respond to your technical requirements in Section V: 3.3 Technical Requirements. Finally, we are currently transferring CA CSE in the State of Oregon. We believe the challenges that we overcame and the lessons we learned from this effort will be of immense value to DWSS.

3.2 Computing Platform

3.2 Computing Platform	
3.2.1	The system should conform to State of Nevada standards for architecture, system development, and operations:
3.2.1.1	Java (8)1.8 / J2EE Spring MVC Framework as the programming language and platform;
3.2.1.2	WebSphere as the application container;
3.2.1.3	DB2 as the database platform;
3.2.1.4	AIX and SUSE Linux as the operating systems;
3.2.1.5	PowerVM as the AIX virtualization technology;
3.2.1.6	VMWare as the Intel virtualization technology;
3.2.1.7	FileNet as the content management system; and
3.2.1.8	Novell e-Directory as the credential store.

The CA CSE system architecture establishes a foundational framework for the NCSEAS computing platform. This framework will be used for continuous deployment and evolution of business and technical services to meet DWSS standards prior to deployment. The CA CSE transfer solution uses open industry standards that provide a consistent, functional Services Oriented Architecture (SOA) implementation as well as web services integration with existing interfaces and enablement of the overall enterprise.

Our architecture builds upon the CA CSE system architecture and enhances it to achieve the following key features for DWSS.

Feature	*Approach through N-Tiered Architecture*
Scalable	***Independent tiers allow the system to scale out independently under an increased load when resources are added. Virtualized servers provide vertical scaling by adding memory and CPU to existing servers, and WebSphere clustering provides for horizontal scaling and fault tolerance.***
Maintainable	***Modular design of the solution allows easy maintainability as well as enhancement at a much faster rate and a lower cost.***
Reliable	***N-Tiered Architecture provides a solid foundation for a reliable, scalable distributed system.***
Flexible	***Independent tiers provide loose coupling of components. This allow solution to adapt to future requirements or technology changes.***

Table 3.2- 4. Enhancement of Key Features for DWSS.

Our proposed solution is based on the existing architecture of the CA CSE system, but is also enhanced to capitalize on the State of Nevada's technology environment and advances in Commercial Off-The-Shelf (COTS) products such as Smart Communications SmartCOMM (Thunderhead), and FileNet P8. Use of COTS products to perform functions such as correspondence generation and document management allows DWSS to componentize the architecture. This approach positions DWSS to take advantage of newer products when they become available. Therefore, the solution does not remain locked into the older technology component or if a vendor discontinues support for a product. We work with you to maintain currency of COTS products and application framework components including conversion from CA CSE's Struts to Spring MVC framework at once prior to the start of development. Deloitte's upgrade approach is guided by Release Management principles that objectively determine the need for an upgrade and its alignment with the transfer solution paradigm. Deloitte's process of evaluating options for a software upgrade is a cyclical process of verifying the latest version of each software against the guiding principles. These guiding

principles fall into the following five categories: Cross compatibility, Support, Security, Features and Project Schedule.

The following diagram presents the recommended physical architecture view for the transfer solution. Note: Deloitte works with DWSS to refine this view during the technical design sessions to align with DWSS's existing system and network configuration.

The following table lists the capabilities associated with the key COTS technical and integration products of our transfer system solution architecture. In addition to the re-use of components where feasible, our approach leverages other proven, open standards-based products from leading vendors in order to reduce implementation risk and lower the cost of ongoing support. This approach also modernizes the transfer solution to the latest technology standards.

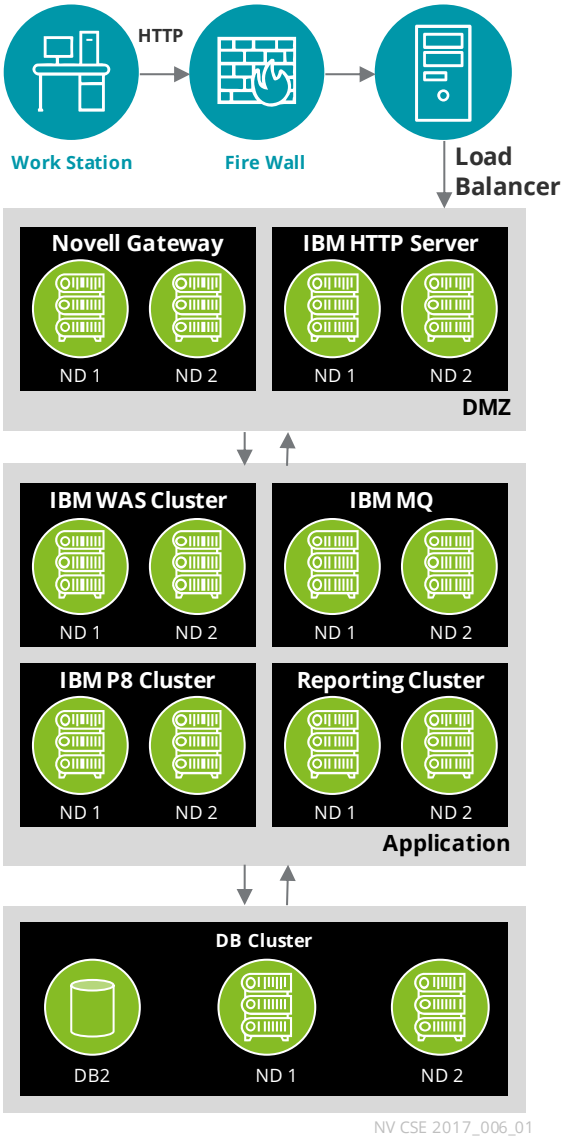


Figure 3.2- 1. Physical Architecture.

Vendor/ Product	*Application in the transfer solution*	*Benefits to DWSS*	*Why this product*
Java(1.8)/ JEE	***The programming language for the baseline transfer application is Java 4 (1.4). We upgrade this to Java 8 to meet DWSS requirement. We have already performed a similar upgrade in our transfer of the solution in Oregon. We also replace the struts framework to Spring MVC to meet DWSS standard. We have executed a similar migration for DWSS in the past.***	• ***Leverages the skillsets of DWSS's java developers thus reducing on-boarding/adoption time and improving collaboration.*** • ***Simple and elegant language with a well-designed, intuitive set of APIs, allows DWSS's programmers to write better code with fewer defects.***	• ***Proven solution in the CA CSE system.*** • ***A platform independent programing language with the flexibility to be easily migrated from one computer system to another.*** • ***An easy to learn object-oriented programming language that allows creation of modular and reusable code. It is also relatively easier to find skilled Java resources in the market.***
WebSphere	***Application server runtime that hosts the transfer application***	• ***Enables exposure of business logic through various interfaces allowing flexibility in maintaining the NCSEAS solution.*** • ***Manage services such as clustering, fail-over, and load-balancing improving quality attributes of the system.***	• ***Proven solution in CA CSE system.*** • ***Capitalizes on the State's existing WebSphere technology infrastructure.*** • ***Based on DWSS's requirements and aided by our strategic collaboration with IBM, we identified WebSphere as the right application server for the system.***
DB2	***Database platform***	• ***Support the transaction units of work and the performance needs of the application. This allows the DWSS's database team to maintain the database layer.***	• ***Proven solution in CA CSE system.*** • ***Capitalizes on the State's existing DB2 technology infrastructure.*** • ***Based on DWSS's requirements and aided by our strategic collaboration with IBM, we identified DB2 as the relational DB for the solution.***
AIX and Suse Linux	***Operating System***	• ***Manages hardware/software resources and provides common services for the application.***	• ***The AIX OS is the proven solution in CA CSE system.*** • ***Capitalizes on the State's existing AIX and Suse Linux technology infrastructure.*** • ***Based on DWSS's requirements and aided by our strategic collaboration with IBM, we identified AIX as the Operating System for the solution.***
PowerVM	***AIX virtualization technology***	• ***Required for the support of logical partitioning of the underlying compute resources – improves IT effectiveness while reducing costs.***	• ***The proven solution in CA CSE system.*** • ***Capitalizes on the State's existing PowerVM technology infrastructure.***

Vendor/ Product	*Application in the transfer solution*	*Benefits to DWSS*	*Why this product*
			• ***Based on DWSS's requirements and aided by our strategic collaboration with IBM, we identified PowerVM as the right virtualization technology for the solution.***
VMware	***Intel virtualization technology***	• ***Used for deploying and serving virtual computers – improves IT effectiveness while reducing costs.***	• ***Based on previous experiences with other successful solution implementations we recommend the VMWare for addressing WinTel dependencies in the system product stack.*** • ***Capitalizes on the State's existing VMware technology infrastructure.***
FileNet	***Document Management solution for storing scanned images, generated forms, and eFiled documents***	• ***Reduces the amount of paper storage and allows case workers to share information across agencies.*** • ***Provides rapid access to documents for any user.***	• ***Based on DWSS's requirements (part of the State's technology stack) and with the help of our collaboration with IBM we identified this as the suited tool for content management to provide long-term benefits to DWSS.*** • ***Note: The CA CSE system currently integrates with IBM's Content Manager to implement document management services. The application will be retrofitted to integrate with FileNet.***
Novell E-Directory	***Credential Store***	• ***Serves as a directory store to provide a central place to store resource credentials (usernames and passwords).***	• ***Capitalizes on the State's existing eDirectory services infrastructure. Note: The CA CSE system currently integrates with IBM ISAM security solution. The application will be retrofitted to integrate with the Novell security infrastructure. This also avoids the daunting task of converting existing users to a different repository.***

Table 3.2- 5. Key Products of Our NCSEAS Architecture.

These recommended products for providing integration, technical and infrastructure services have been selected not only for their fit-for-purpose but more significantly to align with and capitalize on DWSS's technology infrastructure investments. These are industry leading products and we have the backing and support of IBM through our National IBM Alliance. We have dedicated alliance staff who help us resolve complex problem requests by engaging the right IBM product line staffp. We bring to DWSS staff who are very experienced in using these tools in multiple engagements. For example, we have used IBM

WAS in large scale implementation and operations in Nevada, Texas, Wisconsin, Georgia, Oregon, and California. We have Database administrators who have experience in administering large DB2 databases in several states including Texas, California, and Oregon. We have used IBM Filenet in the State of Wisconsin. We have practice teams that focus on these products. Our staff who are part of these practices share best practices from their engagements that maximize the use of these products. They also collaborate on troubleshooting and share knowledge of upcoming upgrades within the community to enhance service delivery to our clients.

Although we have adopted the core architecture and infrastructure components that are the same as used in the CA CSE system, we also have proposed to use the following products and frameworks that are different from the CA CSE system. The following table lists these differences and the reasons why we proposed them. While this allows for DWSS to consolidate on the platform for easier maintainability on an ongoing basis, it also increases the effort on the customization of the CA CSE system to replace existing components that use a different technology.

Product/component used in CA CSE system	*Product Component Proposed for NCSEAS*	*Reasons for choosing a different product*
Struts framework	***Spring MVC***	***Align with DWSS standards.***
IBM Content Manager	***IBM Filenet P8***	***DWSS already uses this product for content management and we propose to be consolidated on this platform to leverage existing resources.***
Data warehouse and Reporting: DB2, ETL custom scripts, Hyperion	***MS SQL, SAP Data Services EDGE XIR2 and SAP Business Objects***	***DWSS already uses these products for data warehouse and reporting; we propose to be consolidated on this platform to leverage existing resources. This also provides the ability to continue using the reports in NOMADS that aligns with DWSS vision.***
IBM ISAM	***Novell e-directory***	***To integrate with the existing DWSS eDirectory services, that helps leverage the existing repository for authentication purposes.***
Adobe LiveCycle	***Smart Communications (ThunderHead)***	***DWSS already uses this product for document generation and we propose to be consolidated on this platform to capitalize on existing resources.***

Table 3.2- 3. Products and Framework Different from CA CSE System.

3.3 Technical Requirements

3.3 TECHNICAL REQUIREMENTS

For the functional requirements, see Section 2 of Attachment M, Implementation Vendor Requirements.

Our approach to meeting your technical requirements are based on our experience of maintaining the CA CSE system, knowledge of DWSS technical landscape and our experience of transferring the CA CSE system in the State of Oregon. We have a great amount of experience in implementing large scale Java based applications in the several states including Nevada, Texas, California, Wisconsin, and Michigan to name a few. We bring lessons learned from these large engagements to benefit DWSS. Additionally, we are a large scale system integrator who has an alliance with IBM with access to their resources that can be leveraged to expedite project activities and resolve issues, as we have demonstrated in our ongoing CA CSE transfer in Oregon, where we have involved IBM in various problem management request (PMRs) directly through our alliance. We also get a preview of upcoming critical product upgrades and patches prior to them being released for general availability. This allows us for planning and executing project tasks more efficiently. With knowledge of CA CSE and Nevada, coupled with our strong IBM Alliance, we believe we are uniquely positioned to meet or exceed the technical requirements provided in the RFP.

Fit Gap Analysis

We have completed a fit gap analysis for Nevada's Attachment M technical requirements and classified each requirement into one of three categories as follows:

- ***The standard function is available without modification from the CA CSE system.***
- ***Modification of the CA CSE system is required and has been assigned anywhere from 1% to 99% fit depending upon the amount of modification needed.***
- ***Custom design and development is required and has been assigned 0% fit.***

Based on our analysis of Attachment M technical requirements, 54 percent can be met as standard functions, 14 percent requires modification and 32 percent requires custom design and development.

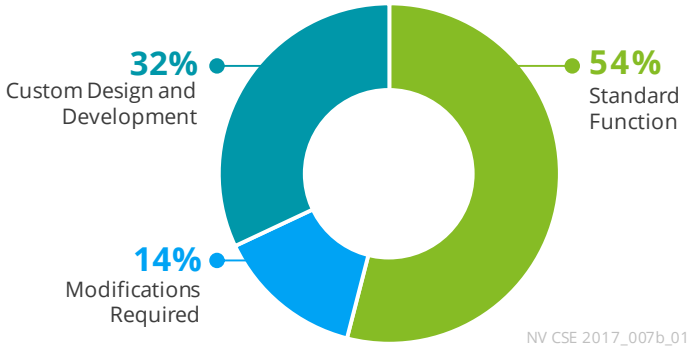


Figure 3.3-2. Technical Fit Gap.

Our response to the detailed requirements from RFP Attachment M are provided in the sections below.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
5.3.1 Core Architecture	*3*	*2*	*0*	*1*
5.3.2 Archive and Purge	*5*	*0*	*0*	*5*
5.3.3 Tiered and Modular Architecture	*4*	*4*	*0*	*0*
5.3.4 Languages	*1*	*1*	*0*	*0*
5.3.5 Performance	*8*	*6*	*1*	*1*
5.3.6 Communications	*2*	*0*	*2*	*0*
5.3.7 System Backup and Recovery	*3*	*2*	*1*	*0*
5.3.8 Database	*13*	*11*	*2*	*0*
5.3.9 Security	*17*	*6*	*7*	*4*
5.3.10 Interfaces	*5*	*0*	*2*	*3*
5.3.11 User Interfaces	*3*	*3*	*0*	*0*
5.3.12 Document Generation and Document Management	*20*	*17*	*0*	*3*
5.3.13 Data Warehouse and Business Intelligence	*7*	*0*	*0*	*7*
5.3.14 Code Quality and Maintainability	*3*	*2*	*0*	*1*
5.3.15 Development Tools	*2*	*1*	*0*	*1*
5.3.16 Automated Referral Processing	*1*	*0*	*1*	*0*
5.3.17 Calendar Management	*1*	*1*	*0*	*0*
5.3.18 Alerts Management	*1*	*1*	*0*	*0*
5.3.19 Customer Service	*3*	*2*	*0*	*1*

Table 3.3-6. Technical Requirements Fit Gap Analysis.

3.3.1 Core Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#1) The system should conform to State of Nevada standards for architecture, system development and operations:

- Java / JEE as the programming language and platform
- WebSphere as the application container
- DB2 as the database platform
- AIX and Linux as the operating systems
- PowerVM as the virtualization technology for the AIX platform
- VMWare as the virtualization technology for the Intel platform (Windows / Linux)
- FileNet as the content management system
- Novell E-Directory as the credential store

(#2) The system must provide mechanisms to make frequently-changing elements of the system accessible to business users and able to be modified without changes to underlying system-level code. For example a BRMS (Business Rules Management System) and / or BPMS (Business Process Management System) to allow key algorithms and workflows to be defined and modified by line-of-business personnel more directly.

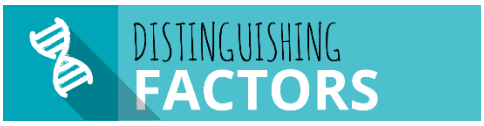
(#3) All system components must be compatible with virtualization technologies such as VMWare and IBM PowerVM.

Solution Compatibility

Our NCSEAS solution is compatible with the State's infrastructure and supports your vision to benefit the stakeholders. It can work on the technology stack that we have thoughtfully selected for DWSS as described in Section V: 3.2 Computing Platform. NCSEAS can be hosted on the IBM WebSphere application server and hardware architecture to leverage the DWSS' existing AIX-based platform. We are proposing the use of products that maximize your investments and aligns with your existing staff skillsets. We are open to discuss any changes if you feel there are alternative choices you would like to make.

NCSEAS is not only based on the existing architecture of California Child Support Automated System (CA CSE) but is also enhanced to capitalize on the State's technology environment and advances in COTS products like IBM Websphere Application Server, IBM Tivoli Workload Scheduler, IBM Filenet P8, IBM DB2, SAP Business Objects. It provides maximum advantage to the DWSS. Utilizing COTS products allows DWSS to componentize the architecture so that when newer products become available in the market place, the NCSEAS solution is not locked into a specific technology component.

DWSS receives a service-oriented, flexible, modular, scalable and secure NCSEAS solution. The solution incorporates open standards per guidelines from reference model such as Simple Object Access Protocol (SOAP), Web Services, XML, and Java Enterprise Edition (JEE). Our technical architecture is compatible with IEEE standards, the ITIL framework,



Deloitte brings unmatched experienced to DWSS:

- ***More than 1000 Java development resources and 50 system architects who work in our Public Sector practice on various projects***
- ***Over 300 dedicated practitioners focused on child support delivery***
- ***Dedicated Advisory function with more than 200 staff who specialize in cyber security***
- ***Dedicated Enterprise Content Management service line with more than 70 staff who specialize in document management and back file conversion***
- ***Deloitte is a Tier 1 IBM Business Partner with access to IBM product staff to help***

and NIEM guidelines. It uses industry standard hardware and software and leverages existing DWSS infrastructure.

Adherence to State's Standard Architecture, System Development and Operations

The CA CSE system uses highly interoperable open standards technologies such as JEE, SOAP, XML, Service Component Architecture (SCA) and Web-Services. While standards do evolve and change, a level of backward and forward compatibility is built into open standards and provides another layer of protection against becoming obsolete.

At completion, NCSEAS will serve both internal and external customers using components to be transferred from California. The worker portal that the DWSS caseworkers will use and the Citizen portal that citizens will use to apply for services and participants will use to manage their personal and case information. The California CA CSE worker portal was developed using the Struts framework. In order to be compatible with the DWSS Standards used in Public Assistance worker portal, we convert the CA CSE worker portal from Struts to Spring framework. We have experience in doing similar conversion in our previous projects with DWSS. This solution is advantageous for the agency in maintaining the system on one framework serving multiple DWSS projects.

The CA CSE citizen portal has two different components to it. The self-service application module called Virtual Interactive Online Application (VIOLA) and the rest of the functionality to view and manage participant information. While VIOLA is based on more modern technology like Bootstrap in the User interface layer, it still uses struts framework. As part of our Oregon Citizen Portal solution implementation, Deloitte's Digital User Interface experts heard the voice of the client, understood the pain points of the agency and addressed the issues by providing an intuitive user experience. It resulted in:

- ***Enhanced look and feel in tune with modern industry standard web portals***
- ***Structurally organized screen navigation to capture the data***
- ***Improved User Experience by minimizing the number of clicks***

We used Angular JS, Public API architecture and Responsive web design techniques to re-architect the solution to position the Agency to provide multi-device services to its clients. This also provides the Agency to quickly expand services as well as monetize the web services in the future. While we understood the RFP requirement and scoped our citizen portal effort to transfer the CA CSE application, we recommend DWSS to consider re-architecting the citizen portal like we did for the State of Oregon.

In addition to standards described above, our NCSEAS solution supports WS Notification and WS Resource Framework standards for web services. It incorporates industry standard hardware and software as shown in the following figure.

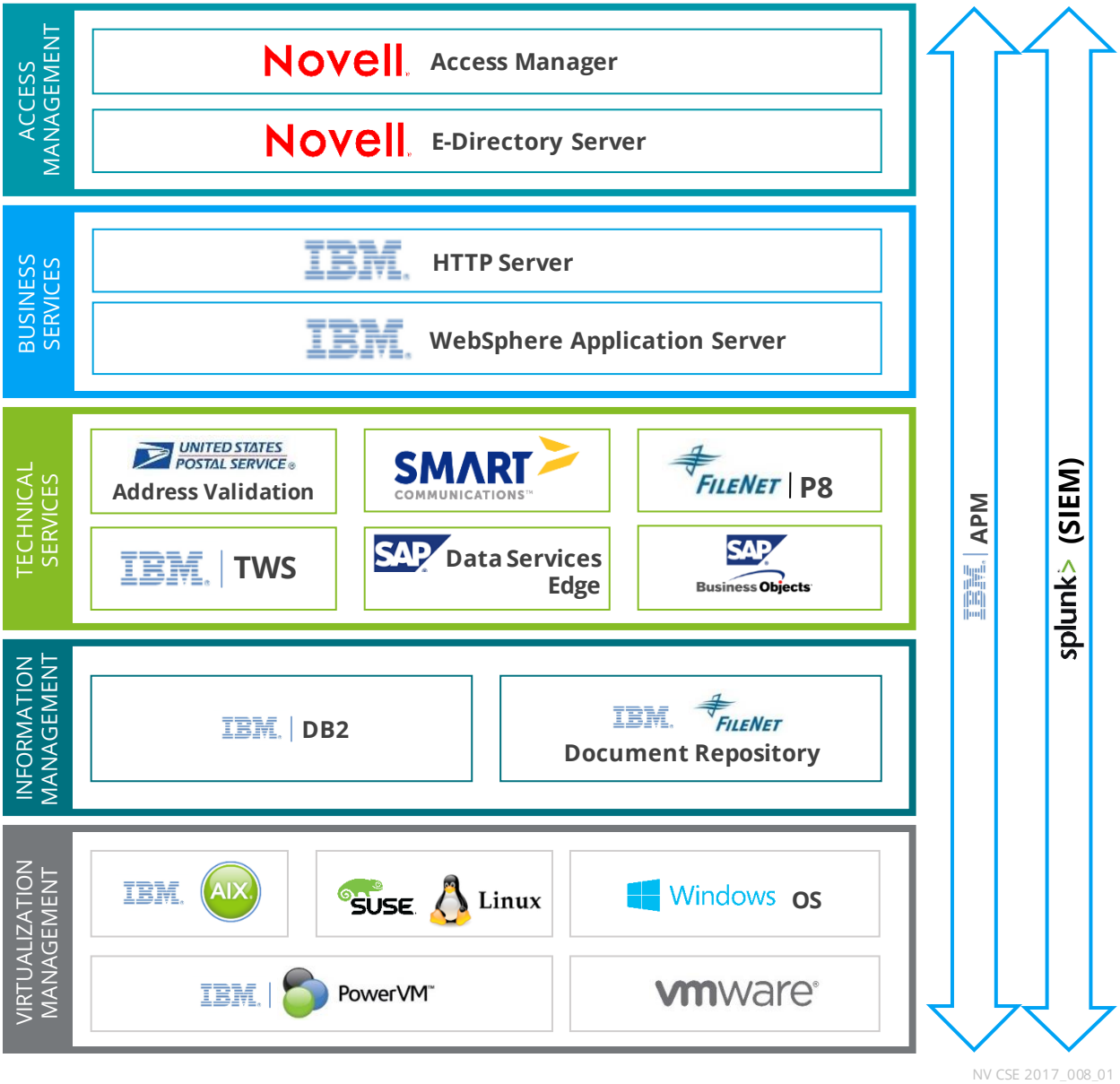


Figure 3.3-3. Adherence to Industry Standard Hardware and Software.

DWSS can rely on adherence to industry standard hardware and software with our solution which works with the proposed technology stack.

- ***The existing TCP/IP network SilverNet and the security infrastructure is leveraged, including the existing DWSS Novell eDirectory, and the Novell Access Manager (NAM) for authentication and authorization.***
- ***<u>Hardware and Operating System.</u> The solution can work on 32/ 64 bit hardware such as IBM 740 Server; and operating systems such as Windows 2012 Server Edition, AIX, Solaris, and Linux. We leverage the State's existing AIX-based IBM 740 system.***
- ***<u>Virtualization.</u> We use a hypervisor and logical virtualization tier through the use of VMware's vSphere platform, the industry-leading platform for virtualization.***

- ***Database.*** ***Our NCSEAS solution works with industry-standard relational database management system IBM DB2. We leverage the State's existing DB2 relational databases in our solution.***
- ***Application Server.*** ***Our NCSEAS solution uses WebSphere Application Server which is one of the leading and most widely used Application Servers in the industry today.***
- ***CA CSE system components are compatible with VMWare and IBM PowerVM virtualization technologies. Use of virtualization allows for increased agility, flexibility, and scalability through the use of hypervisor technologies.***
- ***IBM Filenet P8.*** ***Our NCSEAS solution integrates with FileNet to provide a centralized repository of generated documents using an advanced taxonomy designed to make it easier to retrieve the documents when needed. It provides multiple indexing options and physical directory structures to meet different organizational needs for stored documents. It provides the ability to maintain multiple versions of documents and can maintain a history of changes. It provides options to DWSS in terms of storing both redacted and non-redacted versions of a document, with different access control rules for each.***
- ***Thunderhead (Smart Communications).*** ***We understand DWSS' infrastructure and architecture and intend to leverage the existing capabilities that bring a combined advantage of re-usability of system resources and the skillset required to operate them. We propose Thunderhead for correspondence generation. It is an XML based open standard product. We are proposing this tool to consolidate on the correspondence generation toolset for DWSS. We recognize that there may be other less expensive options available in the market and we are committed to working with DWSS if you wish to consider other options that reduces your Total Cost-of Ownership (TCO). We have a vast amount of experience implementing leading correspondence generation tools such as Adobe used by CA CSE as well as the State of Florida,and Opentext Exstream in states like Kentucky, Indiana, and Oregon.***

Software Upgrade

We upgrade the products that are involved in NCSEAS namely, Filenet P8, Websphere, and IBM DB2 to the latest compatible versions that are commercially available and stable. Any subsequent changes to the software versions are managed using the change control process. We also replace the struts framework that is in the CA CSE system with spring MVC to comply with DWSS standards.

Address Frequently Changing Elements of the System that are Accessible to Business Users

We plan to provide mechanisms to make elements that frequently change to be parameterized or externalized from the application, accessible to authorized business users, and able to be modified with minimal to no changes to underlying system-level code.

As a lesson learned from our Oregon transfer, we recognize that having the identified rules in a central repository for tracking purposes. We propose that we extract the rules and store it in our application management tools for easier identification and traceability

purposes. The CA CSE application does not use or need an external rules engine. The rulesets are externalized and modularized using policy objects and database driven values that can be altered without having to modify or update the entire codebase when changes need to be made. As an alternate approach, we can work with DWSS to externalize the rules that undergo frequent changes such as guideline calculation logic or locate response ranking in an external rules engine such as IBM ODM that DWSS owns and is already familiar with. An approach that we determine during the joint design sessions.

We have experience in implementing rules using an external rules engine such as IBM ODM and Corticon in Texas, Indiana, and Pennsylvania. For the other state projects of DWSS, the business rules that we have written are in an easy to interpret and business friendly language, making it easy for your SMEs to review and understand the rules.

Summary

Deloitte's has long record in transferring solutions with similar core architecture in other states. We reviewed your core architecture requirements and compared it with the CA CSE architecture to determine the level of fit. The following is the summary of Core Architecture fit gap analysis.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Core Architecture	***3***	***2***	***0***	***1***

Table 3.3-7. Core Architecture Fit Gap Analysis.

3.3.2 Archive and Purge

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#4) The system must accommodate automatic archival and purge functionality.
(#5) The system must control data retention through the use of parameters.
(#6) The system must accommodate overrides at the participant, case and worker level to prevent data and images from being archived and / or purged.
(#7) The system must be able to restore case data from the archive.
(#8) The system must provide an audit trail for archive and purge activity in a log.

CA CSE system does not currently support archive and purge functionality for the production database. Customization is required to establish this functionality aligned with DWSS-specific retention and purge policies.

We implemented archive and purge functionality in CSE for the states such as Pennsylvania and Florida. In these states we took into account the state statutes and data retention policies to develop a customized solution that met their needs. We work with DWSS in a similar fashion to define your archive and purge functionality.

While the archival of case data requires custom scripts, Deloitte uses the life cycle policy and action features of FileNet to customize and automate the purging process for documents. Automated purging of documents is achieved by applying custom life cycle policies and actions to document classes.

Based on our experience, archival is implemented as a series of batch jobs that analyze the case data in the database and apply a set of rules to determine the records that have

become eligible for archival. A successful archival is followed by a purge of the same records in the transactional database to free up space. The space thus freed up is recycled for storing newer records.

Similarly restoration is triggered by user action (i.e., a user requests that a case or participant be restored from archived data). A series of batch jobs then find and load the data as well as update ledger statuses.

The following figure illustrates the archive-purge and restoration operations in production:

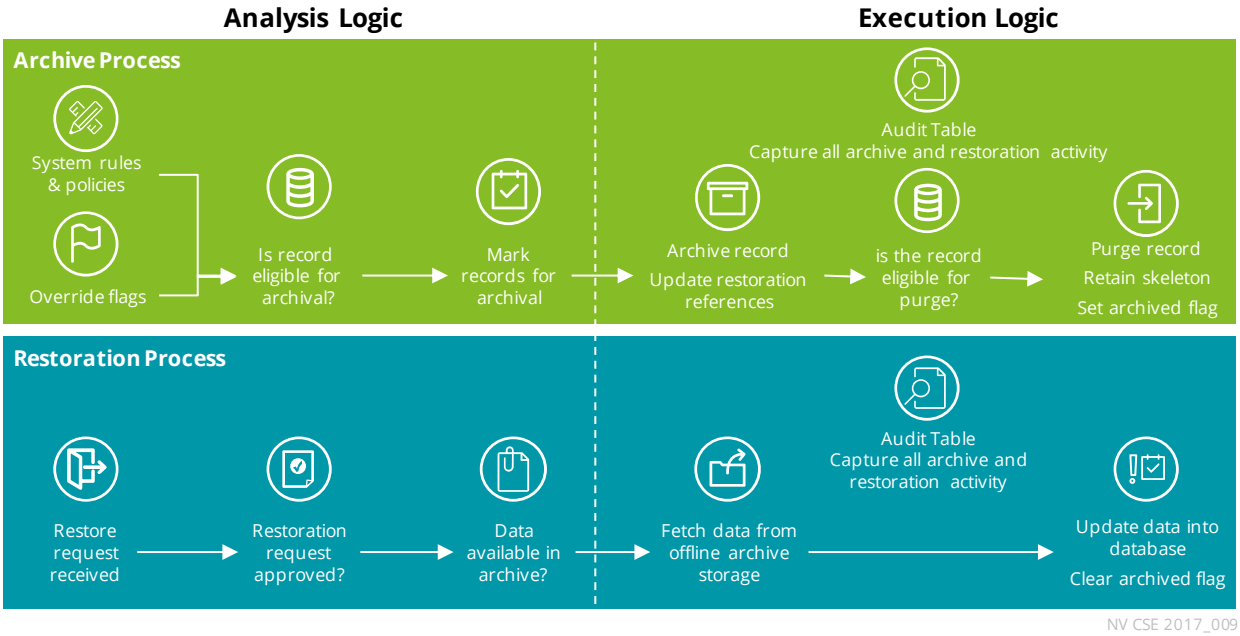


Figure 3.3- 4. Archive and Restoration Logic.

Our approach to address NCSEAS' data retention and disposal needs follows a five step approach:

- ***Obtain rules and requirements from DWSS, including data retention, and purge requirements for the system***
  - ***System level rules that identify cases and participants that should be archived based on data retention laws, statute of limitations and DWSS policies***
  - ***Mechanisms to override archival by flagging a case or a participant selectively, by providing screens that facilitate this and the user groups that would have security access to do so***
- ***Analyze data and the data storage. There are several critical items to account for:***
  - ***Dependencies between tables so that data is stored as a unit and relational integrity constraints are not violated***
  - ***The frequency with which storage and purging shall occur and the expected amount of data that needs to be handled during these activities***
  - ***Archived data structure and format to enable selective case data restoration as needed***

- ***Analyze Automation Options.***
  - ***At the database, archival scripts are scheduled to run at specific intervals***
  - ***Database purge should be sequenced after a successful archive and automatic transaction rollback options should be evaluated for feasibility***
  - ***For documents, the life cycle policies and actions are applied to document classes, properties, and objects. It is important to analyze which method would be best suited for DWSS' needs***
- ***Design and Build.***
  - ***Write the code for archival, purge and restoration***
  - ***Create the actions, schedule the execution triggers for the database***
  - ***Support DWSS to design logging and audit events and analyze for compatibility with Splunk***
  - ***Create the life cycle policy for documents. The life cycle policy defines the set of states that different document classes pass through during their lifetime***
  - ***Test the solution to cover regular as well as exception scenarios like rollback and restoration***
- ***Implement the solution. Physical aspects such as file group locations, disk I/O, and optimizing views across databases are important implementation considerations.***
  - ***Storage and indexing of archived data***
  - ***Access to archived data for restoration***

Summary

Archive and purge functionality is not implemented in CA CSE. We implement it as an enhancement for NCSEAS.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Archive and Purge	***5***	***0***	***0***	***5***

Table 3.3- 8. Archive and Purge Fit Gap Analysis.

3.3.3 Tiered and Modular Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#9) The system must comprise a tiered architecture for flexibility and maintainability. At a minimum, the architecture must separate the system into three tiers including, but not limited to, presentation, application, and data.
(#10) The system must employ an architecture by which the application is independent from the desktop and updates to the desktop are not required when application changes are deployed.
(#11) The system must be scalable, offering the ability to add capacity by adding infrastructure (e.g., servers) to the data center.
(#12) The system must embody a service or modular orientation to promote code reuse, standards, and easier maintenance.

CA CSE system is an enterprise scale application that integrates components working in unison to achieve the business functions. The solution primarily comprises of web-based applications to capture user inputs and user actions, as well as batch applications that execute on a pre-defined schedule, for bulk processing. The web-based applications follow standard client-server communication based design. The web-based applications are completely thin client, available over the network thus making them agnostic of the end client platform. This makes the system completely independent of end-user machine.

CA CSE system is multi-tiered and modular and supports services based design principles for integration purposes. The solution uses loosely coupled, self-contained and modular services through a common architecture. This promotes functional re-use across different modules in the system as well as opens the potential for enterprise-wide re-use. A modular design, allows referencing components across different parts of the application, thus reducing redundancy and improving the maintainability. Tiered and Modular architecture also helps make the overall application scalable. CA CSE application uses a consistent tiered approach for both online and batch applications. The following figure depicts the tiers in an online application such as a 'Search' page that provides the user with the capability to search existing participants in the system.

CA CSE Application Architecture

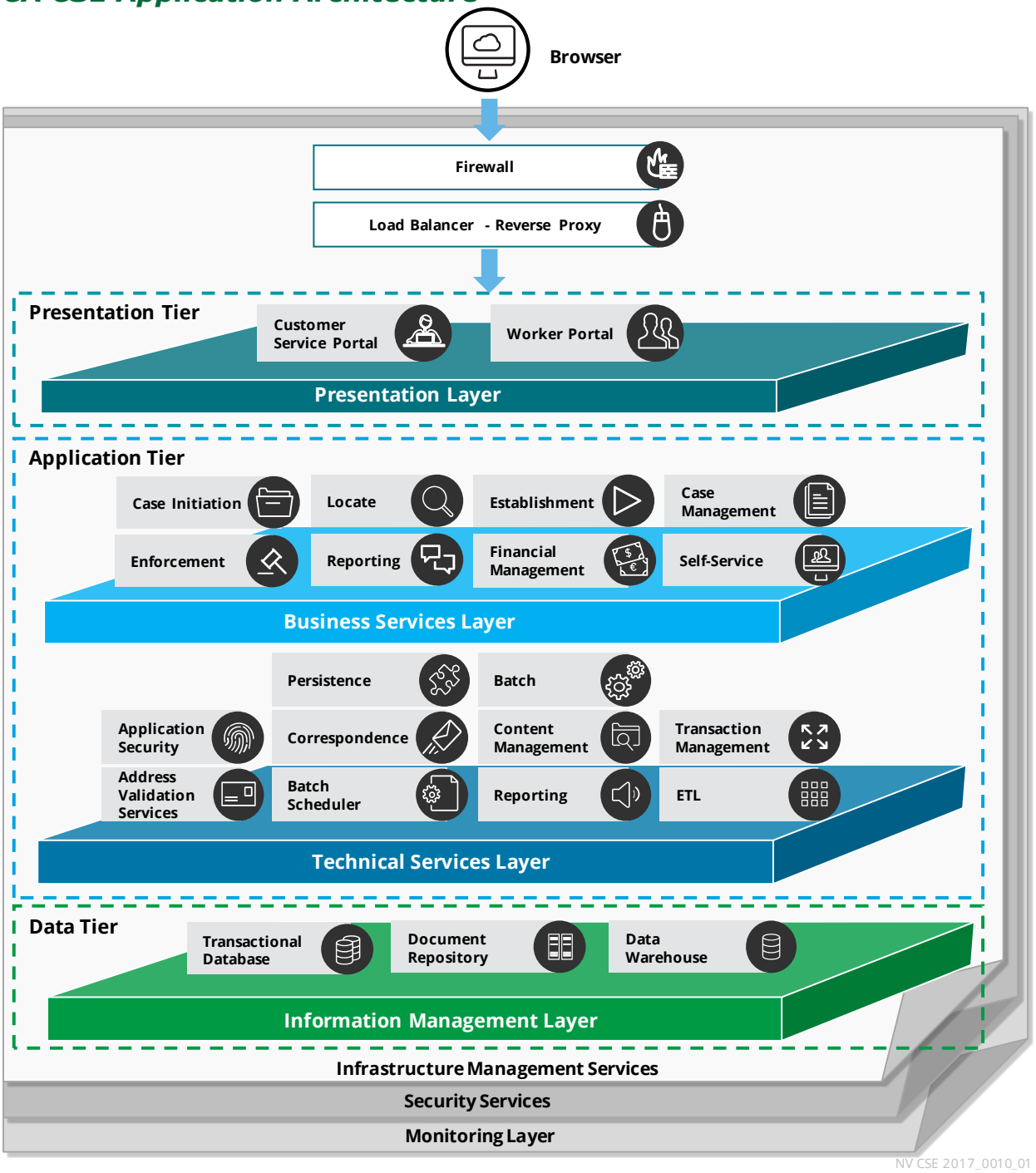


Figure 3.3- 5. Tier Application Architecture.

CA CSE system architecture has three logical tiers designed for scalability and portability. Tiered architecture along with modular design helps to maintain loose coupling across different tiers and layers of the application. This means that a change to one of the tier such as the presentation tier is accomplished independent of a change to the application tier helping to reduce or even avoid downtime and gives you a more reliable system. Each of

these 3 tiers are further subdivided into modules that focus on more specific functions of the application. The following section describes the three tiers of the logical architecture supported by the technical services: security and audit that are critical for each layer.

- ***<u>Presentation Tier.</u> The Presentation tier of the NCSEAS system comprises of pages (screens) for the Worker Portal as well as the Customer Portal. These components allow the end user to enter data and validates the data entry. Basic data validation like phone formats, and date ranges are handled at this layer. It is also the secure entry point for the users of this system and authenticates users in order to provide a Web-based access to the system. Components in the presentation tier are broadly grouped into two layers:***
  - ***Interaction layer. The interaction layer of the presentation tier, specifically groups the components that work as the rendering Engine for the web-applications of the solution. User navigation across screens for modules like Case Intake and Locate, navigation to and from Search screens and adherence to style-guide standards are handled at this layer.***
  - ***Common layer. The common layer of the Presentation tier groups components that connect the Presentation tier objects to the Application tier of the solution. A Search operation on the Locate screen accepts the validated data entry for search query from the Presentation tier and passes it on the Application tier for further processing using the "Delegate Factory" pattern. The "Delegate Factory" is an example of a component in the Common Layer.***
- ***<u>Application Tier.</u> The Application Tier of the NCSEAS system comprises of the various functions and layers that cater to integration, business logic processing, persistence, and communication. These application functions are broadly under:***
  - ***Services layer. The services layer of the Application tier enables de-coupling of the different modules and layers of the NCSEAS system using a services model that is independent of business functionality. This layer enables inter-application communication with internal and external systems using services model. A typical example is that of the Establishment module using data and services to establish paternity. This layer also includes the enabling framework services for auditing, session management, persistence, instrumentation and audit logging.***
  - ***Business Layer. The business layer of the Application tier comprises of the core business objects. It caters to implementation of specific business processes, workflow management, and rules management. It ties business logic components and Business Services to create composite business processes and user workflows. This layer contains business logic for the core business functions such as creating a case, establishing support order, and searching for existing participants and cases. The business logic supports functionality by sharing re-usable components across both online and batch components.***
  - ***Batch Layer. The Batch Layer of the Application tier has a batch handler hierarchy that governs the initialization and processing of business components in a batch mode. Batch layer also forms the core of the Application components that do not require user input, and hence processed in large volumes to increase the throughput of the application.***

Components that distribute payments received on a daily basis is an example of a Batch layer component. We have not only maintained these complex logic in State of California for the last ten years, but also in the process of implementing those in the State of Oregon.

- ***Messaging Layer. The Messaging layer of the Application tier enables communication within and across the various layers of the Application. It also caters to communication outside the Application boundary using XML based interfaces that facilitate transformation and routing of messages and secure delivery of messages between the NCSEAS application and other systems. Messaging layer has features to support file based, queue based, as well as real-time XML messaging based communication modes.***
- ***Persistence Layer. The Persistence layer of the Application tier exclusively caters to the database interactions that are required by the various layers and modules across the different tiers of the NCSEAS application. It provides common components required for database interactions like querying results to match the input parameters on a Search screens, saving the user's input across modules like 'Address Update', 'Update Participant' are performed by components in the persistence layer. Persistence layer components also save data created by batch processing.***

- ***Data Tier.*** ***This layer includes the NCSEAS database and external data sources accessed by various components in the NCSEAS. This also includes the Filenet repository that stores the document images used to store the electronic case file pertaining to a child support case.***

Spanning across the logical architecture are Security and Audit protocols. One of the prime goals of our solution is to safeguard customer information and to confirm access to authorized personnel only. The enhanced persistence layer also allows audit history for records in the database that acts as an auditing mechanism and satisfies the requirement to track the transactions performed by users.

Batch Applications

NCSEAS comprises several nightly batch jobs to process collections, distributions, Case Referrals from NOMADS public assistance system and National Directory of New Hire etc. Batch Jobs perform bulk data processing within a relatively short span of time and help maintain the integrity of the system. The sophisticated design of the Batch framework along with an enterprise batch scheduler heavily re-uses many of the components from the layers of the Application as well as Data tiers to provide the standard services required for executing a batch job execution. A modular Application architecture helps improve the throughput of the batch applications and reusable components help maintain consistent behavior of the application by removing redundancy.

The following figure shows the logical architecture of the batch framework.

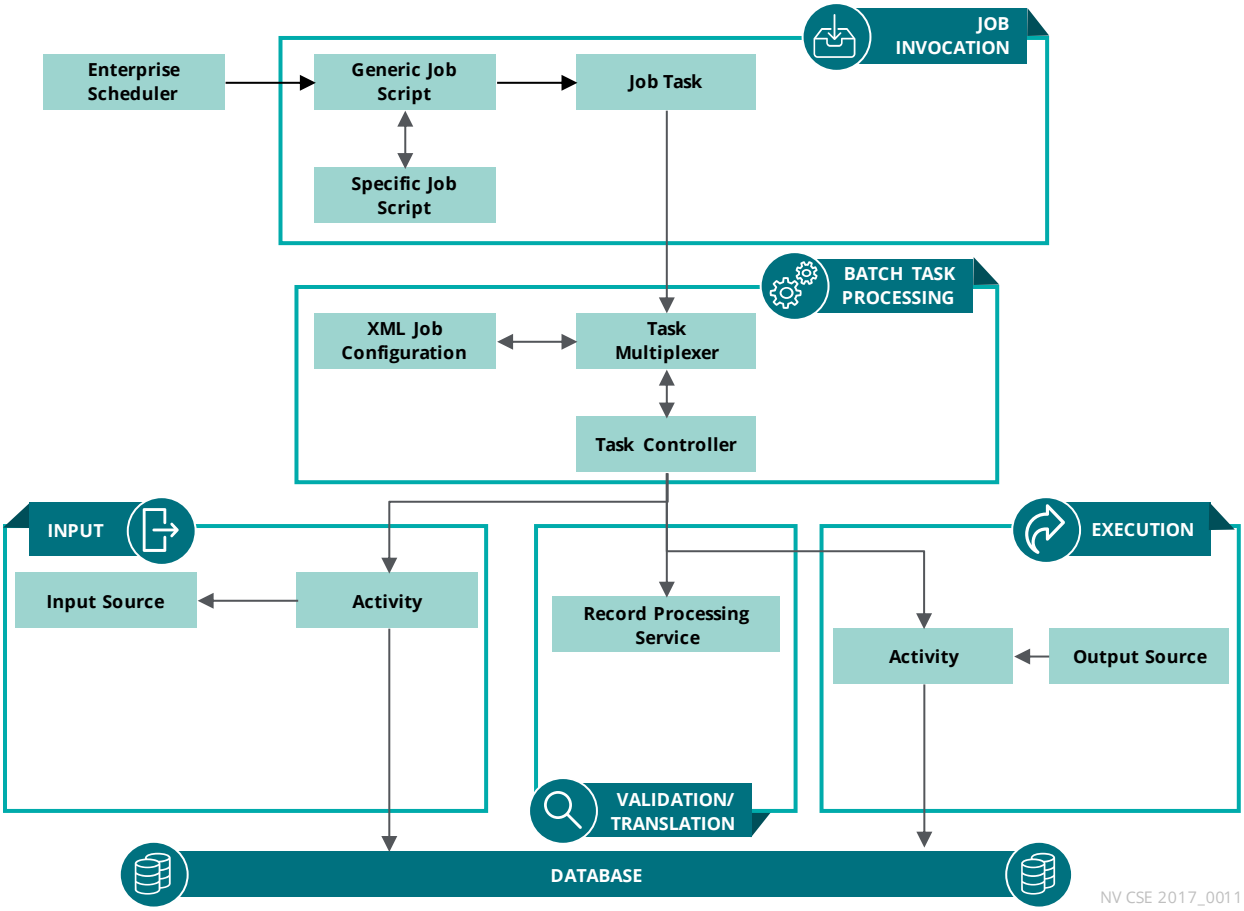


Figure 3.3- 6. Logical Architecture of Batch Framework.

Summary

CA CSE system has a tiered and modular architecture that groups the different technical sections of the solution into various tiers and layers to focus on specific functional and framework components. CA CSE system has applications that are agnostic of the end-user workstations. We take CA CSE and enhance to capitalize on the State's technology environment and advances in COTS products like IBM Websphere Application Server, IBM Tivoli Workload Scheduler, IBM Filenet P8, IBM DB2, SAP Business Objects. It provides maximum advantage to the DWSS. Utilizing COTS products allows DWSS to componentize the architecture so that when newer products become available in the market place, the NCSEAS solution is not locked into a specific technology component. In addition, we have the unique advantage of transferring CSEAS to the State of Oregon. We have a great deal of experience in transferring complex large scale systems for our clients. As an example, we have experience transferring Integrated Eligibility systems for the states of Michigan, Montana, Kentucky, New Mexico and Georgia among others. We are currently transferring the CA CSE system to Oregon. We have dedicated team of professionals who refine our transfer approach as part of our Enterprise Value Delivery (EVD) methodology. This includes toolsets to perform fit-gap, estimate re-usability, and identify areas that need

more deliberation, risk registers that point to most common risk factors and leading practices that are carried from one project to another. In all our transfer projects, we engage our resources who have experience in the business domain as well our technical resources who have experience in quickly understanding the artifacts and source code form the transfer states. We also understand that the target solution is specific to the state who inherits the transfer and we have worked with each of our clients to personalize and customize it to their needs. We have upgraded the code base and the frameworks in several of our transfers. Our experience in upgrading the framework level components, integrating it with various COTS products as well as modifying the CSEAS codebase to customize it for a different state will benefit DWSS immensely in the transfer of CSEAS.

It uses industry standard hardware and software and leverages existing DWSS infrastructure. Following is a summary of the Fit-Gap for Tiered and Modular Architecture.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Tiered and Modular Architecture	*4*	*4*	*0*	*0*

Table 3.3- 9. Tiered and Modular Architecture Fit Gap Analysis.

3.3.4 Languages

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#13) The primary programming language for the system must be a modern mainstream language.

CA CSE system has a tiered architecture developed using Java EE (JEE) standards with stable open-source frameworks like Struts for presentation tier, EJBs for Application & Business tier and, Hibernate in the persistence tier. The primary programming language is Java™ adhering to version 1.5, along with supporting languages like Structured Query Language (SQL), Extensible Mark-up Language (XML), Hypertext Mark-up Language (HTML) and JavaScript. We bring to DWSS the experience of maintaining and enhancing CA CSE application that is based on a modern language. We upgrade the JAVA version to 1.8 and convert the struts open source framework to SPRING MVC to align with DWSS standards. We have successfully migrated the CA CSE application to JAVA 1.8 in the State of Oregon. We bring lessons learned and a list of challenges overcome in this migration effort to DWSS. In addition, we have implemented CSE systems in Florida, several award winning modules for the CSE program of Pennsylvania such as the Performance Improvement Module, and numerous Health and Human Services systems in several states including the states of Nevada, Washington, Michigan, Texas, Virginia, Wisconsin and several others. In these states we have implemented solutions using modern mainstream languages like Java and .NET.

The following figure provides Fr a graphical representation of the components.

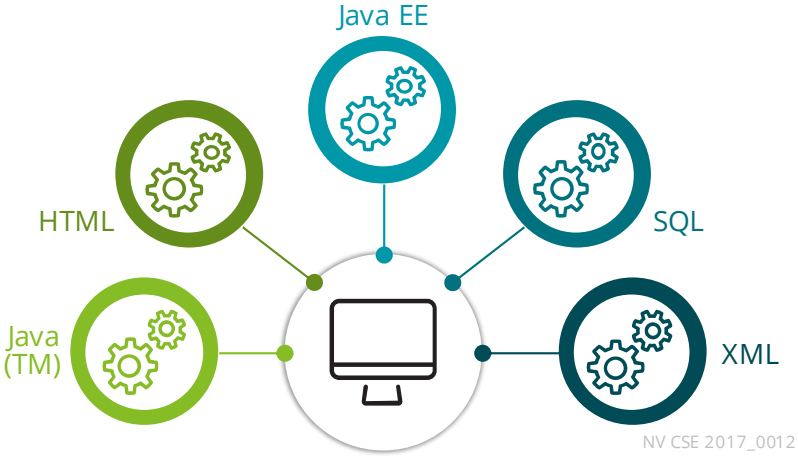


Figure 3.3- 7. Programming Languages to be used on the CSE System.

CA CSE system uses following programming languages.

Features	***Benefits***
JAVA EE	***Java EE is developed under the specification of the Java Community Process and provides an enterprise computing platform. The platform provides APIs and runtime environment for developing and running enterprise software, including network and web services, and other large-scale, multi-tiered, scalable, reliable, and secure network applications.***
HTML	***HTML, Hypertext Markup Language, is the predominant markup language for web pages. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, and lists as well as for links, quotes, and other items. It allows images and objects to be embedded and can be used to create interactive forms.***
Java	***Java is a modern as well as classic Object oriented programming language developed by Sun Microsystems, now owned by Oracle Corporation. It is available under the GNU General Public license and is governed by the Java Community process. We have not only transferred California's base Java system to Oregon as a proof-of-concept, but also upgraded it to Java version 8, the same version that Nevada desires. We bring the lessons learned from the effort to Nevada.***
XML	***Extensible Markup Language (XML) is a simple, very flexible text format designed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the Web and enterprise solutions.***
SQL	***SQL (Structured Query Language) is a database computer language designed for managing data in relational database management systems (RDBMS).***
JavaScript	***JavaScript is an un-typed and interpreted dynamic programming language that forms the core of the Web Content alongside HTML. It is a prototype based multi-paradigm language that supports Object oriented, imperative and functional programming styles.***

Table 3.3- 10. Features and Benefits.

Summary

CA CSE is built using Java EE concepts with Java™ as the primary programming language which is a modern mainstream language. The following is a summary of Languages Fit-Gap. We recognize and acknowledge the need to replace the struts framework to spring MVC to meet DWSS standards. We have adjusted the Fit-Gap accordingly to be transparent to the State about the major cost implications that this effort brings.

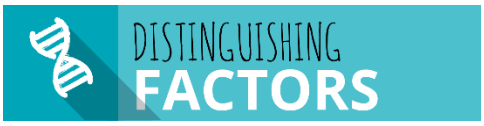
Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Languages	***1***	***1***	***0***	***0***

Table 3.3- 11. Languages Fit Gap Analysis.

3.3.5 Performance

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#14) The response time of the system should hold to industry standards and enable worker efficiency on a consistent basis during business hours.
(#15) Excepting scheduled downtime and unavailability due to batch processing, the system must be capable of delivering 99.9% availability.
(#16) The system must accommodate performance monitoring tools that automatically analyze resource usage to identify inefficient application components.
(#17) Required data copy, backup operations or other batch jobs conducted during business hours must not degrade application performance beyond allowed response time standards.
(#18) If batch processing is needed, the system must have a facility for running batch jobs (daily, weekly, monthly, quarterly, and / or yearly) that can be scheduled, stopped, restarted, and that log their activity.
(#19) The system must offer at least 18 hours per day for end-user availability.
(#20) If batch processing is needed, the system must incorporate a status reporting component into each batch job to report the processing statistics associated with the batch job, run times and processing duration, and any error conditions or unexpected terminations.
(#21) If batch processing is needed, these batch status reports must be available online for system support staff.

The application response time depends upon many factors, from application code and database design, computing platform, connectivity, bandwidth, usage patterns, operating system health, peak load, batch processing requirements and data intensive reports that compete with online processing.



What the Deloitte team brings to NCSEAS:

- ***Deloitte's comprehensive technical and operational expertise of the CA CSE system demonstrated by consistently achieving the system's availability and performance expectations***

The application, web and database server capacity will be appropriately sized and tuned for to the performance and availability requirements. We work with DWSS during the design sub-phase by incorporating architecture and design principles to address performance quality requirements. If performance issues are encountered in the application, we work with DWSS to identify areas of concerns. If the issues are related to code and/or database design we document and execute a corrective action plan. Additionally, we work with you to help determine if any issues associated with data center processing resources (e.g., hardware, telecommunications or network equipment, system or networking software) cause the performance issues.

Monitoring performance requires the use of right tools. These tools are used to effectively identify potential system issues, often times before they occur. These may be used to help

locate memory leaks, document metrics around how fast the application is performing; identify the components where the slowness is occurring and logging the state of the system at the time a performance issue occurs. In addition to monitoring application code performance, many of these tools also monitor the usage of infrastructure compute. Our team has strong competency in the effective use of performance monitoring tools to monitor application performance. We worked with DWSS to implement performance tuning that include database tuning as well as effectively configuring browser cache and server cache features for improved application performance. We work with you to help identify performance outlier functions such as data intensive reports, long running searches, network dependent interfaces or external web services. The system performance report will incorporate mutually agreed outliers and adequately represent the business day usage of NCSEAS.

Having managed several mission critical applications including the CA CSE system in California, and other Child Support systems in Pennsylvania and Florida, we understand the 99.9 percent system availability requirement that enables case workers to perform their functions. Deloitte is committed to collaborating with DWSS to deliver a highly available system that meets NCSEAS performance and reliability requirements.

The performance requirements mentioned in the RFP can be mainly classified into three types:

a. Application and Infrastructure performance

b. Performance Monitoring Tools

c. Batch Management

Managing Consistent Performance and Availability through Application and Infrastructure Design as well as System Operations Management

System availability requirements and industry standards driven application response time expectations define the availability and performance quality attributes of an application. Effective infrastructure design, application design and capacity planning play a key role towards designing an application that meets these quality attributes. We will work with DWSS to design highly available and scalable infrastructure that leverages clustering technologies. A clustered and well-sized infrastructure architecture reduces the probability of system outages in the event of a component failure in the participating nodes. We supplement the infrastructure design, by defining performance and availability aware application architecture and design patterns as well as enforcing code quality checks to verify application code development to those patterns.

We will schedule compute intensive backend activities such as data copy, backup operations, and batches at a time of the day when there is least contention with online activities. Incremental/differential back up policies will be applied to reduce any performance impact on the online applications. Performance Considerations in our Design Methodology.

During requirements validations we work with DWSS to analyze performance requirements as well as user behavior that could impact performance of the system. The CA CSE system embodies design principles that provide optimal performance. Any modifications or new development will also incorporate the same underlying design principles from CA CSE.

Our NCSEAS system is rooted on the following tenets that helps track and improve application performance.

- ***Multi-Tier System / Clustered environments***
- ***Load balanced servers***
- ***Externalizing the reporting and business analysis to a separate database***
- ***Separate batch processing infrastructure***
- ***Use of Design patterns and proper caching infrastructure to minimize the database round trips***
- ***Object Pooling and Connection Pooling for improved performance***
- ***Appropriate use of views at the database level***
- ***Server & OS level performance tuning***
- ***Code and Database query tuning***
- ***Network resources level tuning***
- ***Typical and Peak Load/Stress tests***
- ***Performance bench marking***
- ***Consistent monitoring and reporting of performance and availability metrics***

Our approach to application performance is designed to isolate performance issues early in the development process. This includes logging and remediating single-user performance defects during the unit test and system testing activities of the project, much before we initiate the load testing activities of the project

Features of Our Approach

Features of Our Approach	*Benefits to DWSS*
Implements architecture best practices methods and tools drawn from our global Center of Excellence (COE)	***Reduces risk and increases the overall reliability of the solution through refinements in methods and tools, gained from hundreds of implementations throughout the world***
Pattern driven development effort	***Performance and availability aware design patterns that guide application code development efforts e.g. caching of reference tables minimizes database round trips and database load to improve performance***
Multiple levels of monitoring for a holistic view of system performance	***Detailed performance diagnostics at the infrastructure, database query, and application code level to enable rapid troubleshooting of performance and availability issues***
Includes an efficient performance management, monitoring approach and toolset	***Enables automation across the life cycle phases the of plan to deliver, operate and improve application performance management***

Table 3.3- 12. Features and Benefits.

Monitoring Application Performance using the Right Monitoring Tools

Tools that Monitor Resource Usage

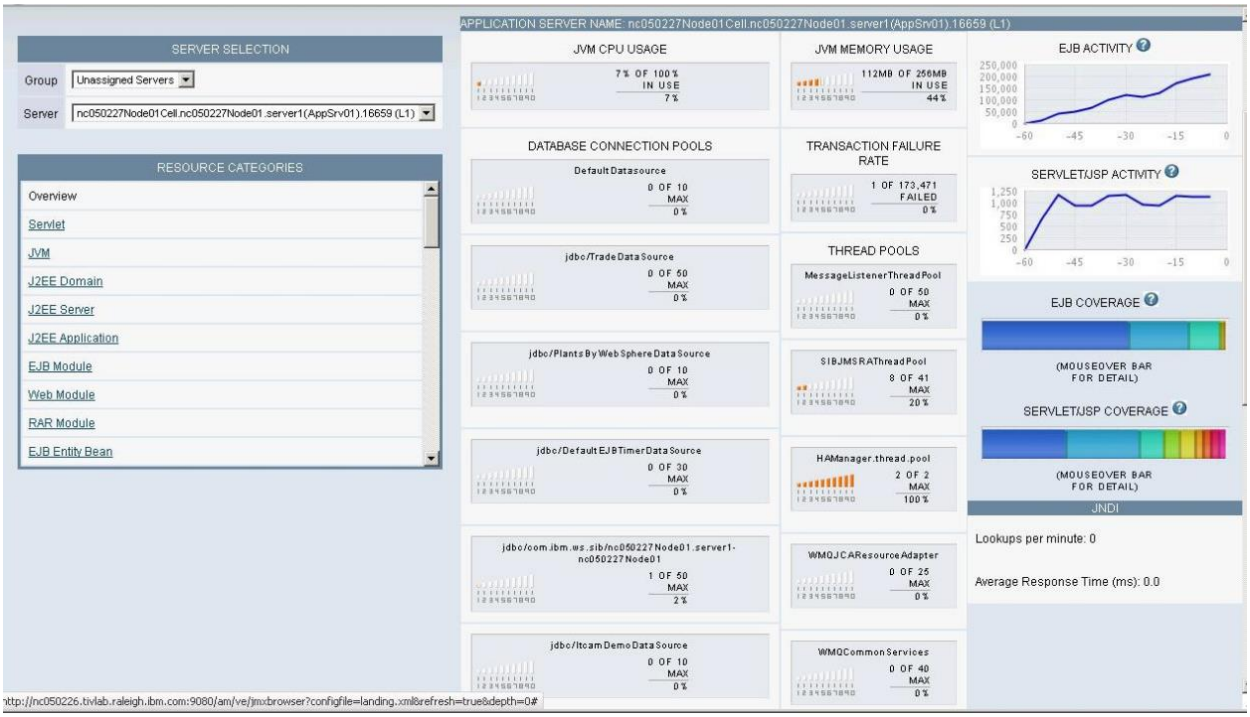
We have proposed the right set of monitoring tools that leverages existing DWSS tools to monitor the health of the system. We also have the resources who have experience in using these tools to help monitor, fine-tune and troubleshoot performance bottlenecks in a rapid fashion to provide consistent performance and availability of the system. For the NCSEAS implementation, we propose IBM Application Performance Monitoring tool to monitor IT infrastructure performance and availability. We propose use of IBM Optim for Database Monitoring. These products track and improve resource usage to help control hardware, software and labor costs.

The IBM APM tool allows you to monitor the system resource level utilization as well as perform application code level diagnostics. Resources monitored by the tool at an infrastructure level include CPU, Memory, Database connections, and MQ Connections. These reports can be analyzed to take corrective measures. The IBM Optim tool gives an in-depth insight into the DB2 database performance. It provides various reports such as top SQL queries which impact the system performance.

Sample Reports

We plan to utilize the capabilities provided by the APM monitoring suite for generating resource usage reports. Few sample reports are listed in the following.

The following snapshot depicts a Report showing information about CPU Usage, Database Connections, Memory usage, Thread Pools, and MQ Connections.



NV_CSE 2017-503

Figure 3.3- 8. Sample Report.

The following snapshot depicts a report to display heap utilized by the various Java Classes which are on the Application Server.

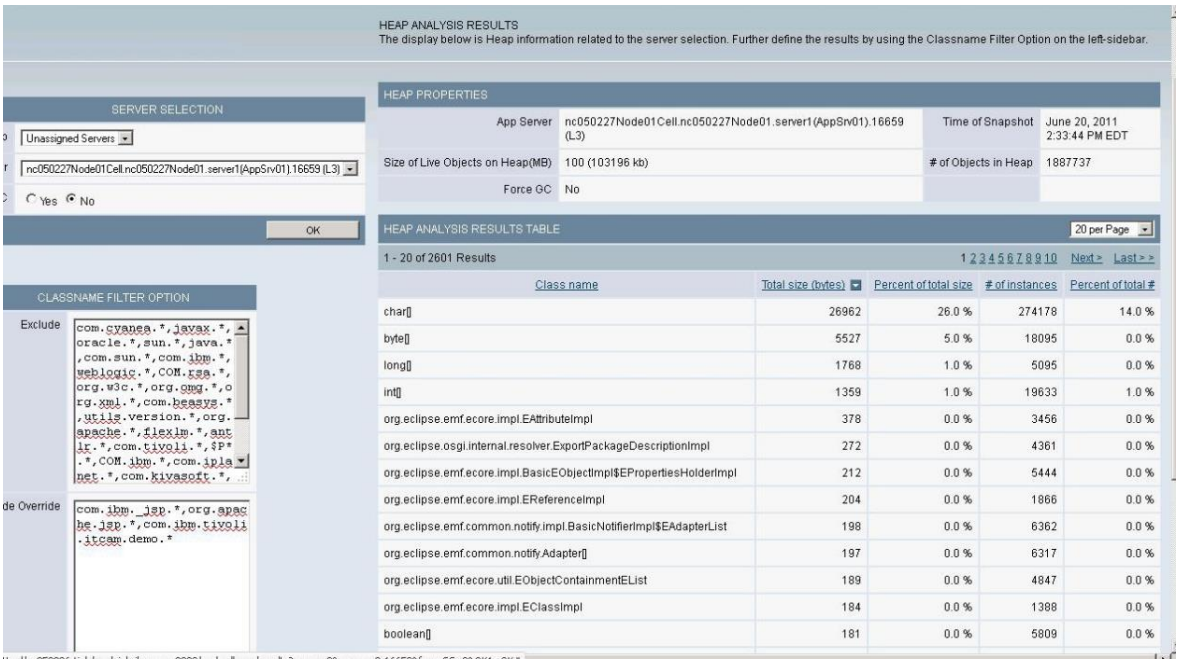


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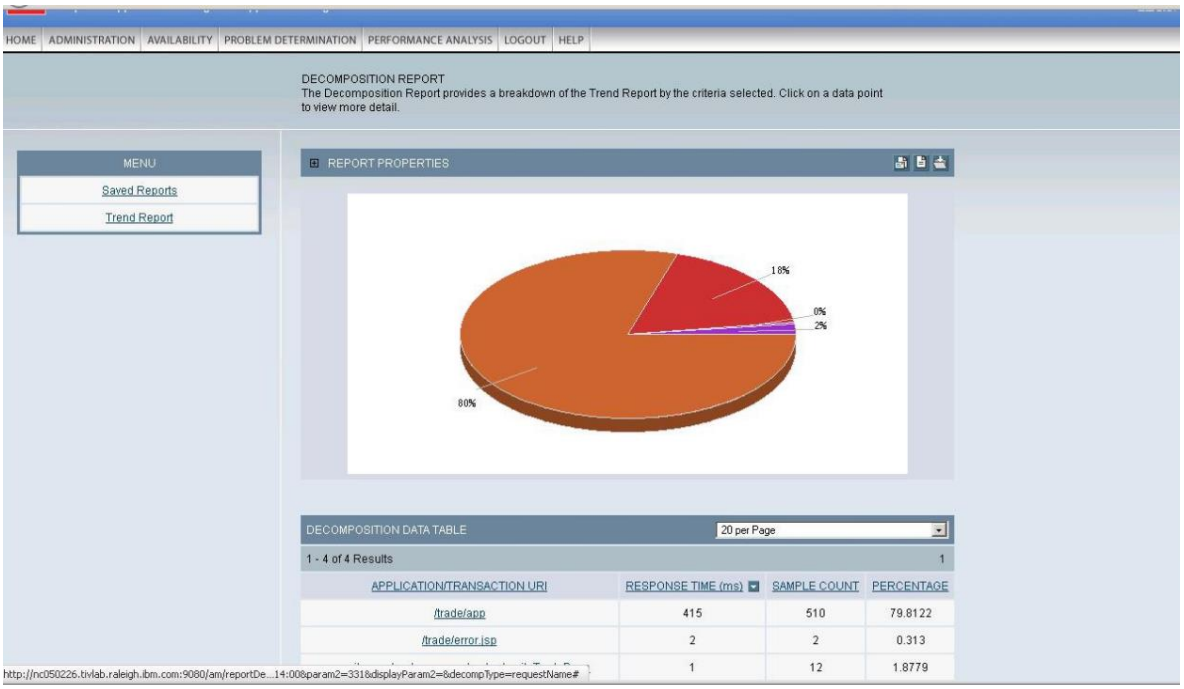
Figure 3.3- 9. Sample reports used to monitor the health of the application.

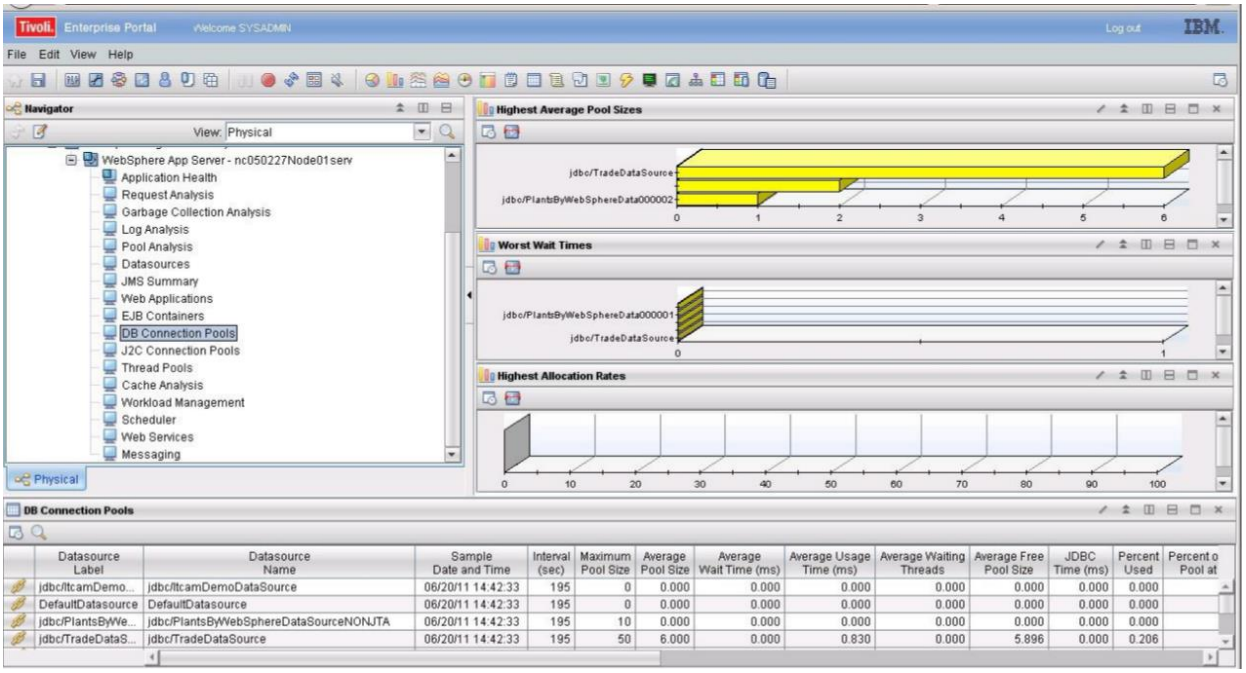
The following snapshot is a Decomposition report which display the response time for the components. This enables us to isolate and find trouble areas.



NV_CSE 2017-513

Figure 3.3- 10. Sample dashboard for response time.

The following report is a view into the utilization of DB Pools.



NV_CSE 2017-508

Figure 3.3- 11. Sample dashboard for database utilization and performance.

We work with DWSS to monitor the system health that is determined with the help of the following metrics:

Metric	*Meaning*
Average response time	***Include statistics, for example, servlet or enterprise beans response time. Response time statistics indicate how much time is spent in various parts of WebSphere Application Server and could quickly indicate where the problem is (for example, the servlet or the enterprise beans).***
Number of requests (transactions)	***Enables you to look at how much traffic is processed by WebSphere Application Server, helping you to determine the capacity that you have to manage. For e.g. an increase in system response time with an increased in the number of submitted transactions, is an indication for need to tune the system to handle the increased load or scale the system higher.***
Number of live HTTP sessions	***The number of live HTTP sessions reflects the concurrent usage of your site. The more concurrent live sessions, the more memory is required. As the number of live sessions increase, you might adjust the session time-out values or the Java virtual machine (JVM) heap available.***
Web server thread pools	***Interpret the web server thread pools, the web container thread pools, and the Object Request Broker (ORB) thread pools, and the data source or connection pool size together. These thread pools could constraint the performance due to their size. The thread pools setting can be too small or too large, therefore causing performance problems. Setting the thread pools too large impacts the amount of memory that is needed on a system or might cause too much work to flow downstream if downstream resources cannot handle a high influx of work. Setting thread pools too small might also cause bottlenecks if the downstream resource can handle an increase in workload.***
The web and Enterprise JavaBeans (EJB) thread pools	
Database and connection pool size	
Java virtual memory (JVM)	***Use the JVM metric to understand the JVM heap dynamics, including the frequency of garbage collection. This data can assist in setting the optimal heap size. In addition, use the metric to identify potential memory leaks.***

Metric	*Meaning*
CPU, I/O, System paging	***Monitor these system resources to confirm that you have enough system resources, for example, CPU, I/O, and paging, to handle the workload capacity.***

Table 3.3- 13. Application health metrics.

To Summarize, the IBM Application Performance Monitoring (APM) suite is an integrated solution that consolidates application management throughout an organization. It provides proactive monitoring, management, capacity planning and historical analysis for heterogeneous applications and application infrastructures.

This allows us to:

- ***Simplify monitoring and management tasks with customizable, role-based views***
- ***Use a common data model to provide a consistent view of performance and availability metrics across multiple application resources***
- ***Enable more effective problem-solving efforts across middleware, databases and applications***
- ***Quickly identify and isolate problems to take appropriate action***

Batch Process Management

The CA CSE system uses batch processing to perform critical offline business functions. As an example, the referral processing interfaces initiate cases in the system through batch processes. Enforcement remedies such as driver's license suspension and federal tax offset referrals are performed through batch processes. Batch processes constitute financial distribution and disbursement functions that distribute the money received.

CA CSE system has a robust custom batch framework. This framework is production proven and we have resources who have managed the batch processes effectively in California for the last ten years. We also have gained valuable experience in modifying the batch framework and processes in Oregon. Both these experiences will add value to our efforts in Nevada when we customize the batch processes to fit your needs. The batch framework first prepares the transactions to be processed by way of identifying the correct records that meet the processing criteria. For example, the driver's license suspension batch selects the delinquent participants who meet the threshold for initiating the driver's license suspension. The identified transactions are then processed in bulk. The batch framework provides capabilities to set error thresholds, number of threads to process, file locations if input or output files are involved in the process, and log file locations that can be set by way of property files without having to alter the batch programs. When there are errors such as validation errors when processing interface files or transactions that does not meet certain business criteria, the resultant errors are logged and can be viewed during the troubleshooting process. The batch specific configuration files can be set to handle batch errors by skipping a certain number of transactions based on the tolerance thresholds. When the errors are resolved and the batch is re-executed, the batch processes have re-start logic that will pick-up from where it stopped, thereby not resulting in duplicate processing.

A batch scheduling tool initiates the batch process. Batch scheduling tools allow repetitive tasks to be scheduled at the required frequency – Daily, Weekly, Monthly, Quarterly or Yearly. The batch scheduling tool is also used to create dependencies that determine which sequence of jobs can be executed in parallel and which are hard dependencies when an error in a batch job will result in a hard stop for a pre-defined set of jobs. We understand and acknowledge that the system must be available for eighteen (18) hours for case workers to perform business functions. We work with DWSS to identify batch functions that can be performed while the system is made available to the users. The CA CSE system supports certain batch processing simultaneously during online processing. If the need arises, we can identify the batch process that will not compete with major online functionality for transaction processing and performance and schedule them appropriately. We build a backup schedule that incorporates the right level of prioritization and timing in a way that does not degrade online performance. Additionally, the status of the scheduled batches can be tracked along with generation of online reports. Considering the technology stack of DWSS and requirements related to Batch Management, Deloitte recommends IBM Tivoli Workload Scheduler as the Batch Management tool.

IBM Tivoli Workload Scheduler

IBM Tivoli Workload Scheduler automates, monitors and controls batch process jobs. This leading software automation tool can manage hundreds of thousands of workloads a day—from a single point of control. When batch jobs are executed based on a schedule, information such as runtime and process duration to measure how long the batch process takes, error conditions that log any validation or other errors that occur during processing, and logs when abnormal terminations of the batch jobs are encountered is required to trouble shoot and fine-tune batch processes and batch performance. The IBM Tivoli Workload Scheduler provides out-of-the-box capabilities that log and monitor these data that are made available through a set of status reports that can be viewed and distributed to the appropriate personnel.

IBM Tivoli Workload Scheduler helps establish a workload automation backbone by driving composite workloads according to business policies. Some of the key features and benefits of IBM workload scheduler are:

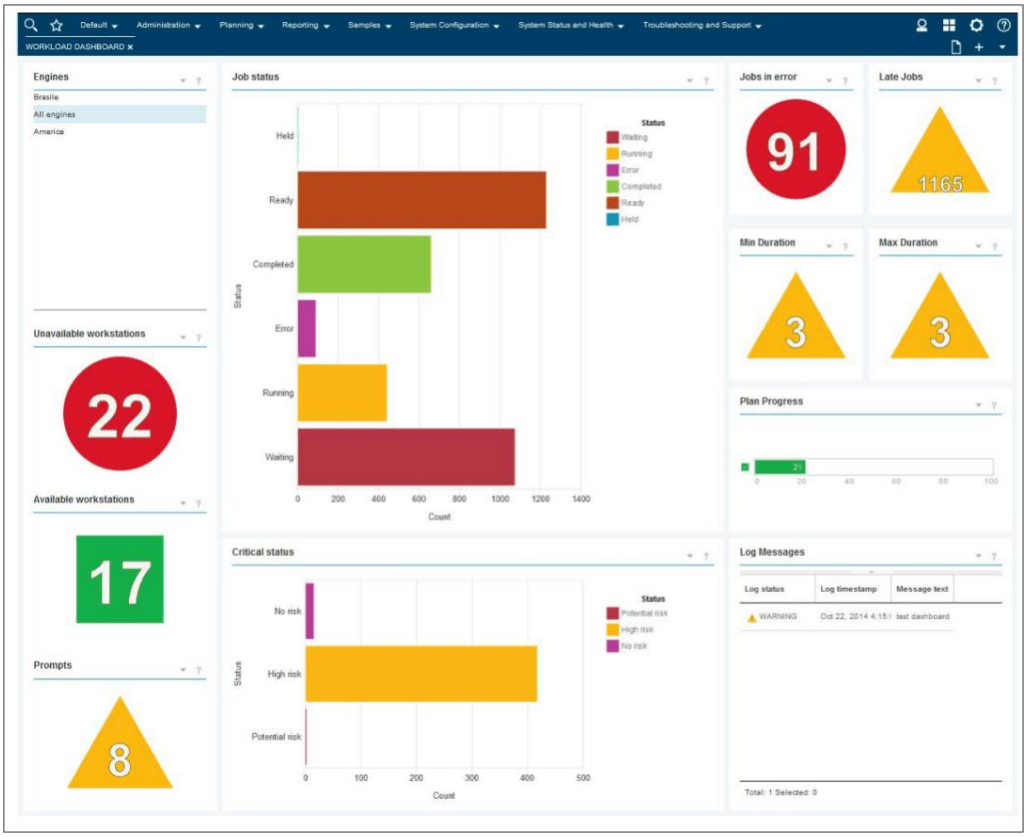
- ***Delivers high scalability, availability and performance. This fault-tolerant software even executes workloads during unplanned incidences with built-in redundancies and recovery processes.***
- ***Supports both calendar based and event based workload automation. You gain greater flexibility and innovation when moving from a static, platform-based view of production workloads to a dynamic service-driven environment.***
- ***From a single point of control, you can view and manage composite workloads to fine-tune performance and handle exceptions. You can easily create production reports and generate alerts based on workload, application or system events.***
- ***Provides open, standards based application programming interfaces (APIs) to extend workload automation control to custom and legacy applications. You can easily build***

composite batch services, integrate batch services with online services, or fully automate the composite workloads including both batch and online services.

- ***Leverages a service-oriented architecture based on IBM WebSphere components. You can control J2EE workloads and web services invocations, and manage dependencies between online and batch services.***
- ***Provides authorized system support statistics with an online view of batch statistics such as start and end times, success and failures and errors that occurred during the batch that are available to report out of the tool.***

While IBM Tivoli Workload Scheduler schedule address the operational reporting needs for DWSS, the NCSEAS application allows for the reporting of business reporting metrics. The batch jobs in NCSEAS log information such as the number of records processed rejected and resulted in an error that are used to report the statistics.

The following figure shows a sample Dashboard generated by IBM Workload Scheduler.



NV_CSE 2017-509

Figure 3.3- 12. IBM Workload Scheduler Dashboard.

The above Scheduler dashboards provide pictorial view of the jobs with different statuses, Waiting, Completed, Running, Held, Error, Ready. Also, number of minimum duration and maximum duration jobs along with the count high risk, low risk jobs etc.

Summary

Deloitte's has long record in implementing Child Support System's and similar large scale systems. We have the people and the processes to map requirements and design specifications against functionality of the transfer solution. The following is the summary of Performance Fit Gap.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Performance	***8***	***6***	***1***	***1***

Table 3.3- 14. Performance Fit Gap Analysis.

3.3.6 Communications

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#22) The system must offer modern communication channels (e.g., Hypertext Transfer Protocol (HTTP / HTTPS), Short Message Service (SMS) and email).
(#23) The client communication facility must support structured-data client responses to facilitate automated processing of returned data, (e.g., Extensible Markup Language (XML) and JavaScript Object Notation (JSON)).

We plan to provide Email and SMS channels which achieve faster and improved customer service to the citizens. Instead of having to wait for postal mail that can take days, case participants can:

- ***Check their case status online using a browser (HTTP/HTTPS)***
- ***Receive a notice via email or send documents by email***
- ***Receive near real time alerts via SMS if they have opted to receive them. CA CSE system does not currently provide the capability to store this information. Hence, modification is required to achieve this functionality***

Browser based HTTP allows a case worker to access and process their cases from any of their departmental offices and allows instantaneous transfer of a case from one office to another. This improves flexibility as well as case worker productivity.

The following figure shows a view of the communication channels currently used by the CA CSE system and highlights the enhancements needed to support DWSS' additional needs.

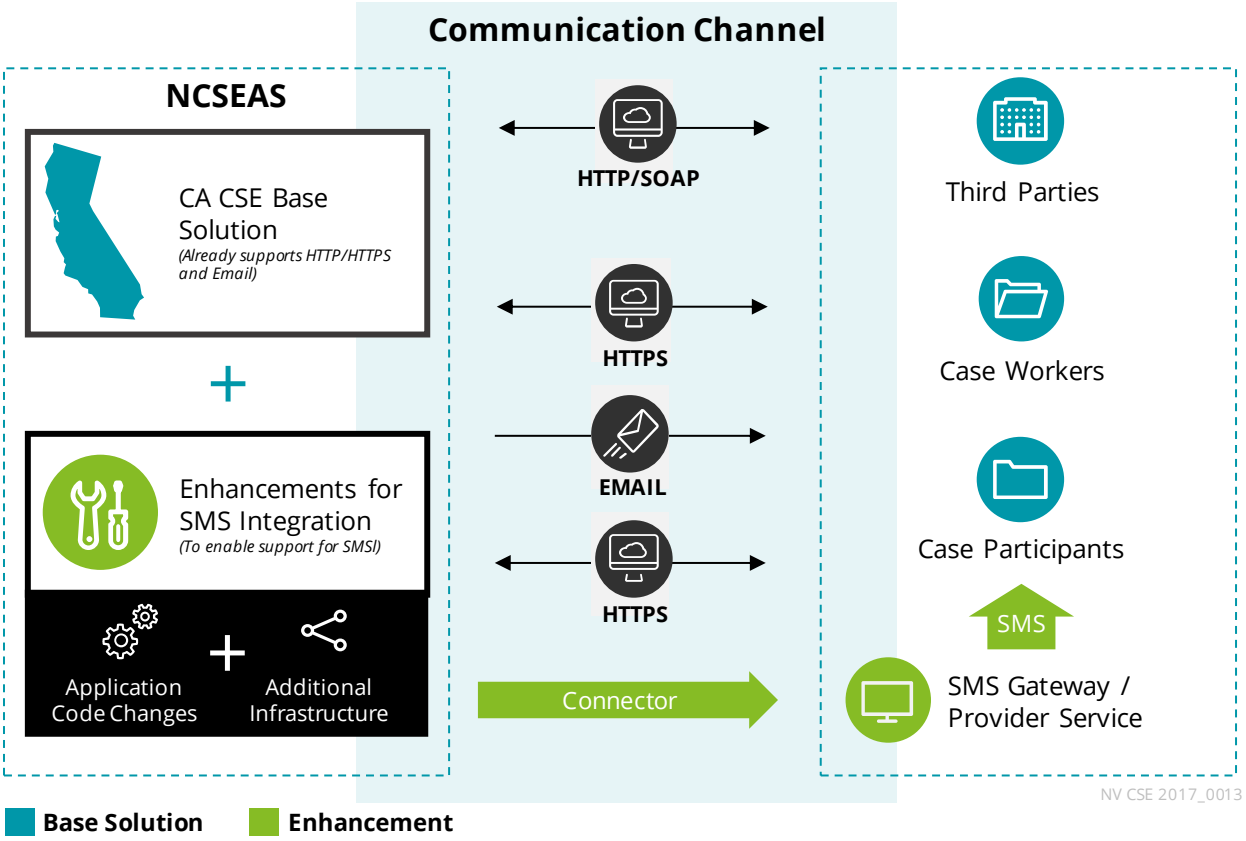


Figure 3.3- 13. NCSEAS communication channels – Simplified view.

HTTP/HTTPS

CA CSE system already uses HTTP/HTTPS as follows:

- ***Case workers access the worker portal user interface using browsers***
- ***Case participants access the customer portal using browsers***

CA CSE connects with external systems like QUICK (Query Interstate Cases for Kids) and the judicial e-filing system using web services (SOAP over HTTP).

In addition, NCSEAS solution will use HTTP also for internal communications like accessing the document management system and the PDF subsystem for generating forms/notices.

DWSS' architecture mandates the use of HTTPS for external communication over the internet. It secures data in motion by using high strength encryption.

Email

We use email as means for offline communication. This is most commonly used in the CA CSE system to:

- ***Send alerts or reminders to case participants (e.g., payment received, establishment complete)***
- ***Send interstate referrals if the destination state cannot accept referrals via CSENet***

The CA CSE system interfaces with email gateways out-of-the-box and supports the use of pre-formatted email templates for messages. The solution taps into the application server's connector and resource management features to achieve this, which in turn depends on an SMTP server as the delivery gateway. Deloitte works with DWSS to design email triggers and templates to meet DWSS' needs.

SMS

SMS alerts serve as an alternative to email for certain types of messages sent to case participants who have opted to receive alerts via SMS.

CA CSE system uses an n-tier, component-based, industry standard Java framework. For DWSS, we customize the CA CSE application to interface with SMS gateways. Based on our experience in implementing SMS messaging solutions for similar projects like Pennsylvania CSE, we propose the following steps to achieve this:

- ***Perform functional analysis to identify the list of alerts that can be delivered by SMS***
- ***Procure SMS gateway service from a suitable service provider***
- ***Construct and implement the enhancements to use the SMS gateway to send messages***

DISTINGUISHING FACTORS

- ***That Deloitte's SMS messaging solution for Pennsylvania Child Support caters to over 500,000 members who have opted to receive SMS messages. This constitutes over 95 percent of all CP and NCPs on open cases.***
- ***More than 100,000 messages are sent every month with a delivery success rate of over 99.6 percent.***

The enhancements would tap into the existing business flow and add another communication channel. For example, an alert is generated when a payment is received or a disbursement is initiated. If the case participant has opted to receive SMS alerts and their mobile phone information is updated, then the system sends them the necessary alerts via the SMS gateway.

Based on our experience from SMS text message implementation in Child Support, we recommend the following text messages as part of the NCSEAS system.

No.	Event	Message Details
1	Scheduled Events	You have a support appointment on @date@ at @time@. Call @office name@ at @number@ with questions
2	Money on Hold	Your support payment is held until you can provide a new address. Call @ office name@ at @number@ with questions
3	Missed Payment	We have not yet received your monthly support payment. Call @ office name@ at @number@ with questions
4	Early Intervention	To avoid enforcement actions you must pay support by the due date. Call @ office name@ at @number@ with questions

Table 3.3- 15. Text Messages.

A key feature of the NCSEAS solution is its ability to support real time and batch interfaces that can automatically process structured-data client responses. These interfaces can be web services or batch jobs. Each of these service end points correspond to a business event (e.g., a response to a notice or a form submission). NCSEAS solution is capable of

supporting structured data in the form of fixed length flat file, Extensible Markup Language (XML) or Javascript Object Notation (JSON). The interface pre-processing logic is customized to process the input file. We carefully examined the list of interfaces provided as part of the RFP. From our experience in implementing other CSE systems and evaluation of your interface inventory, we include the following interfaces as potential candidates for using XML OR JSON file formats.

- ***US Postal service***
- ***Customer service portal***

Summary

CA CSE offers modern communication channels like HTTP/HTTPs, email and SMS. Of these HTTP/HTTPS and email are already used by CA CSE and some customization is needed to implement them for NCSEAS. Implementation of SMS is via an enhancement. NCSEAS supports the automated processing of structured data responses from its clients. Specific details have to be designed and implemented in collaboration with the corresponding interface partners.

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Communications	2	0	2	0

Table 3.3- 16. Communications Fit Gap Analysis.

3.3.7 System Backup and Recovery

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#24) The system configuration must support Child Support Enforcement Program (CSEP) Recovery Point Objectives (RPOs) and Recovery Time Objectives (RTOs) (e.g., 72 hours RTO; end of previous business day RPO).
(#25) Online processes must reflect transactional concepts and must automatically roll back to a synchronization point to prevent partial completion in the event of system failure.
(#26) If batch processing is needed, batch processes must include roll back and restart capabilities to maintain data integrity and minimize recovery time in the event of system failure.

Our team has proven experience in designing solutions at the enterprise levels that incorporate industry standard data recovery design principles. We work with DWSS to support Recovery Point Objectives (RPO) and Recovery Time Objectives (RTOs), as specified in the RFP.

System Configuration

The system configuration includes complete load balancing using network load balancers, clustered servers, and storage to provide automated distribution of transaction loads such that there is no single point of failure. We have successfully supported other states in implementing stand-by databases in disaster recovery sites to provide immediate failover capability within the specified timeframes in the event of a primary data center outage.

We leverage DWSS' current load balancing mechanism to configure the solution. We bring in our experience in hardware load balancer, like F5. We understand that F5 Networks incorporates a dedicated SSL acceleration hardware card, which is used to encrypt and

decrypt SSL traffic. It enables it to do balancing or content switching based on data in the HTTPS request.

Database Backup

Data and application code are both required for restore when trying to recover from a disaster. We work with DWSS to implement a backup schedule based on our experiences in the states of California, Florida and Pennsylvania where we maintain CSE systems. We propose the following backup process that we implement working with you:

- ***Full back up of data and systems once every week***
- ***Incremental backup of data and systems every night***

We leverage our knowledge of CA CSE system. CA CSE database is 7.8 TB for OLTP. Full backup is done each Sunday. Incremental backup is done from Tuesday through Saturday. This strategy has been used to minimize the storage requirement needed for backup. In case of restoring the database, full backup from the weekend is restored followed by applying incremental backups.

Online Transactional Roll-Back

Online processes reflect transactional concepts and automatically roll back to a synchronization point to prevent partial completion in the event of system failure. A transaction, an atomic unit is a logical unit of work that contains one or more SQL statements. The effects of the SQL statements in a transaction are either all committed or all rolled back to a point to prevent partial completion, an approach that we have implemented in several states and is also supported by the California persistence framework.

Batch Restart

Unforeseen system failures could affect batch processes. In order to minimize the time lost, NCSEAS batch processes include roll back and restart capabilities. Our architecture is aligned with units of work that can be rolled-back to a synchronization point in the event of an issue that interrupts a transaction. Upon re-start the transactions that were processed completely are skipped and the batch processes resume at the point where the last uncommitted transaction is identified.

Summary

Deloitte has worked DWSS in establishing backup and disaster recovery procedures on other projects. Backup and disaster recovery are enterprise wide procedures that are easier to maintain when standardized across the Agency. We leverage our experience working with you in other projects to define the RTO and RPO for NCSEAS and build upon the established backup and disaster recovery procedures.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
System Backup and Recovery	***3***	***2***	***1***	***0***

Table 3.3- 17. System Backup and Recovery Fit Gap Analysis.

3.3.8 Database

We leverage DB2 database as it is consistent with CA CSE system and DWSS standards.

Master Data Management

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#27) The system must provide protections for updates to key data structures such as employer, person, case, and address designed to preserve data integrity and protect against data duplication. "Protections" may range from preventing the user from creating new records unless they have searched first to implementing a system of (human) "gatekeepers" or "data stewards" who are the only workers allowed to create new records.
(#28) If required, the system must be capable of obtaining key identifiers such as person IDs from an external source, or generating its own key identifiers.
(#29) The system must offer the capabilities for "sounds like" (SOUNDEX) searches.

CA CSE system does not use external Master Data Management tools. Instead, the system provides protection against inadvertent updates by users with a search and match functionality. We leverage this function in NCSEAS.

NCSEAS system provides protections for updates to key data structures such as employer, person, case, and address designed to preserve data integrity and protect against data duplication. "Protections" may range from preventing the user from creating new records unless they have searched first to implementing a system of (human) "gatekeepers" or "data stewards" who are the only workers allowed to create new records.

The purpose of this process is to identify the instance of a potential duplication of individual information. This process compares the individuals' demographic information being entered to existing records in NCSEAS to determine whether or not the individuals potentially match any existing records. If any potential matches are found, resolution by a NCSEAS user is required. The display and resolve matches processes support this resolution. NCSEAS supports role based authorization for specific functions in the system. As part of the implementation efforts, DWSS identify the staff who have authority to create new master data and associate them to the role who can create new records in the system.

The process begins by performing a series of checks on the initial demographic data. This series of checks includes examining the SSN, gender, and date of birth.

When multiple matches are found, the results are provided to a user for review and selection. If no potential match is found a new unique identifier is established and a record is created in the system. CA CSE supports the generation of its own identifier. We customize

NCSEAS system to acquire external source identifiers as needed and use it as a cross reference. One of the critical activities during a large system implementation effort is to clean-up the source data before it is converted. We recommend that DWSS start early and clean-up as much as possible before converting the data to NCSEAS. In our current transfer of the CSEAS to Oregon, we are working closely with Oregon to help them in clean-up of the data. We prioritized the data clean-up efforts to get early and often feed of data from their mainframe system. Our efforts in Oregon led to a full volume conversion that converted close to 90% of the data in our very first test attempt.

We work with DWSS to identify a set of external identifiers such as the public assistance case and participant identifier, the Child Welfare case or participant number, other state person and case identifiers for interstate cases etc., The CSEAS system comes with a set of cross reference data elements that help in associating these external person and case identifiers. If additional identifiers are required, we extend the data model to help associate these identifiers.

DB2 has "SOUNDEX" function which is useful for finding strings for which the sound is known but the precise spelling is not. It makes assumptions about the way that letters and combinations of letters sound that can help to search out words with similar sounds.

Database Management System

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#30) The system must use a robust, proven, current, and commercially available Relational Database Management System (RDBMS).
(#31) The system must use capabilities of the RDBMS for transaction control.
(#32) The RDBMS must provide the ability to encrypt highly sensitive data within the database.
(#33) The database must be capable of defining fields to support a broad range of characters (e.g., Unicode basic Latin subset, mixed case).

NCSEAS is a transfer of CA CSE database solution which uses DB2 as Relational Database Management System (RDBMS), which is robust, proven, current, and commercially available. DB2 does already exist in DWSS product catalog, and Deloitte is well versed with the Databases which connect to worker, customer portal and were used in other DWSS projects. DB2 is designed to store, analyze and retrieve the data efficiently. DB2 product is extended with the support of Object-Oriented features and non-relational structures with XML. CA CSE has more than 750 tables spread across 190 tablespaces.

NCSEAS solution uses capabilities of the RDBMS for transaction control. Transactions are a group of database operations combined into a logical unit of work, and are used to control and maintain the consistency and integrity of each database despite errors that might occur in the system. A transaction consists of a series of SQL SELECT, INSERT, UPDATE, or DELETE statements. If no errors occur during a transaction, modifications in the transaction become a permanent part of the database. If errors occur, none of the modifications are saved to the database.

A transaction is considered to be a local transaction when it is a single-phase transaction and is handled by the database directly. Transactions are considered to be distributed transactions when they are coordinated by a transaction monitor and use fail-safe mechanisms (such as two-phase commit) for transaction resolution.

DB2 provides the ability to encrypt highly sensitive data within the database. There is an increasing need for privacy of stored data in NCSEAS. This has surfaced in particular with web-based applications where the user has entered data (such as social security numbers and federal tax information). Data is stored in encrypted storage devices that provide security of data at rest.

The DB2 database supports a broad range of characters (e.g., Unicode basic Latin subset, mixed case). Applications work with multiple database components on multiple platforms. The information that flows between these various servers may go through several character conversions, and these conversions should be transparent to the user.

Database Design

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#34) The system must employ a normalized database design that takes advantage of the capabilities of the RDBMS, including:

- one-to-many relationships
- many-to-many relationships
- database-controlled transactions and commit points
- proper use of data types and database-enforced constraints to prevent invalid data from being introduced

(#35) The database design must treat the following as first-class data structures, identifiable by a primary key, and contained in a primary database table and related tables:

- case
- person
- employer

(#36) The database must not use Personally Identifiable Information (PII) or other potentially sensitive data (e.g., Social Security Numbers (SSNs), Federal Employer Identification Numbers (FEINs)) as primary key values.

(#37) The database / system must automatically embed User ID and date/time stamp information on every transaction that creates or updates a database record.

(#38) The database design must provide audit capabilities for any financial balances stored in the database with the capability to reconstruct those balances if necessary.

(#39) System capabilities must make direct modification of balances using database utilities or other means unnecessary under all circumstances.

The system employs a normalized database design that takes advantage of the capabilities of the RDBMS, including: one-to-many relationships, many-to-many relationships, database-controlled transactions and commit points, and proper use of data types and database-enforced constraints to prevent invalid data from being introduced. NCSEAS RDBMS capability is a transfer of CA CSE database solution, and this is similar to other DWSS projects.

Our solution removes data redundancy (i.e., the same piece of data shall not be stored in more than one place). Duplicate data not only waste storage spaces but also easily lead to inconsistencies. The database design also incorporates data integrity and accuracy. Any record in database table is identifiable by a primary key, and in turn, is associated with child tables using foreign keys.

Primary keys in database are uniquely identifiable numbers, which do not contain any business data, like Personally Identifiable Information (PII) or other potentially sensitive data (e.g., Social Security Numbers (SSNs), Federal Employer Identification Numbers (FEINs)). We enforce strict discipline in database design, as we consider this as the foundation of successful long-term solution.

Our NCSEAS solution automatically embeds User ID and date/time stamp information on each transaction that creates or updates a database record. Each table has last updated by

and last updated date attributes included. This provides audit capability for each transaction. The solution provides audit capabilities for any financial balances stored in the database with the capability to reconstruct those balances, if necessary. The system capabilities make direct modification of balances using database utilities or other means unnecessary under each circumstance.

Summary

We leverage the DB2 database that is the base for the CA CSE system. DB2 provides the relational database capabilities and CA CSE database uses relational concepts such as database constraints and the concept of primary and foreign keys consistent with DWSS standards.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Database	***13***	***11***	***2***	***0***

Table 3.3- 18. Database Fit Gap Analysis.

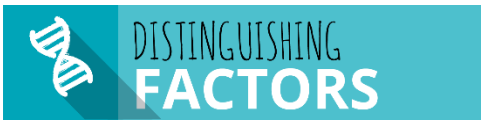
3.3.9 Security

Security Standards

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#40) The system must comply with the Division of Welfare and Supportive Services (DWSS) and CSEP security standards, IRS Publication 1075, as well as other applicable State and Federal security regulations.

Our strategy to meet regulatory and contractual requirements leverages our Security & Privacy Risk Framework which contains a rationalized set of requirements and associated risk statements. The framework has a common repository of information security requirements containing authoritative sources from more than 300 different laws and industry sources, including IRS Pub 1075 (Dated September, 2016), NIST SP 800-53 Revision 4, and Automated Systems for Child Support Enhancement: A Guide for States (OCSE guidelines updated 2009), herein referred as OCSE Guidelines.



Our Security and Privacy Risk Framework:

- ***Contains authoritative sources from more than 300 laws and industry sources***
- ***Provides a core set of risk and compliance management solutions***
- ***Allows for consistent comparison, prioritization, and aggregation of risk and compliance across Nevada's business and functional units***

In concert with DWSS, we leverage our security risk framework as a baseline for security controls. It also help us update your security requirements, controls, and standards to establish a tailored approach for the Security Management Plan (SMP).

This risk-based framework helps to address the security and compliance tracking requirements for the implementation and can accelerate the evaluation of the regulatory controls. Using the framework means we can deliver within the requested time frame while addressing your security objectives. It facilitates the development of a broad, agency wide security perspective that covers the following areas:

- ***Policies, standards, procedures, and guidelines***
- ***Access control (authentication, authorization, and trust relationships)***
- ***Data protection, including encryption tools and techniques***
- ***Network security (e.g., secure socket layer (SSL), transport layer security (TLS), and firewall)***
- ***Logging and monitoring***
- ***Change management***

The NCSEAS system processes different information types (FTI, PII) depending on the function in use. The function and the information processed by the function collectively is its "risk profile." The standards applicable to a given risk profile are based on the data or information type processed by the function. We design and implement security and privacy controls for each "profile" such that these controls address the applicable requirements from regulations and standards.

Security Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#41) The system must implement security controls in the data access tier in such a way that all access to the data must go through a uniform security layer.
(#42) The system must provide a single sign-on and authentication scheme with an external user repository for all core system users and partners.
(#43) The system must control and limit security administration to a small number of security personnel.
(#44) The system must provide the capability to securely manage access to parameter tables.
(#45) The system must apply specialized security mechanisms (e.g., applying a "lockout" to sensitive cases or ensuring workers do not access cases they are personally involved in).
(#46) The system must log access to sensitive data.
(#47) The system must provide role-based access controls.
(#48) The system must include the ability to indicate when a worker has a conflict of interest with a case.
(#49) The system must control access to system data using roles-based security and use automatic sign-off and timeout techniques.
(#50) The system must detect, record, and lock out unauthorized attempts to gain access to system software and data.
(#51) The system must be capable of monitoring access and use including both successful and unsuccessful system access.
(#52) Security must be role based and extend to the functional screen level and limit the user's capability to view and / or update those screens.

NCSEAS supports a robust security architecture including security controls in the data access tier, single sign-on, protection of confidential cases, role-based security for view/add/change/delete actions, user lockout, and other functions.

NCSEAS technical architecture implements network zone security through the use of network segmentation across tiers. Database servers are protected in a secure data zone, application servers in a trusted zone and the reverse proxy servers in the DMZ. In addition, data in transit is protected by using TSL/SSL in communication across the tiers. File transfer communications use AES 128-bit encryption algorithms where supported by the infrastructure, and a minimum of AES 128-bit encryption in the remaining areas.

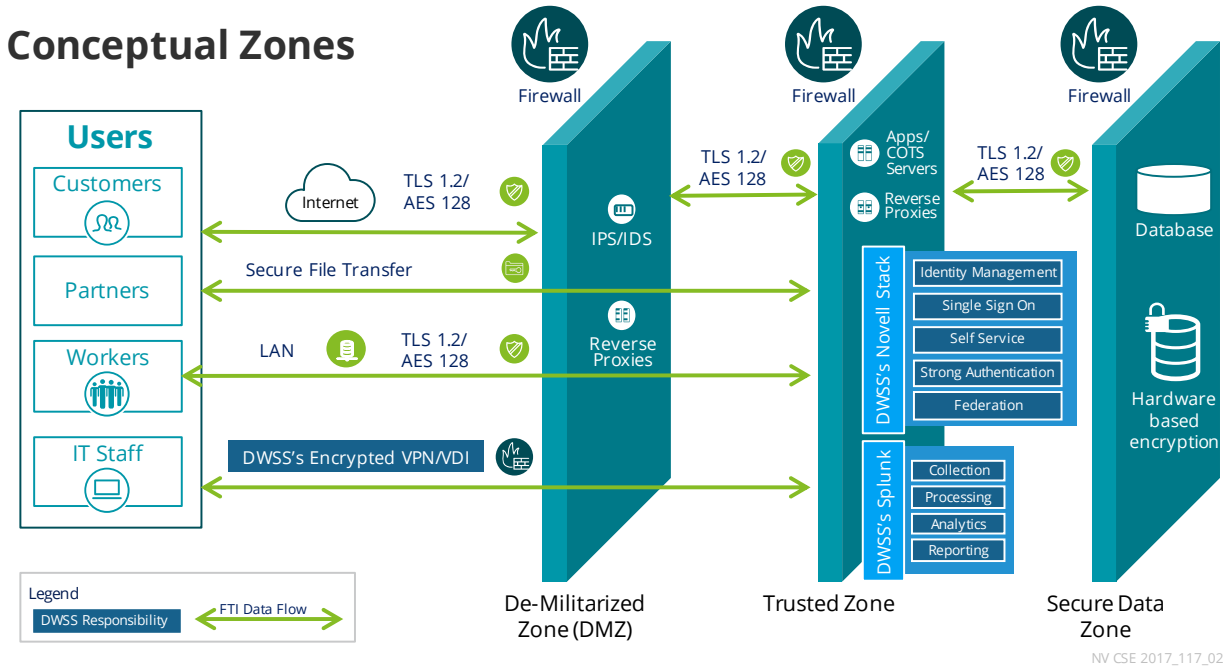


Figure 3.3- 13. Conceptual Zones.

The NCSEAS solution addresses the Identification and Authentication controls as required by IRS Pub 1075 (Date September, 2016) and OCSE Guidelines. As implemented in CA CSE, the solution uses role-based access controls (RBAC) to protect access to data and functions. Users, including CSP employees, contractors, and employees of partner agencies (as specified above), require system specific roles based on their duties within the application. The CA CSE system has built-in capabilities that enables authorized users to assign users to roles. Deloitte will work with the DWSS to use this RBAC approach to provide access that addresses the NCSEAS segregation of duties (SOD) requirements. The NCSEAS solution uses the principle of least access privileges, to limit the privileged accounts and roles to specific individuals based on their job responsibilities.

The CA CSE solution will be retrofitted to support integration with the Agency's existing security infrastructure (i.e., Novell Access Manager and Novell eDirectory) for authentication, coarse grained authorization, self-service, user registration, session management, single sign-on (SSO), user identity, provisioning and password management. This allows DWSS to restrict access to sensitive information within the application. DWSS will be responsible for configuring the Novell Access Manager and Novell eDirectory as required for the NCSEAS solution. The NCSEAS solution will use Google authenticator services for Multi-Factor Authentication (MFA). Deloitte will support DWSS to integrate Google authenticator and the NCSEAS solution with their existing security infrastructure.

The NCSEAS solution leverages existing capabilities in the CA CSE system to enforce fine grained authorization (screen controls level) within the application. This authorization is based on the user attributes that Novell Access Manager will be configured to return during authentication. This allows the application to apply specialized security mechanisms like detecting a conflict of interest with a case and the ability to control who has access to view, add, or modify data within the system.

The NCSEAS solution will leverage Novell Access Manager (NAM) for session management for active system sessions and to enforce automatic sign-off and timeout techniques based on security requirements. Additionally, NAM security policies will be used to lock the account that has multiple incorrect and/or unauthorized attempts to gain access to system. Enabling these security features within the NCSEAS solution addresses Session Termination (AC-12), Unsuccessful Logon Attempts (AC-7) controls of NIST SP 800-53 Revision 4 and IRS Pub 1075 (Date September, 2016).

NCSEAS solution will leverage Federal Information Processing Standards (FIPS) 140-2 compliant hardware level encrypted storage drives to protect system data including the parameter tables and other application data tables with sensitive data. This solution transparently encrypts database data files before writing them to the disk, protecting sensitive application data from direct access at the operating system level. In addition to encrypting the data at rest, the NCSEAS solution uses SSL and TLS to secure data in transit.

To provide an audit log trail, our solution leverages the State's Splunk instance or audit data correlation and reporting that address Audit and Accountability (AU) controls of NIST SP 800-53 Revision 4 and IRS Pub 1075 (Date September, 2016). The NCSEAS system, the security components and the IBM DB2 databases are configured to generate audit data per auditing and accountability requirements, including responsible user and the date/time of the event. These security event logs are integrated with the existing Splunk implementation by DWSS for collection, analysis, reports, alerts and correlation. The logs capture audit trails for the following security events:

- ***User authentication (success and failures)***
- ***User authorization attempts (success and failures)***
- ***Access to NCSEAS system data, including sensitive data like Social Security Numbers (SSN) and other Personal Identifiable Information (PII)***
- ***Changes to critical records and/or data fields including, but not limited to, arrearage balance, monthly court-ordered support amounts, and family violence indicator***

NCSEAS is configured for alerts for sensitive events such as excessive failed login attempts in the production environment by DWSS so that appropriate corrective actions can be taken in a timely manner.

Passwords

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#53) The system must adhere to all applicable DWSS, State and Federal security password requirements as specified in Internal Revenue Service (IRS) Publication 1075.

The CA CSE system supports the use and enforcement of passwords to uniquely identify a system user and to control access to view and update capabilities at the screen level. Customization is required to adhere to the IRS 1075 publication Sept 2016 and the OCSE Guidelines. The Security Management Plan (SMP) includes applicable DWSS, State, and Federal security password requirements and policies (e.g., password construction, length, aging, and invalid access attempts). The NCSEAS system follows the password policies, as

stated in the SMP when assigning passwords. Refer Section V: 3.3.9.2 Security Architecture for more information on NCSEAS solution approach for password management.

IRS Data

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#54) The system must protect data designated as IRS data from unauthorized inquiries. (#55) The system must comply with IRS Publication 1075.

NCSEAS meets basic requirements for the protection of IRS data as required by IRS Pub 1075 (Date September, 2016). Deloitte's approach is to align NCSEAS solution with DWSS and IRS Pub 1075 (Date September, 2016). Our solution will use FIPS 140-2 compliant encryption to protect data at-rest and data in-transit. The FTI data in use will be labelled according to the IRS Pub 1075 (Date September, 2016).

Audit, Logging and Reporting

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#56) For security purposes, the system must be capable of maintaining information on all changes to critical records and / or data fields (e.g., arrearage balance, monthly court-ordered support amounts, SSN, name, family violence indicator, etc.) including identification of the responsible system user / caseworker and date / time of the change.

To provide an audit log trail, the NCSEAS system will leverage the DWSS Splunk implementation for audit data correlation and reporting that addresses Audit and Accountability (AU) controls of NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).

Deloitte is a Splunk Master Global System Integrator (GSI) Partner, allowing us to deliver global, multi-functional platforms collaboratively with Splunk to help our customers achieve Operational Intelligence across the enterprise. We have 50+ Splunk certified professionals that have been delivering quality Splunk services and building custom solutions across multiple industries. We have proven success in delivering solutions that allow our clients to improve their overall security posture, gain richer insight into their diverse data sets, and gain efficiencies in their IT infrastructures.

The NCSEAS system, the security components and the IBM DB2 databases generate audit data per auditing and accountability requirements, including the capability of maintaining information on changes to critical records and/or data fields, responsible user and the date/time of the event. These security event logs are integrated with the existing DWSS Splunk implementation for collection and correlation.

The logs capture audit trails for the following security events:

- ***User authentication (login success and failures)***
- ***User authorization attempts (success and failures)***
- ***Access to NCSEAS system data, including sensitive data like Social Security Numbers (SSN) and other Personal Identifiable Information (PII)***
- ***Changes to critical records and/or data fields including, but not limited to, arrearage balance, monthly court-ordered support amounts, and family violence indicator***

The NCSEAS solution is configured for alerts for sensitive events such as excessive failed login attempts in the production environment by the State so that appropriate corrective actions can be taken in a timely manner. Splunk configuration correlates the data based on the type of event, time of occurrence and trace it back to the user action that triggered the event. DWSS will be responsible for configuring the Splunk use cases for NCSEAS solution, monitoring Splunk licensing requirements, Splunk operations and security monitoring not limited to reports, dashboards, alerts, correlation rules and incident response workflows. Deloitte will support DWSS for setting-up the Splunk log forwarders to ingest logs from servers/COTS Products as required for the NCSEAS solution.

Summary

We leverage the existing Novell Access Manager and Novell eDirectory server to provide authentication, single-sign on and coarse grained authorization features for NCSEAS. We leverage CA CSE system's role based access control capabilities to provide fine grained authorization and protection of sensitive information. We use encrypted SSDs to protect data at rest and TLS/SSL to protect data in transit.

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Security	17	6	7	4

Table 3.3- 19. Security Fit Gap Analysis.

3.3.10 Interfaces

General

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#57) The system must support all data exchanges with external data partners currently being handled in Nevada Operations of Multi-Automated Data Systems (NOMADS) application.
(#58) The system must provide an interface with IV-A in compensation for the separation of the IV-A and IV-D systems.

CA CSE system supports federal, state and third party business interface partners. Federal interfaces require minimum modification in meeting NCSEAS requirements. CA CSE system supports Federal interfaces such as Federal Case Registry, Federal Tax Offset, Electronic Income Withholding Order, Child Support Enforcement Network (CSENet), Query Interstate Cases for Kids (QUICK) National Directory of New Hires (NDNH) and these interfaces can be implemented "as-is". Of the major interfaces, the interface with NOMADS is the most important part of our solution. This interface constitutes for a majority of the referred caseload. Deloitte brings in firsthand knowledge and experience of NOMADS to support the interfaces in the CA CSE system. We understand the data structures, business object models, and databases in NOMADS and how they are getting utilized in interfaces, portal applications, batch applications and business rules across the IV-A and the IV-D Systems in Nevada. This is the most important referral source and is very critical to the successful implementation of NCSEAS. We are uniquely positioned to de-couple the integrated NOMADS system and create an interface with NOMADS to exchange information across both programs. While other vendors may have implemented a similar interface, no one else has the knowledge and experience in NOMADS as well as CSEAS which gives us the combined advantage. We also have experience in managing interfaces with agencies that are going

through system transformations of their own. For example, in Oregon, we are designing interfaces with the IVA agency and Department of Motor vehicle agency who are implementing their own systems at the same time when the Child Support system is being implemented. Our current approach to deal with phased roll-out at the same time for these Agencies is complex and we have demonstrated our ability to work with the State of Oregon to collaboratively build an approach that minimizes impact to legacy systems on both sides.

We work with you to customize the state and third-party interfaces from the overall fifty eight existing interfaces of the NCSEAS system such as IV-A, IV-E, Title XIX, Department of Motor Vehicles, Office of Vital Statistics (OVS), and Department of Wildlife, that are file based to meet the functional and technical requirements of NCSEAS system. We also work with you to modify the Employer Web Services real-time interface.

Validation of data coming from each inbound interface in CA CSE system is performed at the record level, field and business level based on detailed design deliverable, before the data is saved into the NCSEAS system. Inbound interface such as referral data from IV-A, IV-E, and CSENet are processed and integrated to create case and participant routines. Outbound interfaces such as positive pay file and Nevada Case Registry are validated using business, field and record level validations based on design specifications before the data is transferred to the external agencies. Exceptions caused due to field level, record level and business validation failure during interface processing for inbound and outbound interfaces are logged in the NCSEAS system. As an example, different validation strategies are applied when interface data is received from Locate partners such as DMV in the CA CSE system. Processing of inbound interfaces in the CA CSE system also creates Tasks/Activity logs for the worker to review the data. As an example, a task is created for the participants to be merged during processing of inbound interface if one or more potential or exact matching participants are found in CA CSE system based on participant's updated/new primary or secondary name, SSN or date of birth.

Phased rollout requires different rules for splitting and merging the files for the inbound and outbound interfaces to minimize the impact to legacy, NCSEAS and external partners. We work with DWSS to identify the necessary changes during design for DWSS to incorporate and implement the changes needed for splitting and merging the records in DWSS system for phased rollout.

CA CSE system supports interfaces to bring referral, member updates and grant information and send back financial summary information. These interfaces include information for benefit amount, aid code, eligibility status, demographic details, payment details and third party information. We work with you during requirements and design to modify the interfaces in the CA CSE system to share information for participant demographics, address, third party insurance information, School attendance, Eligibility and grant information that are currently shared between IVA, Title XIX, IV-E and IVD. We also work with you during requirements and design to define strategy for separation of the person index (PIN), reference table data for employer, school, financial institutions that is shared in both the IV-A and IV-D system, thereby minimizing the impact of separation.

CA CSE system referral interface supports the referral process when a public assistance case with absent parent/NCP is created in public assistance system. A new case creation in the public assistance system for IV-A, Title XIX and IV-E program creates a referral for IV-D system. CA CSE system update interface supports the capability to receive updates from public assistance system when demographic and assistance changes are made in the public assistance system. The CA CSE system also provides capability to create tasks for activities that require worker intervention after the data is received through the interface. We work with you during design to define the task when demographics and emancipation date of the case are changed, unearned income is added, and other actions are performed in IV-A, IV-E and Title XIX resulting in an update interface from IVA, IV-E and Title XIX.

CA CSE system also provides interface to send financial summary information including child support amount and frequency from the IV-D system to IV-A system.

During technical JAD sessions, we work with you and interface partners to design interface to send any error records back from IV-D to IV-A, IV-E and Title XIX that originated from IV-A and requires user intervention. Our active participation in Oregon interface coordination team helped the state of Oregon to define interface structures, business rules and validations. We plan to setup a similar interface coordination team working with DWSS.

The NCSEAS system interface architecture consists of Federal, State and third party business interface partners that use either a file based or web service transport protocol to exchange data. Inbound files and web service messages are routed securely through the Enterprise Service Bus (ESB) to the NCSEAS system. Outbound interface files and web service messages from the NCSEAS system are securely routed through ESB to Federal, State and third party business interface partners. As a leading practice and lesson learned from our Oregon Child Support project, we recommend that the Agency establish an Interface coordinator at the start of the project. We work with you to help establish a schedule and cadence for designing, developing and testing the interface file exchanges early to make sure the interfaces are ready in time for the NCSEAS to test and implement.

Interface Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#59) The system must provide the ability to implement web services, including an ability to interact securely, in real-time, with other systems via standard Internet protocols such as Hypertext Transfer Protocol (HTTP/HTTPS), Extensible Markup Language (XML), and Representational State Transfer (REST).

(#60) The system must incorporate a mechanism such as an Enterprise Service Bus (ESB) to decouple the application layer from communication channels, and to provide data transformation services.

(#61) The system must support standards based data exchange models (e.g., National Information Exchange Model (NIEM)) and protocols.

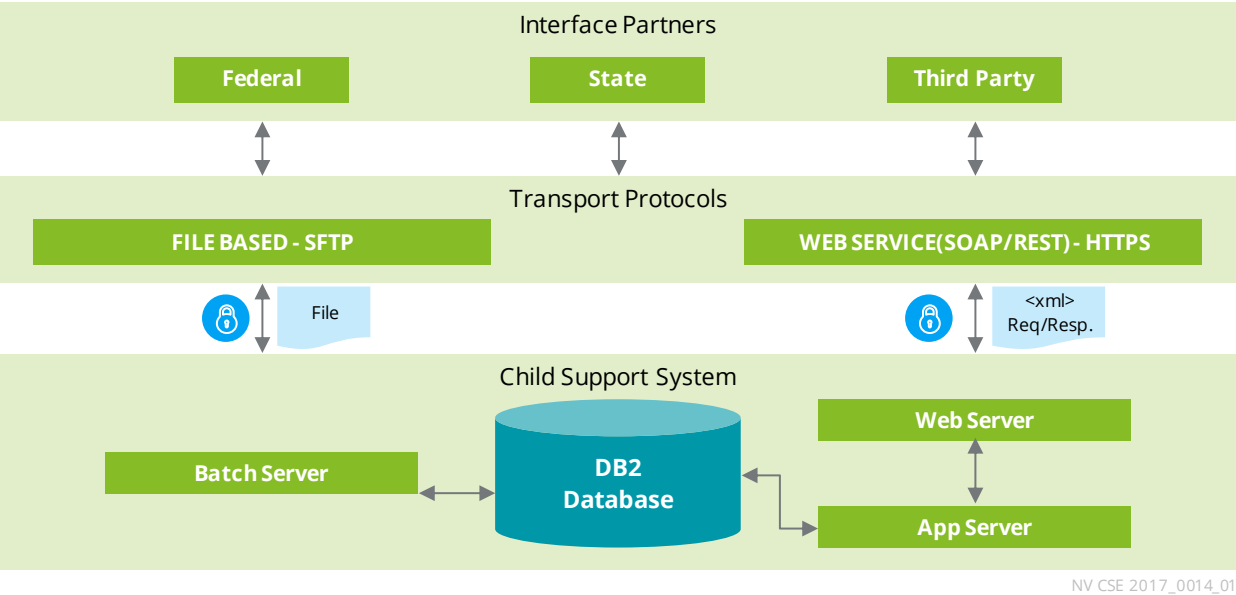


Figure 3.3- 14. Interface Architecture.

While we understand a majority of the NCSEAS solution is file based data exchange, our NCSEAS solution also supports web services needed for Employer Web Services (EWS), Query Interstate Cases for Kids (QUICK), Court Interface for e-filing. NCSEAS solution leverages Web Service Description Language (WSDL) as the standard for describing the structure and location of web services. To facilitate the greatest return on investment on these services, we develop a set of standards for WSDLs that promotes interoperability and reusability. We leverage Web Service – Interoperability (WS-I) guidelines and profiles implemented as a set of assertions that test various requirements for the structure of a WSDL document. We maintain standards for services documentation in our Programming Standards and Guidelines that enforce standard specifications and industry best practices.

Our architecture is based on open standards to allow for compliance industry and technology standards as well as provide a baseline for the most compatibility when exchanging information with other state agencies and partners. Our solution has the ability to support a variety of standard messaging and transfer protocols including SOAP, HTTP/S, REST, FTP and SFTP.

XML based interfaces facilitate transformation and routing of messages and secure delivery of messages between NCSEAS and other systems.

Use of these standards allows developers to focus on the functional implementation without the need to worry about the transport mechanism to exchange data. Also existing technology investments are reused by connecting to legacy systems through requisite adapters as desired by DWSS.

Deloitte works with you during design to determine the use of ESB for web services that are used in Query Interstate Cases for Kids (QUICK), Court Interface for e-filing, Genetic Testing to track genetic test results, and Employer Web Services (EWS) to facilitate Web-based interactions with Nevada's employers. This allows rapid use and deployment of web services. This also enables standard based integration to be build, edited and coded without low level coding. We work with you to design the routing of the other file based exchanges through the ESB.

We work with you during Elaboration phase to identify and implement data exchanges with external partners that comply with standards based exchanges that require common set of data elements needed for NIEM and National Automated Clearing House Association (NACHA) and adhere to compliance standards needed for those standards in NCSEAS. We work with you to design and support Automated Clearing House (ACH) transaction that uses NACHA standards and are required in financial business function. For Example, NACHA standards can be used to for transmitting financial benefits to DWSS's Financial institution that handles financial disbursement or Department of treasury to Citizen's EFT card.

Summary

Deloitte has a long record in implementing Child Support System's interfaces. We also bring in firsthand knowledge and experience of NOMADS and CA CSE system to support and map the requirements and design specifications against functionality of the transfer solution. The following is the summary of Interfaces Fit Gap.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Interfaces	*5*	*0*	*2*	*3*

Table 3.3- 20. Interfaces Fit Gap Analysis.

3.3.11 User Interface

User Interface Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#62) The system must provide a graphical user interface for user interaction. The user interface's application menu must mirror a business flow.

DWSS is looking for a system that meets federal functional requirements and supports CSE worker's business needs by providing them with the tools they need to improve worker efficiency and effectiveness. End users require a system that has a common look and feel, is intuitive, and easy to navigate. Regardless of how advanced the technology and automated the workflow, a child support system is not truly successful unless the workers can relate to it and adapt to it with minimal effort.

NCSEAS user interface design meets the requirements and expectations of a new generation of automated child support systems. User interface design reflects a consistent, uniform and intuitive interface presentation throughout the entire application.

CA CSE system supports a graphical user interface for user interaction with the solution contained within the presentation tier of the application architecture. As part of our NCSEAS project, we intend to modify the selected elements of the application, providing a consistent, uniform and intuitive interface presentation throughout the application. We have identified the following areas which will be affected by the changes done for our NCSEAS solution.

- ***The branding accompanied by the color scheme that aligns with DWSS standards***
- ***The menu options and label names that align with DWSS business terminology***

As part of Oregon solution implementation, Deloitte engaged highly experienced User experience professionals from our Digital practice, with expertise on implementing application with enhanced usability across multiple industries. As part of the user interface refinements, existing CA CSE user interfaces were reviewed and after discussions with OR. The following were the core areas addressed as part of the user interface changes:

1. ***Structurally reorganize the screens to organize data***
2. ***Enhance the ease of Navigation and thereby reducing user clicks***
3. ***Introduced concepts of usability like common header, left navigation and footer***

The user interface changes has enhanced the user experience for the end users and was highly appreciated and acknowledged by our Oregon client.

User Interface Standards and Practices

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#63) The system must employ documented user interface standards for consistent presentation to and interaction with users.

Our NCSEAS solution would follow the same set of standards and guidelines which were applicable in the CA CSE system. The standards are retained from the transfer solution and the key changes for logo and menu are targeted. Deloitte works with you to incorporate a DWSS appropriate brand logo and menu sections.

Section 508 Compliance

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#64) The system must comply with accessibility standards defined by Section 508 of the Rehabilitation Act of 1973.

Deloitte has worked with a variety of industries on projects that mandate accessibility requirements. We work with our clients to understand their perspective on accessibility compliance standards and have been able to deliver implementations that have been compliant with Section 508. Since the CA CSE system is a federally certified system that meets the required ADA compliance requirements, we transfer the ADA compliant features of CA CSE system without making any changes.

Summary

Deloitte's has long record in implementing Child Support System's and similar large scale systems. We have the people and the processes to map requirements and design specifications against functionality of the transfer solution. The following is the summary of User Interface Fit Gap.

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
User Interface	3	3	0	0

Table 3.3- 21. User Interfaces Fit Gap Analysis.

3.3.12 Document Generation and Document Management

We have implemented some of the most complex enterprise content management systems, implementing solutions with the need to manage multiple types of content from various sources, perform large-scale content migration efforts and support complex workflow processes. We have successfully developed multi-lingual content management solutions and built cross-departmental taxonomies. Our ECM services minimize transaction costs, improve accuracy and timeliness of information retrieval, streamline information access, automate content workflow and migration procedures, and comply with regulatory requirements.

With our experience through many successful CSE implementations, we have helped CSE Agencies manage documents, improve business processes and enhance information security and governance to facilitate defensible records management.

Deloitte uses an ECM Framework that provides a component based approach for creating a strategic platform. Some of the leading practices involved in this approach are:

Leading Practice	*Benefit*
Enterprise Taxonomy and Metadata Management	***Our ECM framework provides solution components and models for implementing taxonomy and metadata management and governance, as well as a federated search across the enterprise. Benefit of each best practice needs to be worked on?***
Regulatory and Compliance standards	***Our ECM framework will enable DWSS to leverage the solution components and models for ECM governance that address Agency regulatory and compliance requirements effectively.***
Onboarding to the ECM platform	***Having implemented multiple ECM platforms across the public sector, Deloitte's has developed an ECM framework that provides solution components, tools and models for migrating applications, and content onto the ECM platform.***
Business Process best practices	***Deloitte has a proven set of business processes and our platform provides a proven baseline set of business process models and associated workflow models that are tailored to the needs of Child Support Agencies.***
Content Quality	***Deloitte's framework improves accuracy of content by enforcing a consistent approach to content categorization, processing, and applying business rules to increase quality.***
Risk Reduction	***Our proposed use of ECM COTS software (FileNet, Datacap and Thunderhead) will use standard software functionality and minimize customizations as much as possible in order to reduce costs and provide a solution is easy to maintain going forward. These approaches will help in reducing enterprise risk and improving content governance and security.***

Table 3.3- 22. Benefits of ECM Framework.

Deloitte Component-Specific Assets

CA CSE uses Adobe for document generation and IBM Content Manager as the electronic case file repository. We propose to use Thunderhead (Smart Communications) for document generation and IBM Filenet P8 for content management to maximize the investments made by DWSS. We have demonstrated our ability to replace Adobe with another document generation software as a part of our efforts in Oregon where we are replacing it with Opentext Exstream. We leverage the design concepts from CA CSE to build the integration of NCSEAS with Thunderhead and Filenet. Notices are generated in Thunderhead and stored in Filenet with appropriate metadata for search and retrieval of

documents. Deloitte has a number of assets that enable us to streamline the development of Electronic Document Management solutions. These assets enable us to deliver our solutions efficiently, while also increasing product quality and decreasing project risk. Examples of these assets include:

- ***Child Support Specific Templates and Models. Examples include:***
  - ***A document taxonomy for Child Support documents that has been vetted and proven across other state Child Support implementations.***
  - ***Detailed knowledge of the document and task management workflows necessary to support Child Support processes and experience customizing standard workflows for these models across multiple states.***
- ***Technology Accelerators.*** ***Deloitte has implemented IBM FileNet and other IBM ECM products for a large number of commercial and government clients. Over the course of multiple implementations, Deloitte has created a number of accelerators that facilitate an efficient ECM implementation. Accelerators include API libraries, pre-built templates, workflow accelerators, data migration modules and pre built connectors to other software. These accelerators help increase quality and accelerate time to market as the accelerators have already been written and tested.***
- ***Deloitte's Time-Tested ECM Methodologies.*** ***Deloitte provides methodologies and best practices designed to help our clients address ECM governance, taxonomy creation, data privacy and other components associated with an ECM implementation. These methodologies allow us to effectively approach functional, technical and business aspects of an ECM implementation.***
- ***Dedicated Digital Content Management and FileNet Practitioners.*** ***We have implemented FileNet based EDMS solution for many of our government clients across Health and Human Services, Transportation, Retirement and Finance. Our Digital Content practice is dedicated to creating Enterprise Content Management Platforms for our clients. This practice maintains a dedicated team of FileNet and Datacap practitioners in both the US and offshore. We believe that we have some of the strongest FileNet resources available to serve our clients.***
- ***Access to Key FileNet Resources.*** ***Recognizing Deloitte as a Premier Business Partner and a channel to market for its technology, IBM provides Deloitte with access to a variety of FileNet subject matter specialists and resources as part of our Alliance. This includes specialized support documentation as well as access to product education and training programs.***
- ***FileNet Sandbox Environments.*** ***Deloitte maintains a number of prebuilt FileNet environments in Deloitte's Solutions Network (SNET) technology center. These sandbox environments allow our ECM development teams to create solutions and accelerators that assist our engagement teams.***
- ***Solutions.*** ***Deloitte and industry leading ECM vendors work closely together to develop pre-configured, pre-tested, industry-specific services and solutions. Deloitte's portfolio of***

ECM-enabled solutions helps accelerate project start-up while reducing project cost and risk.

Our Electronic Document Management System for NCSEAS is based on Thunderhead, Datacap and the IBM FileNet P8 Platform. The solution architecture will:

- ***Streamline access to data and information stored in structured and unstructured electronic formats in a centralized repository and make this information available in an electronic case folder.***
- ***Provide a platform for ingesting documents from a content generation system (Thunderhead) and capture platform (Datacap) into an enterprise wide unified document management system (FileNet).***
- ***Allow for secure, reliable, and auditable storage, access, searching and sharing of departmental documents and files, through standardized web APIs.***

Document Generation

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#65) The system must provide a document generation tool that supplies a suitable set of features, including: • (#66) Document templates are separate from system code and can be modified by business users. • (#67) Document templates can be controlled with versions and effective dates, allowing new versions to exist alongside older versions. • (#68) A rich set of document formatting features, including – multiple fonts – laser-quality output – runtime page layout for dynamic word-wrapping & pagination – ability to place images – ability to place tables, headers, and footers • (#69) Ability to place barcodes and Optical Mark Recognition (OMR) marks. • (#70) Ability to support batch documents (overnight system-generated documents) and interactive documents. • (#71) Ability to store the document in the Document Management (DM) repository, including appropriate metadata such as creation time, creation user, and case ID.

Deloitte will leverage the capabilities of the existing hardware and software to achieve the re-usability of assets, system resources and the skills required to operate them. To confidently achieve these system goals, DWSS requires a holistic solution that can effectively use the full capabilities of the selected software products – Thunderhead and FileNet. Our solution is based upon our experiences integrating various off-the-shelf products and implementing similar document generation workflows for child support enforcement agencies in Pennsylvania and Florida.

The following figure provides a high level overview of our solution and the points of integration among the products.

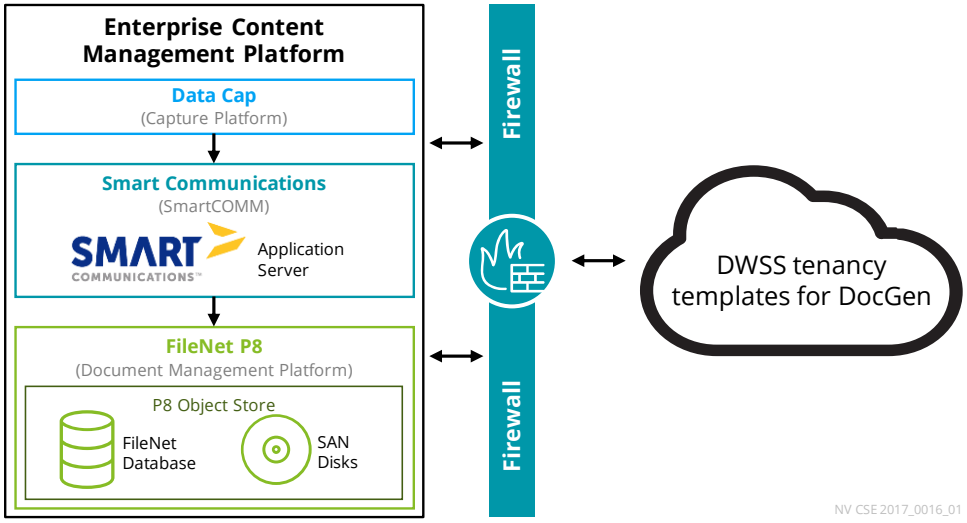


Figure 3.3- 14. Enterprise Content Management Platform.

There are three major steps involved in Document Generation:

1. ***Document templates are created and approved using Smart communications SmartCOMM***
2. ***Transactional data is merged with templates using online or batch channels***
3. ***Generated documents are printed or electronically distributed and stored in FileNet for search and retrieval***

With SmartCOMM, document templates are created using a cloud based user interface. These templates are separated from the system code and authorized business users can modify them. SmartCOMM template sections are organized into "Fragments" which can contain multiple versions of the same content in a document. Each version of "fragment" is referred to as an Edition. Document contents corresponding to different versions are included in the document template as a fragment with a set of criteria, which reference data in the incoming transaction XML, to control the selection of Edition (or fragment version) at run-time. Similarly, custom text elements, for each document template, specific to agencies are also created as different fragment versions with built-in criteria to control which version to show for each document request. Dynamic Enclosures and Dynamic Shared content are also examples of content, included within fragments, which can be automatically selected and included based on values within the XML data.

The SmartCOMM Template Designer provides the user with the ability to create and modify document templates and promote them to production environment. Business user will also have the ability to search and reuse shared components as part of their template creation or modification. These features will provide DWSS business users the flexibility to make necessary static content changes. The Template Designer provides the facility to organize documents using meta-data related to the document.

When a specific document needs to be generated, a request that identifies the template along with necessary security and other form related data is sent to the cloud based

template repository (the DWSS tenancy). SmartCOMM then sends the template information to an on premise server. Documents are generated within the State's firewall by merging transaction data with document template information received from the cloud. The generated document is provided to the user for review and edit if required. SmartCOMM can also provide higher-level communications services (e.g., email, text messages) through a correspondence module.

SmartCOMMS's Output Processor is responsible for preparing the output for its final destination and delivering it. It is used, for example, to sort, split, and add barcodes or OMR (Optical Mark Recognition) marks to a Print File or to send an e-mail. Output Processor delivers a Channel Job to one or more of five possible end points (destinations): SMTP, Disk, JMS, Merged Print File, and Archive. This makes it possible to send a single Channel Document via SMTP, save it to Disk, merge it into a Print File, and then Archive it.

Document generation requests can be categorized in two different ways based on the initiating source: manual online, automatic batch.

- ***Manual online. These are on-demand documents generated manually online through the Document Generation Web-based User Interface or the NCSEAS application screens. They are interactive and rendered to the end-user before they are published or submitted. They contain document elements that need data entry from the end-user.***
- ***Automatic batch. These are documents generated in batch at night through batch applications. They are not interactive and published to the designated channels and destinations, for example, a PDF sent to a network printer, immediately.***

All document generation requests are translated into SmartCOMM job requests, batch configuration files, as well as transaction XML files for populating data in the requested documents. Once required data for document generation is collected and transformed, they are passed to the SmartCOMM engine to create the requested documents. The figure that follows illustrates how a document is generated within SmartCOMM.

A batch configuration file associated with the job request tells SmartCOMM how to process the incoming data, which Document Definition to use, where the business data starts in the transaction file, where to find the document's Effective Date, and which Channels to set (though the Document Template overrides the last two settings). Once SmartCOMM knows which Document Definition to use (i.e., what document, or bundle of documents to create) it works out which Business Object is associated with that document. It uses the data definition within the Business Object to map incoming XML with pre-defined Objects and Properties. These are then used to populate the content, drive the assembly rules, and so create the document and distribute to each of the specified channels.

In the event that the distribution channel selected is Print to a network printer, SmartCOMM uses the print server and/or print queue specified in the output processor configuration. However, these values are overridden via the corresponding channel job properties within Admin, or within the batch configuration file, or from within document properties.

Document Management

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#72) The system must provide a cohesive set of DM features, including:

- (#73) The DM component must support high-volume operations such as a centralized mailroom scanning, and low-volume activity such as over-the-counter documents.
- (#74) The DM component must store images for easy retrieval by authorized users.
- (#75) The DM component must accommodate common document formats including, but not limited, to Tagged Image File Format (TIFF), Portable Document Format (PDF) and doc/docx.
- (#76) The DM component must support integration with the workflow and document generation mechanisms.
- (#77) Document indexing must support associations to such entities as person (party), case, and order.
- (#78) The DM component must have the capability to re-index and remove documents.
- (#79) The DM component must provide facilities for retention period management.
- (#80) The DM component must include mechanisms (e.g., Application Program Interfaces (APIs)) for integrating the access to and display of documents in other applications.
- (#81) The DM component must support replacement of and / or appending to a document or document set.
- (#82) The DM component must support reading of barcodes as well as reading of key information from incoming documents via Optical Character Recognition (OCR).
- (#83) The DM component must support full-text indexing of incoming documents via OCR.
- (#84) The DM component must log activity on stored documents, including indexing / re-indexing and physical document manipulations.

NCSEAS solution leverages IBM FileNet Content Manager for content storage and retrieval. FileNet delivers a mature and proven set of Document Management capabilities specifically designed to meet your document management and indexing needs. Datacap and Thunderhead provide out of the box integration with IBM FileNet Content Manager to automatically ingest and classify the content they generate. Datacap, Thunderhead and Filenet co-exist to provide a capture, document generation and document management system required for enterprise level client communications as well as content management and archival.

DEMONSTRATED ABILITY

- ***We have implemented FileNet based ECM solutions in several states including Connecticut, Alabama, Kentucky, Maryland, Tennessee, and Minnesota.***
- ***We implanted an ECM solution for Pennsylvania Child Support that generates 12 Million documents and stores 17 million documents including inbound images on an annual basis.***

FileNet Content Manager capabilities utilize the FileNet P8 unified Enterprise Catalog and metadata model. Content Manager's document management capabilities provide full functionality for newly created documents as well as for documents already existing in non-FileNet repositories.

FileNet P8 provides the centralized document repository for the NCSEAS Document Generation System. Key components of FileNet include the Content Manager, Application Engine, and Workplace.

Listed in the following table are some of the vital features of IBM FileNet P8 that help meet enterprise level requirements for content management.

Feature	Description
File Formats Supported	***The IBM Filenet P8is an object-oriented library for electronic content for storing content along with metadata and other business objects. It can store simple objects, such as documents and images, as well as more complex objects, such as workflows, email streams, and corporate records. It is designed as a central repository for any type of electronic information. Some other types of electronic content include audio files, web content, XML files, rich media, and fax. This gives it inherent capability to store images of different formats like jpeg, TIIFF, gif, document of different formats like pdf, docx, tiff as well as other file formats that would be required for daily operations. These documents become part of the NCSEAS case folder so they can be accessed by case workers within the application. The support of multiple channels and file formats provides DWSS with a base solution that leverages existing software. This also provides capability for future expansion to multiple channels and formats.***
Indexing & versioning capabilities	***An object store is the database repository for storing objects. Documents and images are stored in FileNet and the important file attributes are stored in the database as metadata. This enables associating to application specific entities like Case, Person, and Order and add indexes as required. Document versioning is supported through document version actions and document state changes. Property indexing, stored searches, and search templates facilitate quick searching. DWSS gets a solution that is proven to scale and supports fast and accurate retrieval of documents.***
Authorized access to data	***The FileNet repository uses LDAP (Lightweight Directory Access Protocol) for user authentication and access control to content information. Granular security can be established for individuals that have the proper access level for documents. Users with appropriate security privileges will be able to remove documents as well as perform system administration functions like re-indexing the documents to add additional index elements for faster retrieval. By using these features, DWSS can restrict access to sensitive information and allow access to only the required users. FileNet security levels are shown below:***

Access Rights	***Search Document***	***View Content***	***Edit Metadata***	***Annotate Images***	***Edit Content***	***Delete Document***
Deny						
View Properties	✓					
Modify Properties	✓		✓			
View Content	✓	✓				
View & Annotate Content	✓	✓		✓		
Modify Properties/ View Content	✓	✓	✓	✓		
Modify Content	✓	✓	✓	✓	✓	
Full Control	✓	✓	✓	✓	✓	✓

Feature	*Description*
Archiving and Purging	***A separate records management object store handles the archiving and purging requirements for document storage. Having a separate object store for retention and purging makes the system easier to manage, simplifies security, and improves search performance. The features of security, versioning, and advanced search are already built into the content management system. An automated process for storing and purging documents eliminates the errors that are introduced through a manual purging solution. Deloitte uses the life cycle policy and action features of FileNet to customize and automate the purging process. Automated purging of documents is achieved by applying custom life cycle policies and actions to document classes. The life cycle policy defines the set of states that different document classes pass through during their lifetime. The life cycle actions are performed by the system as documents move from one state to the next during the life cycle. When a document reaches the state or requirement for purging it is overwritten three times by the FileNet system.***
APIs and Integration capabilities	***The IBM FileNet IBM P8 Platform provides APIs for developing custom applications. The IBM P8 Platform offers Java and .NET APIs that offer objects and methods to handle creating, retrieving, updating, and deleting objects, folders, and documents. Content Management Interoperability Services (CMIS) and Web Services are also supported. Content Platform Engine provides an extensible Object Model that includes a set of predefined classes and the ability to create new custom classes. This gives FileNet, the capability to integrate with external systems and access documents and view documents from external applications.*** ***The IBM FileNet P8 Platform has the capability to connect with an external entity called a component. A component can be either a Java object or Java Messaging System (JMS) queue, making them available in a workflow.***
Performance and throughput	***The IBM FileNet P8 Platform family of products provides a variety of enterprise capabilities for organizations, including open and extensible environment, high ingestion and large storage capacity capabilities, and scalable architecture. IBM FileNet P8 Content Manager can handle both high ingestion rates (millions of documents per hour) and large amounts of stored information. It also supports a scalable architecture, offering both vertical and horizontal scalability solutions. IBM Content Platform can be farmed (scaled horizontally) or can be scaled vertically by either running multiple instances on a single box or configuring a single instance to use multiple servers. Multiple servers can be added in load-balanced configurations to handle increasing transaction loads. These capabilities help address DWSS requirements to handle high-volume bulk scanning and capture operations from a mail room or central facility and remote desktop scanning operations.***
Customizable Data Retention	***P8 Content Manager can be configured to set the retention on the instances of the annotations, custom objects, documents, and folders. The retention date on the object prevents the deletion of the object until the retention date is passed. Setting a retention value on objects helps confirm that the objects are retained in the system until the specified time. Also, having a retention date on the objects removes the possibility of the accidental deletion of objects until the retention date has passed.***
Logging Capabilities	***The Content Manager APIs and the server have built-in logging that focuses on providing details of round-trips between the client and server. The reason for that focus is because those details are typically interesting information for resolving both performance and functional problems. The main purpose of the logging is to have artifacts for diagnosing problems when hands-on debugging is not possible. Those logs are intended to be examined by IBM Support and development engineers. They are not documented in detail, but you might easily develop an informal familiarity with them if you work with them.***

Table 3.3- 18. Key Features of IBM FileNet P8.

Document Imaging

We have implemented imaging systems for several other State Child Support agencies and have a set of leading practices that optimizes the imaging process for case workers.

Our imaging platform provides the ability to ingest paper documents into a repository so that they can be accessed by the Child Support application via an electronic case folder. We

use OCR/ICR as a standard practice to eliminate or minimize the amount of manual indexing required to classify documents. We typically collect information via OCR such as form id, case id, member id and other information to appropriate classify documents within the repository and facilitate subsequent access by case workers. In performing OCR/ICR on documents, forms may need to be redesigned to optimize processing.

The fundamental stages of scanning are standard across industries. However, each stage in the process must be customized based on the specific needs of NCSEAS. The following table describes each of the stages of the imaging process.

Process Step	*Description*
Scan	***The first step is scanning. Deloitte proposes using IBM Datacap from the State's existing infrastructure for document scanning and indexing purposes.***
Document Recognition	***Intelligent Document Recognition (IDR) allows the imaging system to automatically identify different types of documents based on pre-conditions and training of the system. Datacap uses a technique called fingerprint matching to generate a fingerprint that describes each incoming page. The fingerprint can include information about the relative densities of different regions of the page or the location of text on the page. The fingerprint library allows Datacap to recognize similar pages that have a similar fingerprint. These capabilities will reduce the amount of time the CSE will need to spend on pre-scan batch separation and pre-indexing.***
Indexing	***In order to efficiently classify documents for efficient retrieval within the NCSEAS system, an efficient taxonomy and metadata schema must be created for documents. We will work with DWSS to define critical metadata attributes and develop business rules to expedite the application of metadata values to scanned documents. We will also work with CSE to ease the assignment of metadata using bar coding, hooks to the NCSEAS system and other potential improvements.***
OCR/ICR	***The leading imaging solutions, including Datacap, offer OCR/ICR capabilities. The Datacap recognition engine indicates the degree of confidence for each character.*** ***Depending on the quality of the documents being scanned and the amount of hand written information, OCR/ICR error resolution could require a significant amount of time. We will work with DWSS to review incoming documents and determine the most efficient use of OCR/ICR. Datacap supports:*** • ***Optical character recognition (OCR) for machine-printed characters*** • ***Intelligent character recognition (ICR) for handwriting, typically detached block letters, but also cursive writing on checks or in other well identified contexts*** • ***Optical mark recognition (OMR) for identifying checked boxes and other marks, such as bubbles in surveys or a signature on a form*** • ***Bar code reading of several types, including one-dimensional bar codes, such as those used for price reference in stores, or two-dimensional bar codes that are used to encode much larger sets of data, such as name, address, or shipping information***
Data Validation	***Part of the capture process involves checking the validity of specific fields. For example, it is important to check for valid dates, valid field formats, and correct totals. Searches can also be performed against external systems to verify that a case number or member ID collected in the capture process is valid.***
Data Export	***Once document batches are complete, they are exported to the content management system so that they can become part of the member case folder, and searched. Workflow tasks can be generated to instruct case workers of actions that need to be taken based on the arrival of the document. IBM Datacap has the ability to integrate with IBM FileNet P8 to ingest paper documents that have been scanned.*** ***The export process needs to consider network bandwidth constraints to avoid bottlenecks across the network and we will work with DWSS to understand the implementation options. We assume that DWSS is ultimately responsible for providing sufficient network capacity.***

Table 3.3- 19. Stages of Imaging.

It is important for the document management platform to work as an integrated part of the NCSEAS solution. The following figure depicts data flow between the Document Imaging, Document Generation and Document management components of NCSEAS.

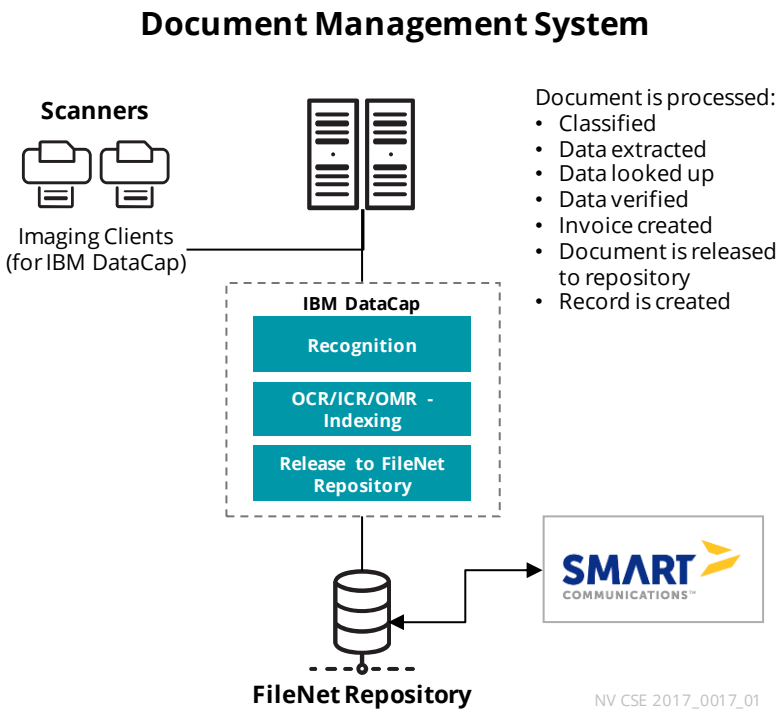


Figure 3.3- 15. Document Management System Logical View.

Summary

Deloitte has long experience in successful CSE implementations that has helped CSE Agencies manage documents, improve business processes and enhance information security and governance to facilitate defensible records management. We will leverage the state's existing infrastructure for Document Generation as well as Management and use our experience to enhance the features of CA CSE system. Following is a summary of the Fit-Gap for Document Generation and Document Management. While our solution is capable of imaging and retrieving documents from a go-forward basis, we would like for DWSS to consider imaging of historical documents to completely move paper based file system to an electronic case file management system.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Document Generation and Document Management	***20***	***17***	***0***	***3***

Table 3.3- 23. Document Generation and Document Management Fit Gap Analysis.

3.3.13 Data Warehouse and Business Intelligence

General

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#85) The system must include a data warehouse or comparable facility to support analysis of system data to track program performance and help predict long-term child support program trends:

- The data warehouse must reuse, to the greatest extent possible, the data warehouse components present in the NOMADS legacy system.
- Data feeds and Extract, Transform, Load (ETL) must be established between the data warehouse and the transactional data store of the Nevada Child Support Enforcement Automated System (NCSEAS) system.
- Existing reports must be functionally preserved to the extent the data to support the reports are available in the transactional system.

Data warehouse and reports are critical to the maintenance and operations of a child support system. From operational reports that provide summaries of daily financial transactions to the federal performance reports such as OCSE 157 and OCSE 34, are best executed using a sound data warehouse structure. We have a great deal of experience implementing several large scale date warehouses for our public sector clients in general and child support in specific. We implemented data warehouse and business intelligence for the state of Pennsylvania using IBM Cognos. We implemented data warehouse and federal reporting solution for the state of Georgia using the Oracle OBIE platform. The data warehousing solution that we implemented in Kentucky using SAP Business Object -the same product that we propose to use for DWSS, provides the users the ability to generate the federal performance reports out of the data warehouse. The Pennsylvania, Georgia and Kentucky data warehouse and reporting solution provide users the ability to slice and dice data to perform what-if analysis and observe trends as well as measure their performance against pre-determined goals. Our NCSEAS solution uses the SAP Data services tool that DWSS currently owns to perform the process of receiving data from the OLTP data sources and formulating into usable structures in the data warehouse database. From a performance perspective, which is crucial for a regular refresh of data, the performance of Data Integrator can allow for batch or parallel processing while other products may operate on a record-by-record basis. The data warehouse reuses, to the greatest extent possible, the data warehouse components present in the NOMADS legacy system. As per our understanding, the current mainframe based NOMADS system sends Reports to SAP Business Objects. We transfer design concepts from the CA CSE system to incorporate operational, management, and federal reports, while we modernize the existing NOMADS data warehouse. We leverage an efficient collection of transformations available that can handle the large complex mappings necessary to load the Data warehouse. The system provides and maintains an analysis and reporting data set separate from the system transactional data to reduce the impact on performance caused by long running queries typically required for reports.

Data Warehouse Architecture

Attachment M, Implementation Vendor Requirements, Technical Requirements

(#86) The system must provide and maintain an analysis / reporting data set separate from the system transactional data.

(#87) The system must provide an automated ETL or similar process that copies specified transactional data to the analysis data set, validates, and provides selected rollup and pre-analysis services on the analysis data.

(#88) The data warehouse must allow re-creation of queries and reports after-the-fact as if they were being performed at a specified point in time.

Our solutions will offer a robust Data warehouse with stable reporting systems that will cater to the management needs for efficient decision making. The Data warehouse data security and access control to make sure only authorized users have access to run the appropriate reports. The Systems will extensively supports OLTP operations simultaneously with Source and target audit systems in place

We offer wide repository with in depth knowledge of Automation process for data analysis and data validations. We have standard set of tools and accelerators that drives the Automation of the ETL jobs which ensures minimal or no manual intervention.

The Design will allow queries and reports to be generated for specified time intervals.

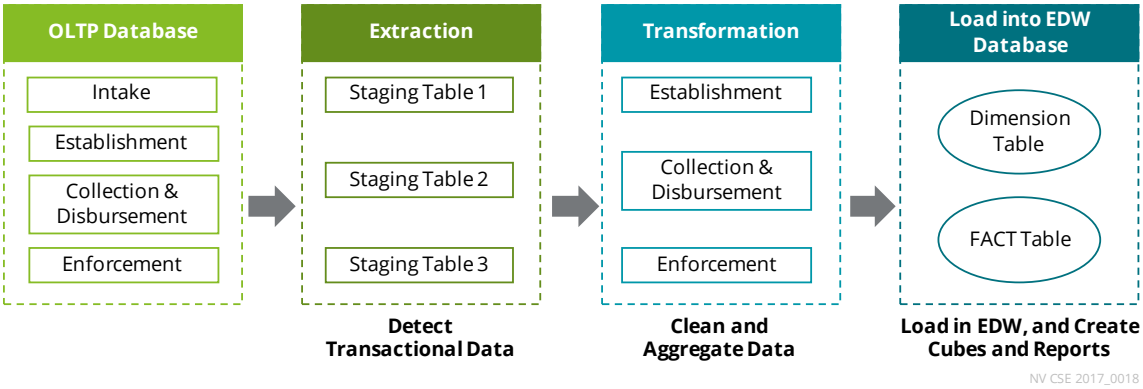


Figure 3.3- 16. Data Warehouse Architecture.

We leverage our experience of implementing similar data warehouses in child support for other states – Florida and Kentucky where we implemented data warehouse using SAP business objects as well as Kentucky and now for the State of Oregon. In these states, we have or are in the process of implementing data warehouses that process child support data to produce management, operational and federal reports (OCSE 34 and 157). We understand that DWSS would like to transfer reports from CSEAS, while building 'bridges' or ETL jobs that replace existing data feed routines in NOMADS so that users could continue to use existing NOMADS reports. We analyze the existing reports that we estimate to be in the one hundred (100) range to understand the data needs for these reports. We then perform a mapping exercise to determine the appropriate data elements from the CSEAS system. We then build the required ETL components to extract the information and load them to data stores that feed the existing NOMADS reports. The ETL jobs will use logic to derive and/or copy data from the transactional data base to the data warehouse. The data warehouse itself is a separate data repository from the on-line transactional database. This separate is to allow for users to retrieve high-volume data without impacting on-line performance. Once the data is stored in the data warehouse, users can retrieve data using a variety of query and business intelligence tools as described in the rest of the sections following.

Business Intelligence

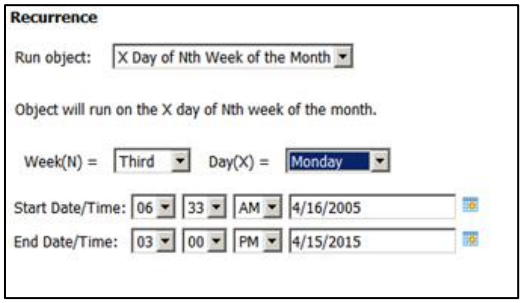
Attachment M, Implementation Vendor Requirements, Technical Requirements

(#89) The Business Intelligence (BI) component must provide a tool to query the analysis data and display meaningful information for users from the Data Warehouse.

(#90) The BI component must provide the ability to develop standard reports that can be shared with users and generated for different input parameters (e.g., date range, county, office, worker, etc.) on-demand.

(#91) The system must have minimal impact on the performance of the production environment in producing standardized and ad hoc reports.

The BI component provides the ability to develop standard reports that are generated on-demand for various input parameters (e.g., date range, county, office, worker). Scheduled reports often fill the needs of most users when the data is only available for a certain time frame. The Business Objects XI integrated scheduling function provides flexible scheduling capabilities – daily, weekly or monthly. Reports are shared via email, or can be sent to a printer, or file in several different formats.



The Business Objects XI Scheduler also provides the ability to personalize and deliver content to a list of subscribers. A publication maintains a list of subscribers, in the form of principals, as well as profile targets and each recipient's profile values. When you schedule a publication, each recipient receives a personalized copy of the associated report, based on the publication's profile targets and the recipients' profile values. Users subscribe to or unsubscribe to a publication provided they have the necessary credentials. The reporting environment supports integrated scheduling combined with role-based security to allow for scheduled reports to be made available to users or give authorized users the ability to execute their own reports. As results are returned from these queries, the application formats the results in user-defined outputs (e.g., PDF, TXT)

For Kentucky, we built Business Intelligence (BI) using Business Objects as an independent module to view and generate program performance reports based on data. The BI application is accessible from a worker's desktop icon instead of from the CSE ADMIN Workspace. The BI solution provides workers with access to key reports such as the Federal OCSE 157 and Federal OCSE 34 reports as well as selected canned or pre-built reports that provide data on actual performance versus target performance. Selected workers have the ability to create their own Ad-Hoc reports. Using the "prompt" and "filters" within the reports allows users to sort data based on certain criteria to arrive at meaningful data for that individual. Additionally, BI provide role-specific dashboards (Caseworker, Supervisor, Accounting, Regional, and Executive) that map to specific KPIs (key performance indicators) which assist users in making business decisions and answering business questions.

Did you know?

- ***The data warehouse and business intelligence solution we implemented for the State Of Kentucky is an SAP Business Object based solution.***

The BI Dashboards are designed to help DWSS make decisions based on data that is measured against key metrics. Reviewing BI dashboards and supporting data assist DWSS to prioritize work or indicate where to focus attention based on program goals. For example, the Caseworker Dashboard contains reports like Federal Performance Indicator - Trend Report, Federal Performance Indicator Current Report, Cases without Payment Report, Worker Performance Report, Support Paid Report, County Rank Report, Managed Staff Performance Report.

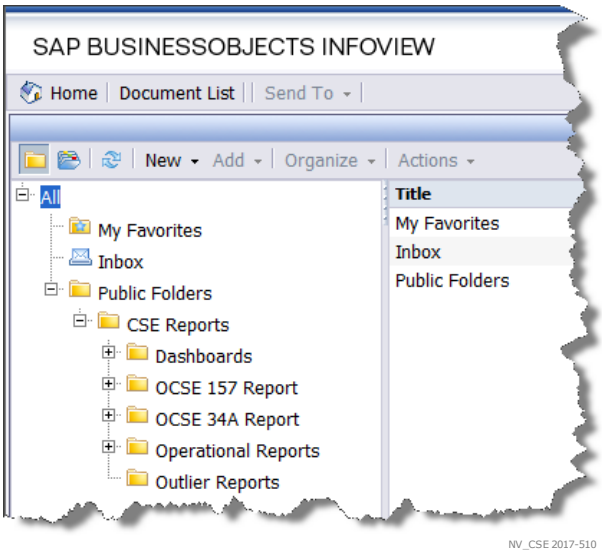


Figure 3.3- 18. CSE Reports Folder Contents

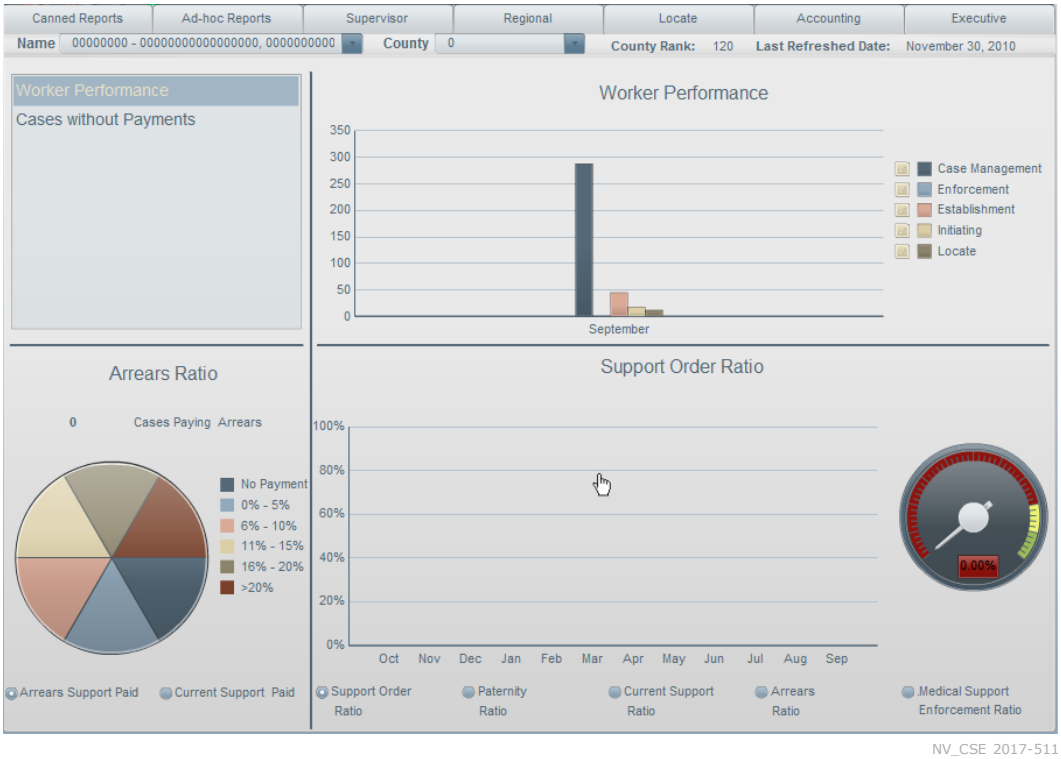


Figure 3.3- 19. Case Worker Dashboard.

Summary

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Data Warehouse and Business Intelligence	**7**	**0**	**0**	**7**

Table 3.3- 24. Data Warehouse and Business Intelligence Fit Gap Analysis.

3.3.14 Code Quality and Maintainability

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#92) The system source code must include sufficient internal documentation (comments) to explain the purpose of each source code module, any exposed programming interfaces, and explanation of non-obvious aspects of the source code / programming implementation.
(#93) The system source code must employ consistent naming conventions for data structures (including database objects), variables, modules, classes, and source-code files.
(#94) The system source code must offer external documentation sufficient to explain the system's architecture, key application patterns / design patterns, and how to perform essential programming tasks such as modifying a user screen, altering a workflow, modifying a report or document template, etc.

CA CSE system adheres to firmly established and documented coding standards and has been following a well-established configuration management process. Deloitte's EVD methodology includes a prescribed approach to manage the programming effort to deliver quality with the components of CA CSE system. This method enables DWSS to realize benefits from proper code review and correction during development and testing in the Construction phase. The Deloitte DBA, lead technology architect, and lead developer work to review and include coding standards for new products and framework that introduce for the NCSEAS system, for example, coding standards for Smartcomm Smart communications, and the spring MVC framework implementation are added to the existing coding standards inherited from the CA CSE system. These coding standards will leverage any existing standards that may exist in DWSS for these products to align with DWSS enterprise standards to promote uniformity and enhance maintainability.

The current CA CSE system code has been using coding standards that're already well defined. Any new additions or changes to code originating as per DWSS' requirements will follow the coding standards as documented in the Configuration Management Plan. This will help keep the documentation style consistent with the existing parts of the NCSEAS application.

The coding standards will have the following

- ***Development approaches and methodologies***
- ***Version numbers of utilized programming languages***
- ***Standards for code formatting, headers, and other comments***
- ***Naming conventions for variables, parameters, procedures, and other entities***
- ***Restrictions on use of programming language constructs or features***

All exposed interfaces Java Interfaces and Methods will have in-line comments explaining the specific technical implementation and will be used by Javadoc API to generate the standard HTML based documentation for the Java source code. Similar in-line comments for other major programming elements like XML, HTML and, SQL the form the primary languages will be implemented.

As part of the construction process, system modules and components of the NCSEAS solution are placed into the development environment for integrated review. Developed components are reviewed in two basic ways. Continual review is performed on an informal peer basis throughout the development cycle, thus providing feedback about clean coding and general industry-practice principles among assigned application groups and teams. A

second, more formal review is performed toward the conclusion of the construction activities for a particular subsystem or functional area, validating that integrated components and modules are consistent and maintained correctly.

Deloitte's system architect and lead developers perform the formal reviews for more complicated aspects of a solution in order to maintain industry practices using an in-depth code review checklist. Deloitte employs a code review checklist geared for Java-based solutions—the functional baseline for the NCSEAS solution.

A variety of topics are thoroughly investigated using these Java-based checklists. An example can be seen in the following graphic.

Code Review Checklist

Project Name:	<Enter the project name>	**Reviewer:**	<Enter the reviewer's name>
Project ID:	<Enter the project ID>	**Date:**	<Enter the date, dd-mmm-yyyy>
Artifact Title:	<Enter the artifact title>	**Version:**	<Enter the version number>

General Notes:
This checklist is aligned with the guidelines documented within the Coding Guidelines document and is used during the review process to validate adherence.

#	Item/Description	Status	Comments	Standard/Guideline?
	File Organization			
1	Each Java source file contains at most one public class or interface.	Incomplete		Guideline
2	The base name of the source file is the same as the name (with the same case) of the public class or interface. Exception: If a Java source file does not have a public class or interface, its base name can be anything.	Incomplete		Guideline
3	A package is a self-contained group of related classes.	Incomplete		Guideline
4	The Classes within a specific package should match the classes within the software design class diagram.	Incomplete		Standard
5	Each Java source file has the following mandatory sections and is laid out in the following order: - Package Statement - Import Statements - File Header - Class and Interface Declarations	Incomplete		Guideline
6	The first non-comment line of a Java source file is the package statement and it is mandatory for every Java source file. The naming convention for the package statement is: package tx.XXXXX.cs.<project name>.<function> For example: package tx.XXXXX.cs.XXXXX.framework; package tx.XXXXX.cs.XXXXX.dao; package tx.XXXXX.cs.XXXXX.logger; package tx.XXXXX.cs.XXXXX.exception;	Incomplete		Guideline
7	No Java source file belongs to the "default" package.	Incomplete		Guideline
8	There is one import statement for each class imported from a package as shown in the following example: Import tx.XXXXX.cs.XXXXX.framework.ApplicationLogger; import tx.XXXXX.cs.XXXXX.dao.CreateCaseDAO; import tx.XXXXX.cs.XXXXX.dao.UpdateCaseDAO; import tx.XXXXX.cs.XXXXX.exception.DataException; Remove unused import statements from the Java class	Incomplete		Guideline
9	The file header is needed to capture information about the file as a whole.	Incomplete		Guideline
	Class and Interface Declaration			
10	Static attributes, also known as class attributes, are given valid	Incomplete		Guideline
11	All interfaces are inherently abstract; this keyword should not be	Incomplete		Guideline
12	First the public class variables, then the protected, then the	Incomplete		Guideline
13	[illegible]	Incomplete		[illegible]

Code Review Criterion

- ✓ Deviation
- ✓ Omission
- ✓ Method, Variable, & Class Definition
- ✓ Data References
- ✓ Comparison/ Relational
- ✓ Control Flow
- ✓ Layout and Packing
- ✓ Modularity
- ✓ Storage Usage
- ✓ Performance
- ✓ Variable and Constant Declaration
- ✓ Side Effects
- ✓ Concurrency
- ✓ Readability and Maintenance
- ✓ Exception Handling
- ✓ Simplicity

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Figure 3.3-20. Code Review Criterion.

Code reviews are performed by evaluating a series of criteria previously defined to promote quality code delivery throughout the Construction phase.

Database code components are also subjected to review, typically via a standardized SQL code review checklist. This type of review is performed for each database package included with the solution, and is performed by the lead database administrator (DBA) or a designated member of the database team. Topics investigated include:

- ***Confirming the business rules are implemented per functional requirements***
- ***All stored procedures are tested for the CRUD (Create, Read, Update, Delete) functions***
- ***All exceptions are handled within stored procedures***
- ***Proper explanation of the plan execution on database actions***

After performing this review, the DBA signs off on the database package and, combined with the successful completion of the code review, the component is made available for initial integration testing.

Junit, a unit testing framework for Java™ language, is an industry standard for maintaining Application quality, and SONAR, is used to maintain code quality (in terms of commenting technique, code architecture and design, duplication/redundancy identification, code complexity, identifying potential bugs. Security vulnerability testing is performed using IBM Rational AppScan and HP Fortify Static Code Analysis, and performance testing is conducted using Apache JMETER. These tools together contribute towards a high quality software code and improve maintainability. The following figure shows a snapshot of code quality report from SONAR. We work with DWSS to obtain external source code related documents from the State of California. We review and update these documents to align it with DWSS templates and document standards. We also recognize that we will need to create additional source code related documentation. We created coding standards, unit test checklist, technical architecture and design documents that we did not receive as part of the artifacts received from the State of California. We also successfully worked with our QA vendor to identify and resolve security vulnerabilities as part of our construction phase activities. We fine-tuned the SONAR tool to identify patterns of code quality findings, knowledge and lessons learned that can be brought forward to benefit DWSS. Additionally, during the transfer of the CA CSE system in Oregon, we have improvised on the available external documentation related to System Architecture, Coding Standards, User Interfaces, Workflows, etc. and can be leveraged in NCSEAS.

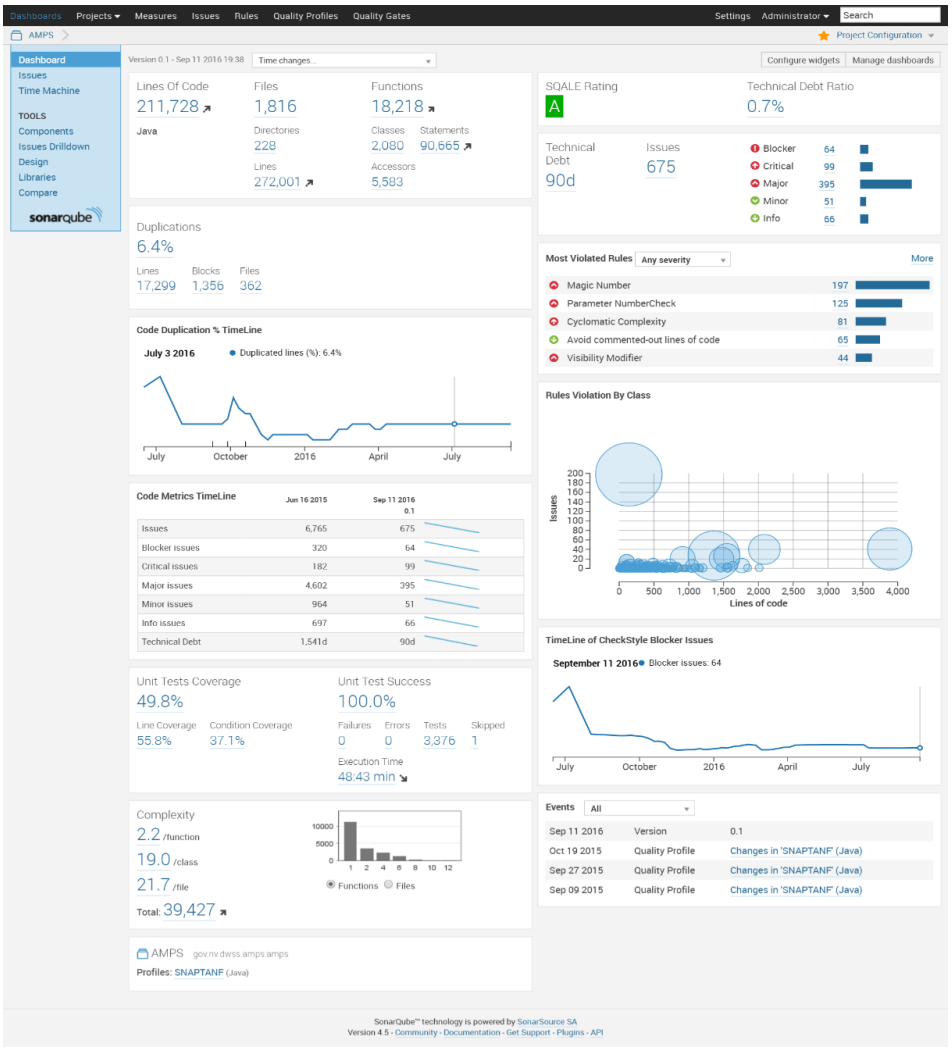

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Figure 3.3- 21. Code Quality Report from SONAR Snapshot.

Summary

CA CSE system provides annotations within the source code and follows documented processes, standards and conventions. Deloitte uses its experience in delivering transfer solutions to states like Oregon to enhance the documentation to be able to help with performing essential programming tasks. The following is the summary of Fit-gap for Code quality and Maintainability.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Code Quality and Maintainability	***3***	***2***	***0***	***1***

Table 3.3- 25. Code Quality and Maintainability Fit Gap Analysis.

3.3.15 Development Tools

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#95) The system must have configuration management features that separate source code from databases, and allow different "builds" to access different databases / instances.
(#96) The system must allow the application clock to be controlled separately from the server clock in order to test time-based functionality such as financial distribution, order effective-date management, monthly / weekly batch cycles, etc.

Deloitte has strong configuration management processes and controls which brings value in managing builds and deployments of large applications.

A key outcome of our EVD based configuration management plan, see Section VI: 4.17 Release Management Plan for details, is that there is clear separation between application code and the data that it operates on. Application code is managed in the Perforce version control system and system builds are generated using automated build scripts. Jenkins orchestrates a continuous integration build and deploy environment. Build and deployment processes support proper version control and compilation of code changes into a single release candidate for migration through the environments and deployment into production.

The connection to the database is parametrized using configuration files and this allows a build to connect to any database by adjusting the appropriate configuration settings. This achieves a level of decoupling between the application code and its database. We have already implemented this feature ("Schema Switching Capability") in a previous project for the DWSS where this feature was leveraged to test against different databases.

The environment setup part of the configuration management plan takes into account the components of an environment like online web application, batch, database, forms for document generation and reports. The deployment procedures and tools support the migration of these components consecutively through the five environments; development, system test, user acceptance test, production, and training. Each environment gets its own database and therefore different builds in different environments connect to their respective databases. Application and database migrations to servers in each environment are maintained via automated build processes. Some manual intervention may be needed when deploying form and report components to different environments. A high-level flow diagram that depicts the flow of source code that is deployed across multiple environments is depicted in the following figure.

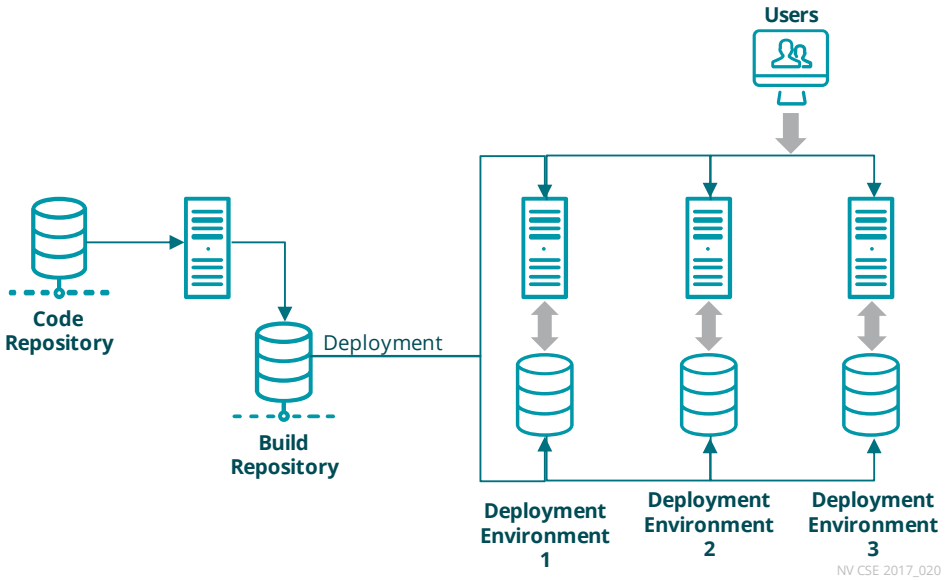


Figure 3.3- 22. High level illustration of deployment to different environments, each with its own application server and database

Application Clock and "Time Travel" Feature to Support Testing

The application's clock is decoupled from the server's system clock. This is needed to test different application scenarios that span days or even months. The CA CSE application already has this functionality that allows the application date-time to be configured as needed for testing purposes.

The use of this configurable date-time allows the Testing Team to move the date ahead (never backwards) to test a software change through the time frame necessary to complete the given test scenario (i.e., "time travel"). After the scenario or a group of scenarios is completed the testing environment may be returned to a baseline that aligns with the server system clock.

The capability to adjust the System Date is especially critical for supporting Federal Test Deck testing. The execution of a Federal Test Deck will require the ability to run a pre-specified set of data through the system in order for DWSS to gain federal certification. Other examples of where the application date may be adjusted relates to testing case closure logic, medical support notice generation, distributions, monthly obligation calculations. In the State of Oregon, where we are currently executing system testing, we advance the system clock to test system workflow activities such as case closure and account charging and arrears balance calculations. For these scenarios, we advance the system clock to the required time so that the activities become past due and execute the appropriate batch processes to test if the timelines are recognized by the system to take the next appropriate action.

Summary

We provide a clear separation between code and data and implement configuration management features to allow different builds to access different back-ends using configuration setting changes. The application clock is controlled separately from the server clock in CA CSE and this feature is retained and leveraged in NCSEAS to test time-based functionality.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Development Tools	***2***	***1***	***0***	***1***

Table 3.3- 26. Development Tools Fit Gap Analysis.

3.3.16 Automated Referral Processing

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#97) The system must implement an automated screening process to automatically evaluate referrals from agencies such as IV-A, Title XIX, and Child Welfare.

The CA CSE system supports automatic referral processing for referrals originating from Self Service, IV-A, IV-E, Title XIX and Child Support Enforcement Network (CSENeT). The IVA/IV-D interface is one of the major interfaces and is contributes to a large volume of cases that are created in the child support system. Our experience working in the integrated NOMADS interface provides us the knowledge required to build an interface to compensate the separation of the systems when the NCSEAS system is implemented.

Automatic processing of referrals from IV-A includes the creation of a new child support case or updates to existing case(s). It also accommodates the update of IV-A case information over time as well as the management of Unreimbursed Assistance (URA) and reimbursable TANF balances at the case and participant levels.

Similarly, interfaces with Title XIX Medicaid and Child welfare Title IVE agencies support the creation of new cases or updates to existing cases.

All referral data received is processed through a set of validation routines that accept or reject transactions based on checks that are performed on required format and content of data. Valid transactions are processed applying rules as defined in the following.

- ***Check for having an existing link to the non-custodial parent (NCP).***
- ***Check for relationship of the dependent with the NCP.***
- ***Check for matching the participants:***
  - ***If the referral participants exactly match the NCP and custodial parent (CP) an automatic case update process is initiated to add dependents to an existing case or to reopen an existing case.***
  - ***If the referral participants are a found to be potential match the referral is set for automatic case creation that includes steps for creating participant, defining relationship, creating new case, linking participant to case, setting case type and notifying Federal Case Registry (FCR).***

- ***Tasks are also automatically created for the worker by the system if there exists a mismatch.***

Processing of referrals from interstate data sources such as the Federal Child Support Enforcement Network (CSENet) and Uniform Interstate Family Support Act (UIFSA) transmittals is also supported.

After a CSENet referral is received an Interstate referral number is generated. The information received from the CSENet is recorded in staging tables. The next steps in the CSENet referral includes:

- ***Check for an existing CSENet Referral. If an existing CSENet referral is found the transaction referral is linked to the existing referral.***
- ***Next a check is made in the system to find a match for the referral with the other jurisdiction case number and Federal Information Processing Standards (FIPS) code for the same services requested.***
  - ***If no open case exists in the system with the above condition a task is created for the worked.***
  - ***If an open case exists in the system, an automatic update is initiated for participant and case.***
  - ***If a cancel request is received and a pending referral exist the referral is cancelled.***
  - ***If a referral request is already processed a task is generated to the worker.***
- ***If the referral contains minimum data required to create a case and the NCP, CP exists in the system and are an exact match the system links the participants to the referral. If more than one match exists in the system for the participant a task is created for the worker.***

As part of the Public Assistance system in Nevada, when eligibility versions are posted by the case worker automated referral process gets triggered and referrals are used to create cases in the IV-D system.

Summary

Deloitte has a long record in implementing Child System's automated referral processing. We also bring in firsthand knowledge and experience of NOMADS and CA CSE system to support and map the requirements and design specifications against functionality of the transfer solution for automated referral processing. The following is the summary of Interfaces Fit Gap

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Automated Referral Processing Fit Gap	1	0	1	0

Table 3.3- 27. Automated Referral Processing Fit Gap Analysis.

3.3.17 Calendar Management

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#98) The system must include a calendar-management component that allows for managing individual (e.g., worker) calendars as well as pool-type (e.g., genetic testing) calendars.

The CA CSE system has a calendar feature that supports the management of appointments as well as events. Calendars can be organized at the individual level (e.g., for case workers) as well as for general events across an office (e.g., administrative hearings, genetic testing).

The calendar features the ability to manually add, remove or change events on the calendar by authorized users. In addition, the system supports the issue of automatic notices for some types of upcoming events.

The CA CSE system provides a generic screen for searching and viewing events in the calendar. Events can be searched/filtered by case worker, case worker team, office, event type and date range. For example an authorized user can find the administrative hearings scheduled this month for cases assigned to his/her office. The filters can be further tightened to show only those cases where he/she is the case worker.

The list of event types needed by DWSS can be different from that of California and therefore some customization will be needed to match DWSS' requirements.

Summary

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Calendar Management	1	1	0	0

Table 3.3- 28. Calendar Management Fit Gap Analysis.

3.3.18 Alerts Management

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#99) The system must include an alerts-management subsystem that allows for informational alerts, action alerts, alert forwarding, and filtering of alerts.

The CA CSE system supports the creation of special attention alerts that align with a specific data or information scenario. Alert generation is integrated with the business workflow so that they can be triggered automatically if needed (e.g., when screening/editing incoming referral data, automated alerts are generated for identified data issues). Alerts can also be created manually by case workers.

While the base solution supports the ability to generate alerts, DWSS' actual data or business scenarios for triggering alerts can be different and therefore the solution will have to be customized to meet DWSS' needs.

The CA CSE system supports three types of alerts – action required, compliance, and action needed. The "action required" alerts are system generated and require action from the user. Further, compliance type actions are associated with a timeline within which the action must be completed (usually due to federal mandates). These alerts need to be

marked complete by entering details on a "completion details" screen and users are not allowed to delete these alerts.

The "action needed" alerts are for information purposes and the users are not required to update the action status for the alert. Example: a case worker can send a notification to another case worker using this alert type (action needed). The recipient case worker can delete the alert after reading it.

The base solution provides an alert search screen that can be used to search alerts by type and recipient. Authorized users can forward alerts to other users using the "reassign" feature on the alert details screen.

Completed alerts are automatically removed from the work list and alerts are prioritized when displayed in the list.

Summary

NCSEAS includes alert-management functionality that is based on the CA CSE systems' alert management component. This component supports informational as well as action type alerts. Alert reassignment/forwarding and filtering is also supported.

Technical Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development
Alerts Management	1	1	0	0

Table 3.3- 29. Alerts Management Fit Gap Analysis.

3.3.19 Customer Service

Attachment M, Implementation Vendor Requirements, Technical Requirements
(#100) The system must support Interactive Voice Response (IVR) interactions.
(#101) The system must offer a customer service web-based portal to support retrieving basic case information, supplying informational updates, making payments, and other forms of customer interaction.
(#102) Document generation must support multiple languages.

The CA CSE system does not currently support an extract of data to a separate data repository to service the needs of an IVR solution. In the CA CSE system the IVR solution is directly integrated with CA CSE and accesses the CA CSE data in real-time. An enhancement is therefore required to establish an extract and provide required data for the DWSS-specific IVR system.

IVR systems have diverse needs that require up to date transaction data. At the same time the security of NCSEAS data and other assets must not be ignored. Further, the 2 systems should be sufficiently decoupled to prevent unintended side effects of system changes or unplanned downtime in the interfacing partner.

- ***We propose that the IVR system access data from NCSEAS in real time using web services similar to our implementation in Pennsylvania child support***
- ***NCSEAS will not provide direct access to its data and instead access data populated using data extracts at periodic intervals. This allows for continued IVR access while the batches are in process. This also allows performing scheduled maintenance on the online transaction processing system without affecting the IVR functionality***

- ***We identify the data extract requirements of the IVR system (file format, frequency of delivery)***
- ***We identify the transmission channel for the extract file***
- ***Design and construct the extraction batch job to generate the file***
- ***Orchestrate and test the batch interface (scheduling of job, extraction of data, transmission of extract file)***

The California system includes a self-service web site that is integrated with the CA CSE database and therefore accesses the CA CSE data in real-time. The self-service functionality supports demographic updates, viewing case information, and informational updates. We also have experience of building a customer service portal in Oregon using responsive web design techniques to provide multiple device support on mobile and tablets. We can transfer the current customer portal functionality as required by DWSS or optionally, transfer the concepts from California and implement the solution using modern mobile friendly technologies such as Angular and incorporate responsive web design techniques as we did in Oregon. Customization is required to support electronic payments and the generation of documents via the web site.

Some of the key features of this self-service web site are:

- ***Account registration using participant id and a password or PIN***
- ***Submit online application for IV-D services***
- ***View and submit inquiries.***
- ***Allow a CP or NCP to provide updates to personal information and to information about the other party on their cases.***
- ***View appointments***
- ***View case information***
- ***View electronic document information and download forms***

Customization is needed to meet DWSS' security requirements and user account management processes.

CA CSE uses Adobe Lifecycle as its document generation platform. Deloitte can leverage DWSS' enterprise Thunderhead platform for document generation for NCSEAS. This requires enhancements to the base solution framework (see Section VI: 4.4.12 Document Generation and Document Management for details).

There are 500 notices in DWSS that have to be supported in both English and Spanish. Thunderhead provides the capability to build templates that support both languages. We assume that DWSS will provide the text for both English and Spanish version of the notices.

During the design effort we also work with DWSS to verify requirements are satisfied in terms of the information displayed both internally and to public users.

Summary

NCSEAS meets DWSS' customer service requirements via customization and some enhancements to the customer service module of CA CSE. Data extracts can be provided to an IVR system via batch jobs, alternately the IVR can fetch data in real time using web services. The details will have to be worked out in collaboration with the IVR system. The web based customer service portal supports retrieval of basic case information and informational updates like notices. The document generation module for NCSEAS supports English and Spanish languages.

Technical Area	*Total Requirements*	*Standard Function*	*Modification Requirement*	*Custom Design & Development*
Customer Service	***3***	***2***	***0***	***1***

Table 3.3- 30. Customer Service Fit Gap Analysis.

3.4 Functional Requirements

3.4 FUNCTIONAL REQUIREMENTS
For the functional requirements, see Section 2 of Attachment M, Implementation Vendor Requirements.

Due to the confidential nature of our response throughout all the requirements for our response of Section V: 4.3 Functional Requirements, pages V-88 to V-210, Deloitte has provided this section in Part 1B – Confidential Technical Submission. This has been noted on Attachment A Confidentiality and Certification of Indemnification.

3.5 Security Standards

3.5 SECURITY STANDARDS

Security standards are included within the technical requirements identified in Section 3.3, Technical Requirements. In addition, the following security standards/requirements will be included:

Please refer to Section V: 3.3.9 Security to see how our solution meets requirements related to Security Standards and Security Architecture identified in RFP Section 3.3 Technical Requirements. The following sub-sections describe our approach to meeting the additional standards and requirements.

3.5.1 Security Standards Compliance

3.5 SECURITY STANDARDS

3.5.1 System must comply with all applicable Office of Child Support Enforcement (OCSE), Internal Revenue Service (IRS), Social Security Administration (SSA), and State of Nevada security standards. In cases where two or more regulations providing conflicting guidance, the more rigorous guidance will apply. Required standards and control matrices include but are not limited to:

3.5.1.1 IRS Publication 1075;

3.5.1.2 Federal Information Processing Standard (FIPS) 140-2;

3.5.1.3 Automated Systems for Child Support Enforcement: A Guide for States;

3.5.1.4 Electronic Information Exchange Security Requirements and Procedures for State and Local Agencies Exchanging Electronic Information with The Social Security Administration;

3.5.1.5 Nevada Revised Statute (NRS) 205.4742 – "Encryption" defined; and

3.5.1.6 NRS 603A – Security of Personal Information.

Deloitte's approach to addressing federal and state laws and regulations involved in the processing of Nevada Child Support Enforcement Automated System (NCSEAS) System, includes management, operational, and technical controls from Deloitte Security & Privacy Risk Framework (Risk Framework).

Deloitte's Risk Framework is extensible, and incorporates requirements from additional industry, regulatory, and state-based data sources, providing a broad and demonstrated framework. The Risk Framework identifies similar controls issued by different regulatory sources that are then consolidated into a unified control outlining the guidance to be implemented by the System. Our Risk Framework provides a single source of applicable rationalized security and privacy controls that drive compliance activities. Deloitte incorporates applicable State of Nevada security and privacy standards and policies to our Risk Framework to address the States specific security and privacy requirements.

The following figure depicts our layered approach to securing the NCSEAS System.

Deloitte has implemented Child Support Security requirements such as IRS 1075, NIST 800-53, OCSE Guidelines in the following states:

- ***Oregon – Origin***
- ***Pennsylvania - PACSES***
- ***Florida - CAMS***
- ***California – CCSAS***

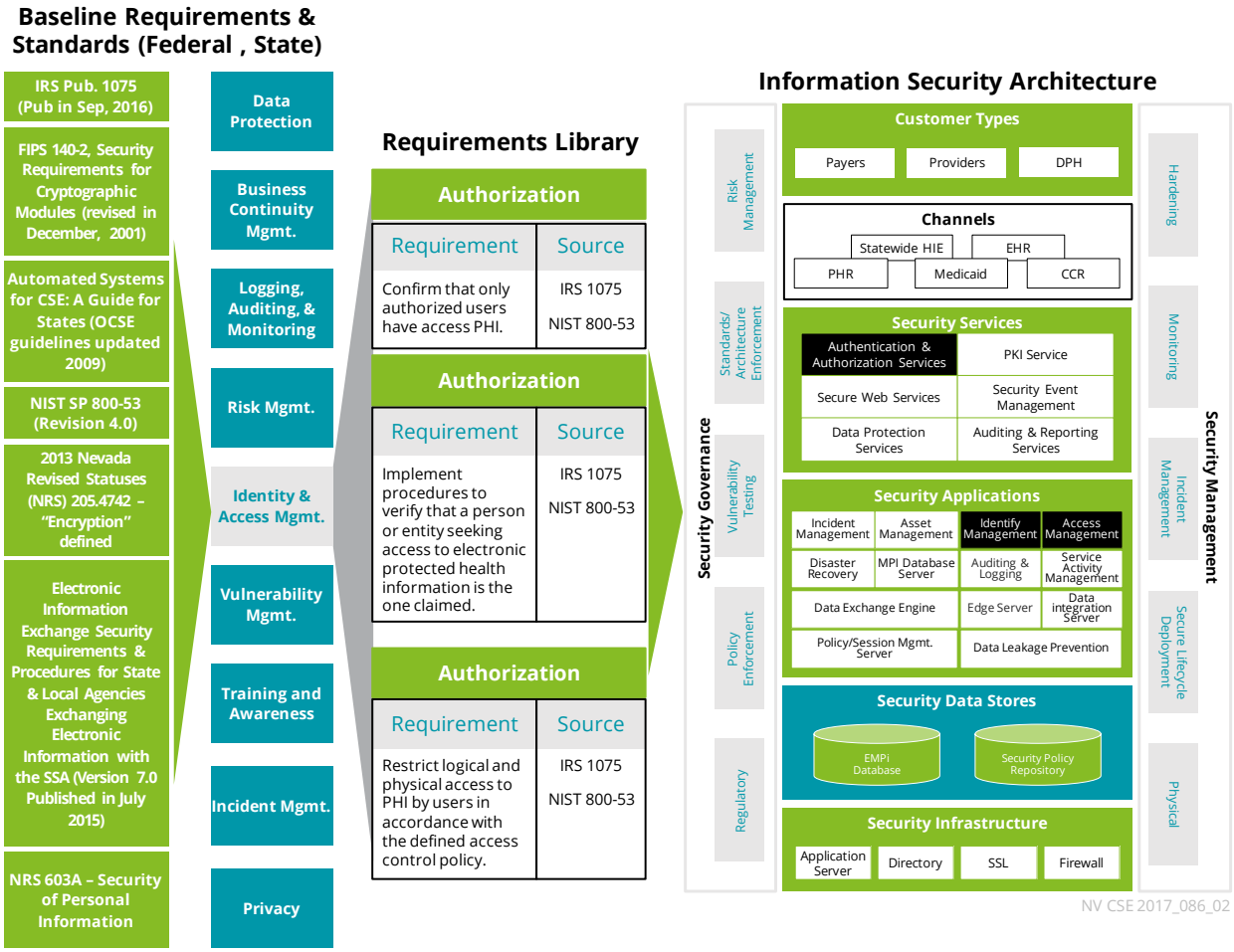


Figure 3.5- 17. Deloitte Security & Privacy Risk Framework

Deloitte incorporates the security controls from the list of applicable standards identified in the RFP into our Risk Framework. These include:

- ***IRS Pub. 1075 (Published in September 2016)***
- ***Federal Information Processing Standard (FIPS) 140-2, Security Requirements for Cryptographic Modules (Revised in December, 2002)***
- ***Automated Systems for Child Support Enhancement: A Guide for States (OCSE guidelines updated 2009), herein referred as OCSE Guidelines***
- ***NIST SP 800-53 (Revision 4.0)***
- ***Electronic Information Exchange Security Requirements and Procedures for State and Local Agencies Exchanging Electronic Information with The Social Security Administration (Version 7.0 Published in July 2015)***
- ***2013 Nevada Revised Statutes (NRS) 205.4742 – "Encryption" defined***
- ***2005 NRS 603A – Security of Personal Information***

The rationalized set of security controls serve as a baseline set of security requirements that are modified as required by the State. We develop a solution design based on your approved security requirements and work collaboratively with the State to determine a path forward as the State may choose to not address certain requirements based on cost, complexity, and/or risk.

Deloitte leverages the Security Standards Crosswalk created for the State of Oregon Child Support System as an accelerator to compare the control requirements of the various security standards such as IRS Publication 1075 (September 2016 Revision), NIST 800-53 (Revision 4), and Office of Child Support Enforcement (OCSE) guidelines and identify the guidance to be implemented by the system. Based on our prior experience with implementation and maintenance of similar solutions in Pennsylvania, Wisconsin, Kentucky, Texas, Florida, California and Indiana, our security team is cognizant of the security controls required to protect the NCSEAS system.

3.5.2 Tracking Changes

3.5 SECURITY STANDARDS
3.5.2 Should software versions, applicable standards or applicable controls change during the development process, the vendor shall be responsible for tracking those changes and incorporating them into the design. The final deliverables must comply with all applicable standards and controls that are current at time of delivery.

Deloitte follows a demonstrated methodology for identifying, testing and managing the software versions for the various commercial of the shelf (COTS) products used in our solution. The software changes will be identified, assessed, and deployed based on the project timeline at specific intervals. Security patches are tested and analyzed in lower environments before they are deployed across the various system environments unless the State's configuration management policy indicates otherwise for select scenarios, such as the emergency changes. Deloitte maintains a software and hardware inventory, which will be updated at specific point in time based on the project plan and milestones.

If the applicable standards to the system are revised or updated, Deloitte works with the State to perform an impact analysis of these changes on the system being built, and recommend an appropriate approach to manage these changes.

3.5.3 Protection of Sensitive Information

3.5 SECURITY STANDARDS
3.5.3 Protection of sensitive information will include the following: All data associated with legacy and newly developed applications must be encrypted in transit and at rest, no exceptions.

The requirement for protection of sensitive information defined above regarding encryption of sensitive data, including confidential Personal Data in the solution, is addressed by our solution.

Data at-rest

Data at rest refers to inactive data that is physically stored in a digital form. Our solution leverages hardware level encrypted storage drives to protect data. Our solution for data at

rest addresses the Federal Information Processing Standards (FIPS) 140-2 standards for encryption.

Data in-transit

In addition to encrypting the data at rest, our solution uses the Transport Level Security (TLS) 1.2 protocol to encrypt data in transit. Our solution uses a 128-bit AES encryption algorithm for encrypting data while in transit, including Confidential Personal Data, Sensitive Data, and Sensitive Information migrated into our solution as part of this project.

The Agency will be responsible for encrypting/protecting sensitive legacy data and for protecting data coming from external systems.

3.5.4 Documented Security Specifications

3.5 SECURITY STANDARDS
3.5.4 All information technology services and systems developed or acquired by agencies shall have documented security specifications that include an analysis of security risks and recommended controls (including access control systems and contingency plans).

To help define and document NCSEAS project security specifications, and deliver an end-to-end solution that supports DWSS's security requirements, Deloitte brings over 12 years of experience and knowledge from our public sector Cyber Risk Services. During this project, we work with you to define, document, and submit the NCSEAS project's security specifications by analyzing business requirements, State security and industry-leading standards, and relevant regulations. We identify regulatory security and privacy impacts based on:

- ***IRS Pub. 1075 (Published in September 2016)***
- ***Federal Information Processing Standard (FIPS) 140-2, Security Requirements for Cryptographic Modules (Revised in December, 2002)***
- ***Automated Systems for Child Support Enhancement: A Guide for States (OCSE guidelines updated 2009)***
- ***NIST SP 800-53 (Revision 4.0)***
- ***Electronic Information Exchange Security Requirements and Procedures for State and Local Agencies Exchanging Electronic Information with The Social Security Administration (Version 7.0 Published in July 2015)***
- ***2013 Nevada Revised Statutes (NRS) 205.4742 – "Encryption" defined***
- ***2005 NRS 603A – Security of Personal Information***

Deloitte will help DWSS document the NCSEAS project's security specifications in the Security Management Plan (SMP) that includes the following considerations for the NCSEAS project:

- ***Identity and Access Management (IAM) controls including:***
  - ***Role-based access***

- ***User authentication***
- ***User authorization***

- ***Contingency controls around Recovery Point Objective (RPO), Recovery Time Objective (RTO), resilient and failover architecture, load balancing architecture, data backup, and recovery mechanisms are documented in Business Continuity and Disaster Recovery Plan. Our overall approach to Business Continuity and Disaster Recovery planning can be found in Section VI: 4.8 Business Continuity and Disaster Recovery Plan***
- ***Data encryption controls such as safeguarding of data at rest, in use, and in transit using that address FIPS 140-2 encryption standards***
- ***Include a paragraph to summarize other safeguards that are used by DWSS such as audit logging controls and infrastructure security controls***

Based on our prior experience with implementation and maintenance of similar solutions in Pennsylvania, Wisconsin, Kentucky, Texas, Florida, California and Indiana, Deloitte is cognizant of the security controls required to protect the NCSEAS system. These security controls assist in avoiding, counteracting, and mitigating the risks of data loss or theft from the NCSEAS system.

The Security Specifications list the security controls defined along with their classification, leveraging our Security Risk Framework. The security controls are further classified into the following categories:

Control Classification	*Description*
Management Controls	***Controls mapped as management controls are specific to the management and maintenance of risk of NCSEAS security in the State solution such as security policies, procedures as applicable from NIST SP 800-53, Revision 4, IRS Publication 1075 (Dated September 30, 2016).***
Technical Controls	***Controls mapped as technical controls which NCSEAS system executes such as Authentication, authorization, antivirus, firewalls. These controls are dependent upon the proper functioning of the system for their effectiveness. The implementation of technical controls, however, usually requires significant operational considerations and should be consistent with the management of security within the State.***
Operational Controls	***Controls mapped as operational controls are implemented and executed by staff of the NCSEAS solution support (as opposed to systems) such as incident response, security awareness and training. These controls are put in place to improve the security of a particular system (or group of systems). They often require technical or specialized knowledge and often rely upon management activities as well as technical controls.***

Table 3.5- 31. Controls Classification.

These security controls protect the confidentiality, integrity and availability of information. We incorporate the details of each of the security controls, their implementation plan, and steps of verification in the Security Management Plan (SMP) to provide traceability to security requirements.

Deloitte's solution implements the identified security controls across the following domains in the NCSEAS system:

Security Domain	*Implementation*
Identification and authentication	***The NCSEAS system may be accessed by DWSS's employees, contractors, and, when appropriate, employees of partner agencies. The users provide their credentials before gaining access to the NCSEAS system. Deloitte has extensive knowledge about DWSS's existing access identity and access management solution, which is built on Novell's NetIQ Identity Manager and Novell Access Manager.*** ***Deloitte will leverage our knowledge of the State's Novell Access Manager, Novell eDirectory solutions, and the transferred CA CSE solution to store the usernames and encrypted passwords, single sign-on and authentication of NCSEAS users. DWSS will be responsible for configuring the Novell Access Manager and Novell eDirectory as required for the NCSEAS solution.***
Authorization	***The NCSEAS system supports integration with Novell Access Manager and Novell eDirectory for user authentication and coarse grained authorization. Novell Access Manager uses an Access Gateway as a reverse proxy, which is responsible for intercepting user requests to perform authentication and coarse grained authorization. Fine grained access control to the NCSEAS system is performed within the application.*** ***Coarse Grained Authorization – NCSEAS system uses Novell Access Manager to allow or block access to specific application functionality pages such as Case Intake, Locate or Financials based on user's roles. User's association to these coarse grained authorizations are managed through roles stored in Novell eDirectory, by assigning the requisite roles to the user.*** ***Fine Grained Authorization -- is a type of authorization granted to a user at an application component level, and determines if the user can access individual controls on an application page. Fine grained authorization is application and business rule specific, and is managed within the NCSEAS application. Alternatively, NCSEAS can be integrated with the Personnel DB System to implement fine-grained authorization. Deloitte works with DWSS to determine the approach for fine-grained authorization during JAD sessions in the Elaboration phase.***
Confidentiality and Integrity	***Deloitte understands that unauthorized access to the NCSEAS solution has to be prevented. User authentication for NCSEAS system is performed using Novell Access Manager, which is configured to lock out a user's account if the user exceeds the configured threshold limit for consecutive unsuccessful logon attempts. Once an account is locked, the account can only be used or unlocked by the actual account owner using the Self Service Password Reset (SSPR) functionality. This helps prevent unauthorized access to the NCSEAS application. The number of attempts after which the account is locked is configurable as a part of the solution.*** ***The NCSEAS system uses Novell Access Manager security policies to prevent attempts to obtain access to sensitive data like PII, and FTI. The security controls implemented for access, along with auditing, enables confidentiality and integrity of the application data.***
Auditing	***The NCSEAS system integrates with the DWSS Splunk implementation for auditing. DWSS will be responsible for configuring the Splunk use cases (Reports, alerts, dashboards, and associated correlation and parsing rules) for the NCSEAS solution, as well as monitoring Splunk licensing requirements, Splunk operations and security monitoring. DWSS is responsible for incident response workflows based upon security monitoring events. Deloitte will support DWSS for configuring the Splunk log forwarders to ingest logs from servers/COTS Products as required for the NCSEAS solution.***
Data Security	***The NCSEAS solution will leverage hardware level encrypted storage drives to protect system data, including the parameter tables and other application data tables with sensitive data. Our solution transparently encrypts database data files before writing them to the disk, protecting sensitive application data from direct access at the operating system level. In addition to encrypting data at rest, the NCSEAS solution uses TLS encryption to secure data in transit.***

Table 3.5- 32. Controls - Security Domains

3.5.5 Security Requirements

3.5 SECURITY STANDARDS
3.5.5 Security requirements shall be developed at the same time system planners define the requirements of the system. Requirements must permit updating security requirements as new threats/vulnerabilities are identified and/or new technologies implemented.

As part of our approach to systems integration for the NCSEAS project, we determine the applicable regulatory requirements by leveraging our Security Risk Framework. During the requirements sub-phase, Deloitte identifies relevant regulatory requirements as baseline requirements that can be modified as required by the State to determine the functional and non-functional security requirements for the solution. We work with DWSS to help address the following objectives outlined in the RFP:

- ***Develop security requirements at the same time we define system requirements.***
- ***Update security requirements as new threats/vulnerabilities are identified and/or new technologies implemented.***

Objective 1

Identify And Document Security Requirements During the Requirements Sub-Phase.

During the requirements sub-phase, Deloitte identifies and documents security functions and related system capabilities. In addition, we help identify the impacts from regulatory requirements. We work with DWSS to define security requirements and develop related test cases. The detailed security requirements will be documented in the Requirements Traceability Matrix document and be managed through the phases of the project, including design, development, testing, and implementation. We will leverage the existing controls that are used by DWSS, Hosting Provider and Partners for the NCSEAS solution, where possible. DWSS will be responsible to actively participate in the design working sessions for the NCSEAS solution. For details on this, please refer to Section V: 4.27.2 Activities, the Requirements Traceability Matrix subsection.

Objective 2

Update Security Requirements as New Threats/Vulnerabilities are Identified and/or New Technologies Implemented.

During the project, we know that there can be new threats/vulnerabilities identified or new technologies/version upgrades implemented that could impact NCSEAS project security requirements. We work with DWSS to evaluate whether requirements need to be modified by identifying and analyzing impacts to regulatory compliance, project timelines, and resources through the project change control process.

3.5.6 Back Doors

3.5 SECURITY STANDARDS

3.5.6 Systems developed by either internal State or contracted system developers shall not include back doors, or other code that would cause or allow unauthorized access or manipulation of code or data.

Deloitte acknowledges and agrees with the RFP requirement above. Deloitte's approach "bakes in" security and privacy for the solution during SDLC phases to identify, design, and implement controls to safeguard PII and other sensitive data, and to assess our controls to identify and mitigate gaps. Using this approach and the State's standard controls, Deloitte helps prevent unauthorized access or manipulation of code or data. Deloitte works with DWSS to perform the following activities that help prevent unauthorized access to the NCSEAS system:

Develop security design. ***Deloitte works with you to identify security threats that affect the planned software solution and interactions needed to support business processes. Additionally, we bring a thorough understanding of the regulatory security requirements that play a vital role in shaping the security design. Deloitte develops a security design for the solution that addresses approved requirements and documents how design elements trace back to approved requirements in the Requirements Traceability Matrix (RTM).***

Conduct data lifecycle analysis. ***During the design sub-phase, we conduct data lifecycle analysis to provide controls required to protect data that is collected, used, stored, shared, and destroyed by the NCSEAS system.***

Establish secure coding guidelines. ***We leverage the secure coding guidelines established for the CA CSE system and work with DWSS to tailor the guidelines for the software technology being used (programming language, database, and Web servers).***

Integration with NV's Identity and Access Management (IAM) System. ***The NCSEAS solution supports integration with the State's IAM solution to leverage role-based access controls.***

Security on the code base. ***Deloitte uses Perforce, the DWSS's current version control system, to manage code changes, control access to application source code, and maintain an audit trail of changes made.***

Perform peer code review. ***Our team leads review the source code developed by the Development team for quality and coding standards.***

Secure source code analysis and vulnerability remediation. ***Our first-hand experience with the CA CSE solution provides us a sound foundation to implement the NCSEAS system. Updates to application code undergo secure code analysis using Hewlett Packard (HP) Fortify to identify and pinpoint security vulnerabilities in the source code and mitigate the threat of unauthorized access or manipulation of code or data. We perform manual analysis, to filter false-positives and for the high and medium risk vulnerabilities reported by the automated code analysis tool (HP Fortify). Our secure code analysis attempts to identify the security vulnerabilities in the source code affecting:***

- ***Authentication and Authorization***
- ***Session management***
- ***Configuration management***
- ***Error/exception management***

- ***Secure communications***
- ***Sensitive data management (Privacy of information)***
- ***Parameter validation***
- ***Use of database queries within the source code***
- ***Audit log management***
- ***Cache management, application pooling and component reuse***
- ***System calls***
- ***Race conditions***

Assessments of updated code are performed three times during the project SDLC:

- ***An initial assessment is performed during the Development sub-phase***
- ***A reassessment is performed during Test sub-phase***
- ***The final assessment is performed at the end of User Acceptance Testing (UAT), to check that the items identified have been addressed***

The defect tracking system, which is used to track application defects identified during testing, will also be used to track the issues and defects identified during these assessments along with the remediation recommendations.

Perform vulnerability assessment. ***Deloitte's practitioners work with you to identify potential vulnerabilities of the NCSEAS Application, using HP WebInspect. We further conduct a manual analysis of the vulnerabilities identified to filter false positives and work with you to analyze, prioritize, and remediate vulnerabilities based on their security severity as well as impacts to project timelines and resources. We perform both "black box" (wherein the tester does not have authenticated access of the application) and "grey box" (wherein the tester has authenticated access) assessments on the NCSEAS system using HP WebInspect and manual techniques. The HP WebInspect assessment for the NCSEAS system is performed during the Construction and UAT phases of the project. The threats are re-evaluated and checked for mitigation during Integration Testing.***

Perform information security risk assessment. ***Deloitte works with DWSS to perform an information security risk assessment on the NCSEAS system to identify gaps to applicable regulations such as the NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).***

3.5.7 Documented Change Control and Approval Process

3.5 SECURITY STANDARDS

3.5.7 All system development projects must include a documented change control and approval process and must address the security implications of all changes recommended and approved for a particular service or system. The responsible agency must authorize all changes.

Deloitte understands that, if not managed effectively, changes to existing system resources, processes, and security controls pose a potential risk to project progress; however, Deloitte's past record of working as a team with the State has fostered a relationship and platform for effective future collaboration to address potential changes promptly and efficiently to reduce project risk.

Our overall approach to change management can be found in Section VI: 4.2.4 Change Control Procedure.

3.5.8 Obsolete Systems and Information

3.5 SECURITY STANDARDS

3.5.8 Application systems and information that become obsolete and no longer used must be disposed of by appropriate procedures. The application and associated information must be preserved, discarded, or destroyed in accordance with Electronic Record and Record Management requirements defined in NRS 239 and NAC 239, Records Management.

Deloitte's extensive HHS systems experience gives us a broad and deep insight into the sensitive information that these systems contain, including information retention requirements. Our experience in 30 states and the federal government has covered many system types that contain a vast array of types of sensitive data, such as PII, FTI, financial, and legal information. We recognize the importance of properly identifying the actions for this information and making certain that these actions adhere to policies such as NRS and NAC 239.

We also recognize the importance of addressing electronic record management requirements specified in the RFP. Nevada has taken the first step by creating Nevada Revised Statute (NRS) and Nevada Administrative Code (NAC) 239, which provide a roadmap for handling public records. Using your regulations, we help you identify obsolete information and records that are required to be destroyed for the NCSEAS solution. We work with DWSS to define archive and purge functionality for the NCSEAS solution, taking into account the applicable State statutes, data retention policies, and solution requirements. For further details on our approach for this standard, please refer to Section V: 3.2.2 Archive and Purge.

3.5.9 Software Development Projects

3.5 SECURITY STANDARDS
3.5.9 Software development projects must comply with State Information Security Consolidated Policy 100, Section 4.7, Software Development and Maintenance and State Standard 131, "Security for System Development."
3.5.9.1 Separate development, test, pre-production, and production environments must be established on State systems. Production data used in non-production environment must be cleansed and masked so as not to expose sensitive information.
3.5.9.2 Processes must be documented and implemented to control the transfer of software from a development environment to a production environment. These processes must comply with DWSS code promote process including release scheduling.
3.5.9.3 Development of software and tools must be maintained on computer systems isolated from a production environment.
3.5.9.4 Access to compilers, editors, and other system utilities must be removed from production systems.
3.5.9.5 Controls must be established to issue short-term access to appropriate development staff as necessary to correct system problems.
3.5.9.6 The implementation vendor will provide all necessary software and services to scrub, mask and/or otherwise obfuscate production data used in all environments other than production.
3.5.9.7 Security requirements and controls must be identified, incorporated into, and verified throughout the planning, development, and testing phases of all software development projects. Security staff must be included in all phases of the System Development Lifecycle (SDLC) from the requirement definitions phase through implementation phase.

Deloitte has worked side by side with the State to address security policy requirements. We understand State Information Security Consolidated Policy 100, section 4.7 and Security for System Development, and have addressed those requirements while working with the State on existing systems. We understand that it requires the State employees and contractors to annually complete an Information Security training and a corresponding agreement. We work with the State so that NCSEAS project members address this requirement.

Separate Development, Test, Pre-Production, and Production Environments

Deloitte's HHS experience in effectively implementing Child Support Enforcement (CSE) systems positions us to understand that the use of multiple environments is required to maintain and facilitate the operations of complex systems. We will collaborate with DWSS to use separate/segmented development, test, pre-production and productions environments. Deloitte will used the data provided by DWSS in non-production environments and will work with DWSS to define the path forward to cleanse data, where required.

Deloitte will support DWSS in its communication with the IRS if live production data is provided by DWSS for use in the Non-Production environments for testing purposes.

For details on this, please refer to Section V: 3.2 Computing Platform.

Process Documentation

Our 35 years of experience in the HHS industry, including experience in 30 states and with the federal government, gives us an appreciation and understanding of the importance of implementing and documenting reliable and repeatable processes to transfer software from a development environment to multiple testing environments, and eventually to the Production environment. You can find our detailed implementation approach on how we address these requirements in Section VI: 4.17 Release Management Plan.

Maintain of Development of Software and Tools

To provide physical isolation between the development software and tools and the Production environment, we work with DWSS to implement development software and tools on the development servers. As discussed in Section V: 3.2 Computing Platform, the Production environment is isolated from other environments.

Access to Compilers, Editors, and Other System Utilizes

Compilers, editors, and other system utilities are an important part of any system, and our NCSEAS solution is no exception; however, access should be closely regulated and monitored. We address the requirement to remove direct access to compilers, editors, and other system utilities from Production systems. Our detailed approach to these requirements can be found in Section VII: 5.11 Configuration Management.

Established Controls

We maintain the Production system as a pristine environment, with changes first being made in lower environments. After testing is performed in lower environments to address testing acceptance criteria, changes are migrated to the Production environment. To keep the Production systems pristine, direct access to them is tightly controlled; however, we understand that a situation may arise when short-term, direct access to the Production environment is required. We work with the State to establish and implement a process for issuing short-term access to Production systems for development staff. This access allows required staff to access required portions of the Production systems for a predefined time. Access to the Production systems is revoked promptly after the change has been completed. Our detailed approach to these requirements is in Section VII 5.11 Configuration Management.

Software and Services to Scrub, Mask and/or Obfuscate

Deloitte's approach to data protection is to encrypt sensitive data at rest and in transit according to encryption standards outlined in Federal Information Processing Standard (FIPS) 140-2. We will encrypt sensitive data in transit using TLS 1.2 encryption over HTTPS and via Secure File Transfer Protocol (SFTP) for file transfers where required. To encrypt sensitive data at rest, Deloitte will leverage hardware based encryption that addresses the FIPS 140-2 standards. Server-to-server communication will be encrypted in each environment that has FTI data.

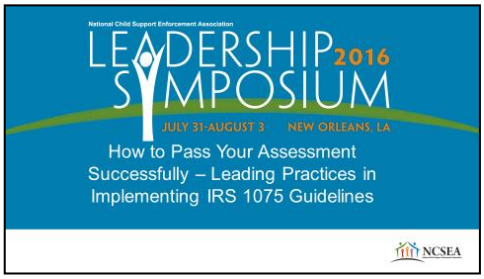
Deloitte will collaborate with DWSS to identify and mask the FTI and PII "data in use" on the web front-end of the Worker Portal and Customer Service Portal. Based on our previous experience, it is more expensive and laborious to generate dummy data that will meet the complex production requirements of a CSE System. To overcome this challenge, Deloitte proposes to use a small subset of the production data during the conversion phase, system test phase, and user acceptance test (UAT) phase of the project. We will support the Agency in providing required information for the "Live Data Testing Notification form" required by the IRS. Each environment with Production data will be secured as per the security framework and the applicable regulatory requirements.

Security Requirements and Controls

Our strategy to address regulatory and contractual requirements leverages our security risk framework, which contains a rationalized set of requirements and associated risk statements. The framework has a common repository of information security requirements containing authoritative sources from more than 300 different laws and industry sources, including NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).

Deloitte security practitioners have spoken nationally at the following Child Support conferences on security standards for Child Support

- ***National Child Support Enforcement Association Leadership Conference***
- ***Eastern Regional Interstate Child Support Association - ERICSA***



In concert with the State, we leverage our security risk framework as a baseline for establishing security controls for the solution. It also helps us update your security requirements, controls, and standards to establish a tailored approach for the Security Management Plan (SMP). Prior to the Design phase, our team reviews with DWSS the applicable controls based on relevant business practices and regulatory standards (e.g., IRS Pub 1075). The initial SMP is then created during that phase and controls are evaluated to test their effectiveness. During the Development phase of the project, the SMP is refreshed with the updated security requirements from the newly identified threats/vulnerabilities/security architecture and the controls are re-assessed. A final evaluation of the controls is performed during the Testing phase and final updates to the SMP are delivered to DWSS. Our overall approach to Security Management Plan can be found in Section VI 4.22 Security Management Plan.

This risk-based framework helps address the security and compliance tracking requirements for the implementation and can accelerate the evaluation of the regulatory controls. Using the framework means we can deliver within the requested time frame while addressing your security objectives. It also facilitate the development of a broad, agency wide security perspective that covers the following areas:

- ***Policies, standards, procedures, and guidelines***
- ***Access control (authentication, authorization, and trust relationships)***
- ***Data protection, including encryption tools and techniques***
- ***Network security (e.g., transport layer security (TLS), and firewall)***
- ***Logging and monitoring***
- ***Change management***

The NCSEAS system processes different information types (FTI, PII) depending on the function in use. The function and the information processed by the function collectively is its "risk profile." The standards applicable to a given risk profile are based on the data or

information type processed by the function. We design and implement security and privacy controls for each "profile" such that these controls address the applicable requirements from regulations and standards from the requirement definitions phase through implementation phase. The risk framework and the Security Management Plan facilitates the implementation of a sound security program that goes beyond compliance. It should protect against risks and threats, detect potential security events when they occur, and recover from them security incidents with minimal impact to business operations.

3.5.10 Connections to DWSS CSE System

3.5 SECURITY STANDARDS
3.5.10 All connections to the DWSS CSE system shall be through a Network Access Control solution, and all data in transit between remote location and the DWSS CS system shall be encrypted using Federal Information Processing standards (FIPS) 140-2 encryption standards.

NCSEAS utilizes encryption mechanisms to protect information transmitted within and outside the production network. The encryption mechanisms use TLS v1.2 with approved modules as per FIPS 140-2 encryption standards.

For details on this, please refer to Section V: 3.2 Computing Platform.

3.5.11 Support Restriction of Access

3.5 SECURITY STANDARDS
3.5.11 The DWSS CSE system shall support restriction of access to, and disclosure of, the FPLS information to authorized personnel who need to access FPLS information to perform their official duties in connection with the authorized purposes specified in the security agreement.

Our state government client portfolio includes agencies in over 30 states, including California, Oregon, Washington, Alaska, Texas, New York, Utah, Nevada, Kentucky, Illinois, Rhode Island, Georgia, Minnesota and North Carolina. In addition, we have the unique advantage of transferring CSEAS to the State of Oregon. We have assisted our clients with a variety of cyber risk services including restricting access and protecting sensitive data like Federal Parent Locator Service (FPLS) information, Federal Tax Information (FTI) and other Personal Identifiable Information (PII). Deloitte will leverage that knowledge to facilitate restriction of access to, and disclosure of, the FPLS information to only authorized personnel.

The Office of Child Support Enforcement (OCSE) has security agreements in place with the State. These agreements specify the management, operational, and technical controls to provide the security of Federal Parent Locator Service (FPLS) information, child support confidential program information, and information systems that transmit, store, and process FPLS information and child support confidential program information.

Deloitte assists the State in implementing operational controls that require to be addressed, and includes the following activities:

- ***Identifying personnel security requirements such as access based on need to know, sensitivity of positions and screening of personnel, termination procedures, management of personnel user accounts, and guidelines for accountability and non-compliance consequences***

- ***Discussing the physical security requirements of the NCSEAS infrastructure***
- ***Describing the production input/output controls for the labeling, marking, processing, storage, and disposal tasks associated with the federal tax information (FTI)***
- ***Developing the contingency plan for the operation of the NCSEAS system***
- ***Documenting the processes and procedures that govern the NCSEAS system development and maintenance tasks, including change control, testing plans, emergency upgrade procedures, and assessment and review procedures***
- ***Discussing the security awareness and training requirements for the NCSEAS system***

3.5.12 Utilize and Maintain Technological Access Controls

3.5 SECURITY STANDARDS

3.5.12 The DWSS CSE system shall utilize and maintain technological (logical) access controls that limit access to FPLS information and CS program information to only those personnel who are authorized for such access based on their official duties and identified in the records maintained by DWSS.

The Security Management Plan that describes the technical controls includes:

- ***Description of the authentication control mechanisms and the procedures that govern implementation of these controls (e.g., password construction, length, aging, invalid access attempts, and digital/electronic signatures)***
- ***Description of the logical access control mechanisms including procedures for granting/restricting***
- ***Description of the NCSEAS audit capabilities and the procedures that govern types of auditable activities, audit trails, access to audit logs, review of audit parameters, support of incident investigations, and forensic activities***

Our NCSEAS Solution uses the CA CSE solution controls as the foundation for the technical controls. As implemented in California, the NCSEAS solution will use role-based access controls (RBAC) prior to providing access to data. Based on the RBAC model, the NCSEAS solution will assign system users, including State employees, contractors, and employees of partner agencies, specific roles based on their duties within the application. This solution addresses the Identification and Authentication controls (IA-2, IA-8) of NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016)

3.5.13 Restrict Access to FPLS Information and CS Program Information

3.5 SECURITY STANDARDS

3.5.13 The DWSS CS system shall restrict access to FPLS information and CS program information to assigned cases and areas of responsibility only.

The transferred CA CSE solution has built-in capabilities for the State administrators to assign roles to users. These capabilities are leveraged to assign specific roles to users in the NCSEAS system. To support the application's roles (with Novell eDirectory groups as their underlying entitlement), the CA CSE solution uses updated role definitions provided by Deloitte.

We assist the State with the architecture and design for integrating the CA CSE solution with Novell Access Manager for authentication and coarse-grained authorization. Novell Access Manager provides single sign-on and authentication for NCSEAS users against Novell eDirectory. In addition to authentication, Novell Access Manager provides coarse grained (page-level) authorization based on the roles/groups assigned to the user. This allows the State to restrict access to sensitive forms within the application. The NCSEAS solution will use Google Authenticator services for Multi-Factor Authentication (MFA). Deloitte will support DWSS to integrate Google Authenticator and the NCSEAS solution with their existing security infrastructure.

The NCSEAS system leverages existing capabilities in the CA CSE solution to enforce fine grained authorization (screen controls level) within the application based on the user attributes passed back by Novell Access Manager during authentication. This allows the application to apply specialized security mechanisms like detecting a conflict of interest with a case and the ability to control who has access to view, add, or modify data within the system. Deloitte works with DWSS to determine the appropriate approach for fine-grained authorization during JAD sessions in the Elaboration phase.

3.5.14 Transmit and Store FPLS Information

3.5 SECURITY STANDARDS
3.5.14 The DWSS CSE system shall transmit and store all FPLS information in a manner that safeguards the information and prohibits unauthorized access. DWSS and OCSE shall exchange CSE program information via a mutually approved and secure data transfer method which utilizes FIPS 140-2 encryption standards and meets the safeguard requirements of 45 CFR 303.21.

The NCSEAS system uses Novell Access Manager and Novell eDirectory to authorize and authenticate users. The NCSEAS system also uses Novell eDirectory to store the credentials for partner agencies. The user groups are stored in Novell eDirectory; Novell Access Manager uses this information to provide coarse-grained access authorization. The fine-grained authorization rules are controlled by application code.

Role-based access controls are used to restrict access to individuals within the NCSEAS system. Individuals are granted access to NCSEAS functions based upon their organizational role and least privilege concept. The Public's "read" and "write" access is disabled for files, objects, and directories that contain regulated data or may directly affect NCSEAS functionality and performance. Access to the file system is controlled based upon user's role within NCSEAS.

Further, the information transmitted within and outside the network use approved encryption mechanisms. The encryption mechanisms use TLS v1.2 with approved modules as per FIPS 140-2 standards.

3.5.15 Transmit and Store CSE Program Information

3.5 SECURITY STANDARDS

3.5.15 The DWSS CSE system shall transmit and store all CSE program information in a manner that safeguards the information and prohibits unauthorized access. DWSS shall use appropriate measures when exchanging CS program information among other state CSE agencies.

The NCSEAS system uses Novell Access Manager and Novell eDirectory to authenticate users and provide coarse-grained authorization. The NCSEAS system also uses Novell eDirectory to store the credentials for partner agencies. The user groups are stored in Novell eDirectory; Novell Access Manager uses this information to provide coarse-grained access authorization. The fine-grained authorization rules are controlled by application code.

Role-based access controls are used to restrict access to individuals within the NCSEAS system. Individuals are granted access to NCSEAS functions based upon their organizational role and least privilege concept. This facilitates that only relevant users with access permissions are able to access FPLS information. Public "read" and "write" access is disabled for files, objects, and directories that contain regulated data or may directly affect NCSEAS functionality and performance. Access to the file system is controlled using the application and based upon user's role within NCSEAS.

3.5.16 Prohibit Remote Access to FPLS Information

3.5 SECURITY STANDARDS

3.5.16 DWSS shall prohibit remote access to FPLS information, except through the use of a secure and encrypted (FIPS 140-2 and safeguard requirement 45 CFR 303.21 compliant) transmission link and using a minimum of two-factor authentication, as required by the federal Office of Management and Budget Memorandum 06-16 (OMB M-06-16). DWSS shall retain control of remote access through a limited number of managed access control points. The implementation vendor is responsible for establishing a two-factor authentication system that will interface with DWSS identity management.

Based on our prior experience with implementation and maintenance of similar solutions in Pennsylvania, Wisconsin, Kentucky, Texas, Florida, California and Indiana, we will implement a multi-factor authentication (MFA) solution that addresses FIPS 140-2 standards and 45 CFR 303.21 safeguard requirements. We bring lessons learned and a list of challenges we overcame, which will be leveraged to integrate two-factor authentication with DWSS's existing access identity and access management solution.

Users requiring access to the State infrastructure are required to have appropriate access controls in place in order to access the FPLS information. This process is streamlined by having the users access the network only through secure and encrypted links on the VPN that would require them to pass through a multi-factor authentication process. The State's existing infrastructure will be leveraged for two-factor authentication for users accessing the NCSEAS system remotely over the VPN. The NCSEAS solution will use Google Authenticator services for Multi-Factor Authentication (MFA). Deloitte will support DWSS to integrate Google Authenticator and the NCSEAS solution with their existing security infrastructure.

3.5.17 Time-Out Function

3.5 SECURITY STANDARDS
3.5.17 The DWSS CSE system shall utilize a time-out function for remote access and mobile devices that requires a user to re-authenticate after no more than thirty (30) minutes of inactivity.

The NCSEAS system leverages Novell Access Manager for session management for active system sessions and to enforce automatic sign-off and timeout techniques based on security requirements. Novell Access Manager is configured to terminate the session for NCSEAS system users after 30 minutes of inactivity. DWSS will be responsible for configuring the Novell Access Manager and Novell eDirectory as required for the NCSEAS solution.

3.5.18 Audit Reports for FPLS Information

3.5 SECURITY STANDARDS
3.5.18 The DWSS CSE system shall generate audit records for FPLS information that collect data associated with each query transaction to its initiator, capture date and time of system events and types of events. This functionality should be designed to interface with the current DWSS Splunk implementation.

To provide an audit log trail, our solution leverages the DWSS Splunk implementation for audit data correlation and reporting that addresses Audit and Accountability (AU) controls of NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).

Deloitte is a Splunk Master Global System Integrator (GSI) Partner, allowing us to deliver global, multi-functional platforms collaboratively with Splunk to help our customers achieve Operational Intelligence across the enterprise. We have 50+ Splunk certified professionals that have been delivering quality Splunk services and building custom solutions across multiple industries. We have demonstrated success in implementing solutions that allow our clients to improve their overall security posture, gain richer insight into their diverse data sets, and gain efficiencies in their IT infrastructures.

The NCSEAS system, its security components, and the IBM DB2 databases generate audit data per auditing and accountability requirements, including responsible user and the date/time of the event. These security event logs are integrated with the existing DWSS Splunk implementation for collection and correlation.

The logs capture audit trails for the following security events:

- ***User authentication (success and failures)***
- ***User authorization attempts (success and failures)***
- ***Access to NCSEAS system data, including sensitive data like Social Security Numbers (SSN) and other Personal Identifiable Information (PII)***
- ***Changes to critical records and/or data fields including, but not limited to, arrearage balance, monthly court-ordered support amounts, and family violence indicator***

The NCSEAS system is configured for alerts for sensitive events such as excessive failed login attempts in the production environment by the State so that appropriate corrective actions can be taken in a timely manner. Splunk configuration correlates the data based on the type of event, time of occurrence and trace it back to the user action that triggered the

event. DWSS will be responsible for configuring the Splunk use cases (Reports, alerts, dashboards, and associated correlation and parsing rules) for the NCSEAS solution, as well as monitoring Splunk licensing requirements, Splunk operations and security monitoring. DWSS is responsible for incident response workflows based upon security monitoring events. Deloitte will support DWSS for configuring the Splunk log forwarders to ingest logs from servers/COTS Products as required for the NCSEAS solution.

3.5.19 Log Each Computer Readable Data Extract Event from Databases Holding FPLS Information

3.5 SECURITY STANDARDS
3.5.19 The DWSS CSE system shall log each computer readable data extract event (secondary store or file with duplicate CSE program information) from any databases holding FPLS information. This functionality should be designed to interface with the current DWSS Splunk implementation.

To provide an audit log trail, our solution leverages the DWSS Splunk implementation for audit data correlation and reporting that addresses Audit and Accountability (AU) controls of NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).

The NCSEAS system, its security components, and the IBM DB2 databases generate audit data per auditing and accountability requirements, including responsible user and the date/time of the event. These security event logs are integrated with the existing DWSS Splunk implementation for collection and correlation.

The logs capture audit trails for the following security events:

- ***User authentication (login success and failures)***
- ***User authorization attempts (success and failures)***
- ***Access to NCSEAS system data, including sensitive data like Social Security Numbers (SSN) and other Personal Identifiable Information (PII)***
- ***Changes to critical records and/or data fields including, but not limited to, arrearage balance, monthly court-ordered support amounts, and family violence indicator***

3.5.20 Log Each Computer Readable Data Extract Event from Databases Holding CSE Program Information

3.5 SECURITY STANDARDS
3.5.20 The DWSS CSE system shall log each computer readable data extract event (secondary store or file with duplicate CSE program information) from any databases holding CSE program information. This functionality should be designed to interface with the current DWSS Splunk implementation.

To provide an audit log trail, our solution leverages the DWSS Splunk implementation for audit data correlation and reporting that addresses Audit and Accountability (AU) controls of NIST SP 800-53, Revision 4 and IRS Publication 1075 (Dated September 30, 2016).

The NCSEAS system logs computer readable data extract event (secondary store or file with duplicate CSE program information) from databases holding CSE program information.

This information will be fed into the Splunk solution for log correlation and analysis.

3.5.21 Support Erasure of Electronic Records

3.5 SECURITY STANDARDS

3.5.21 The DWSS CSE system shall support erasure of electronic records containing FPLS information and CSE program information when data is no longer required for authorized purposes. FPLS information and CSE program information in an individual's case file should be safeguarded per the security requirements in this document. FPLS information and CS program information that is made part of an individual's case file may be retained in the individual's case file based on DWSS' rules, procedures and federal guidelines for case file retention.

Deloitte has experience in 30 states, covering many system types that contain a vast array of types of sensitive data, such as PII, FTI, financial, and legal information. Having managed several mission critical applications including the CSEAS application in California, and other Child Support systems in Pennsylvania and Florida, has given us a broad and deep insight into the sensitive information that these systems contain, including information disposal requirements.

The State will validate proper disposal of FTI, FPLS and other sensitive data, for both electronic and non-electronic media following the required retention schedule. The following methods are followed:

- ***Physical documents containing FTI, FPLS and other sensitive data are destroyed by shredding to 5/16 of an inch or less according to IRS Publication 1075 (Dated September 30, 2016) requirements***
- ***Electronic media containing FTI, FPLS and other sensitive data is degaussed or overwritten to meet the requirements of IRS Publication 1075 (Dated September 30, 2016) and OCSE guidelines, and also then physically destroyed via pulverization, shredding, or incineration***
- ***Destruction of documents and electronic media containing FTI is recorded in the record keeping log. Logs are retained for the period as per Federal regulations. Following that period, the information will be purged from the NCSEAS system and eliminated***

Deloitte will collaborate with DWSS to identify the approach to meet State and Federal requirements for erasing electronic records. DWSS will be responsible for erasure/destruction of electronic records for the NCSEAS solution.

3.5.22 Utilize Existing Network Access Control Solution

3.5 SECURITY STANDARDS

3.5.22 The DWSS CSE system shall utilize the existing Network Access Control solution in conjunction with a virtual private network (VPN) option to enforce security policy compliance on all state and non-state devices that attempt to gain access to, or use, FPLS information not available through the application's Graphical User Interface.

The DWSS's existing Network Admission Control (NAC) infrastructure is leveraged to enforce security policy compliance on the state and non-state devices that attempt to gain access to, or use, FPLS information. The existing NAC solution evaluates pre-admission endpoint security policy compliance based on device type, operating system, anti-virus protection, user type, and enforces post admission access controls using integrated networking infrastructure (routers, switches).

Access to the network is channeled through a virtual private network (VPN) to the State's existing infrastructure. Since VPN can be used to connect un-managed devices or public

devices, the existing NAC solution provides an additional layer of security, and is used for enforcing additional remote endpoint compliance policies to facilitate that the devices connecting to the network address defined security requirements.

3.5.23 Least-Privileged Role-Based Security Scheme

3.5 SECURITY STANDARDS

3.5.23 The implementation vendor shall ensure that a least-privileged role-based security scheme that is compatible and interoperable with the established DWSS security scheme is implemented as part of the system. In the event a new model is necessary, that model must be backwards compatible and interoperable with the established DWSS security model. Deviation from this guideline is not permitted.

The NCSEAS solution will grant user access to system functions based on Role-based access control (RBAC) according to the principle of least privilege. The RBAC model will be compatible and interoperable with the existing DWSS security scheme wherein individuals are granted required access based on their organizational role. The principle of least privilege facilitates that users (or processes acting on behalf of users) are provided access privileges required to accomplish assigned tasks in accordance with the organization's missions and business functions.

Deloitte will work closely with the State to create a security role matrix which will outline the access rights based on the business requirements of personnel in each role. We will collaborate with DWSS to define the path forward for this security role matrix to be compatible and interoperable with the existing DWSS security model, where possible.

The DWSS's Novell Identity and Access Management solution will help provision coarse-grained access. This type of access control provides high-level authorization for individuals based upon their job roles (e.g., case worker). Application programming has been used to provide fine-grained access to users. Individual screens will be programmed to provide access to underlying information, and users are granted authorizations to access particular screens within the application. The State is responsible for configuring user provisioning of user accounts and associated roles and groups.

3.5.24 Integrated with Existing DWSS Security Model

3.5 SECURITY STANDARDS

3.5.24 The implementation vendor shall ensure that the user interface for administration of the system's security scheme must be integrated with the existing DWSS security model. Deviation from this guideline is not permitted.

Deloitte has extensive knowledge about DWSS's existing access identity and access management solution which is built on Novell's NetIQ stack. The CA CSE user interface for administration of the system's security scheme will be retrofitted to support integration with the Agency's existing security infrastructure (i.e., Novell Access Manager and Novell eDirectory) for authentication, coarse grained authorization, self-service, user registration, session management, single sign-on (SSO), and NetIQ Self Service Password Reset (SSPR). This allows DWSS to restrict access to sensitive information within the application. DWSS will be responsible for configuring the Novell Access Manager and Novell eDirectory as required for the NCSEAS solution. The NCSEAS solution will use Google authenticator services for Multi-Factor Authentication (MFA). Deloitte will support DWSS to integrate Google authenticator and the NCSEAS solution with their existing security infrastructure.

3.6 Requirements Matrix

3.6.1 Platform Requirements

3.6 REQUIREMENTS MATRIX	
Refer to Attachment N (Requirements Matrix) and Attachment O (Implementation Vendor Requirements).	
Vendor must:	
3.6.1	Present the platform requirements for efficient operation of the system.

We carefully reviewed the functional and quality attribute requirements of the system. Our proposal is based on the existing architecture of the CA CSE system but is also enhanced to capitalize on the DWSS technology environment and advances in Commercial Off-The-Shelf COTS products where it provides efficient operation of the system. Using COTS products to perform functions such as correspondence generation and content management, allows componentizing the architecture so that DWSS will have the option to replace them easily as products evolve and newer products are introduced that are available in the marketplace. Section 3.2 presents further details on the proposed platform.

3.6.2 Review of Requirements Matrix

3.6 REQUIREMENTS MATRIX	
3.6.2	Review the requirements matrix carefully to insure that the proposed system design addresses all of the requirements.

We confirm that each requirement included in the RFP Attachment L - Requirements Matrix is included in Section X: Requirements Matrix and is coded as instructed.

3.6.3 Data Element/Function to Project Plan

3.6 REQUIREMENTS MATRIX	
3.6.3	Tie each data element/function to the vendor's project plan by task number.

We have added steps in the in the Project Plan to meet the requirements listed in Attachment L – Requirements Matrix that is included in Section X: Requirements Matrix. These steps follow through the development lifecycle and are tied to the following steps in the project plan.

Activity	*Project Plan WBS*
Requirements Validation Sessions	***2.3.1 & 3.5.1***
Joint Application Design (Functional)	***3.6.2***
Joint Application Design (Technical)	***3.6.2.8***
Functional Design	***3.6.3***
Technical Design	***3.6.4***
Detailed Requirements	***3.6.5***
Develop / Modify / Configure and Unit Test Solution Components	***4.4.1***
Develop New Data Conversion Test Cases	***4.4.11.1***
Execute System Testing Scenarios	***4.7.4.3***
Begin Gathering Federal Certification Documentation	***5.25.31.1***

Table 3.6 -1. Mapping of Activities to Project Plan WBS.

Additional steps may be added to the work plan during the project that would further define the activities needed to satisfy the Attachment L - Requirements Matrix that is included in Section X: Requirements Matrix.

3.6.4 Responding to Requirements

3.6 REQUIREMENTS MATRIX
3.6.4 Respond to all of the requirements by properly coding and indicating how the requirement is satisfied. The proposed costs and project plan must reflect the effort needed to satisfy the requirements.

We confirm that each requirement included in the requirements matrix is coded to indicate whether and how our NCSEAS solution satisfies each requirement. Further, we confirm that the proposed costs and the Preliminary Project Plan reflect the effort needed to satisfy the requirements. For each system requirement, we have acknowledged that NCSEAS will meet the requirement. Further, we have provided a coding of 'S' for standard functionality that CA CSE meets out of the box and 'M' for modification required for functionality in CA CSE that needs to be modified to meet the DWSS requirements mentioned in the RFP. As an example, the table below lists the RFP requirement for IV-A Referrals and confirms that we meet the requirement and explains that it needs modification to be able to meet the RFP requirements.

Requirement #	Requirement	Meets Requirement?	Comments
2.1.26	***IV-A Referrals***	***Yes***	***M – Modification Required .The baseline CA CSE system supports the servicing of referrals from an integrated IV-A solution, including if necessary the immediate establishment of a child support case for those IV-A cases approved for payment or linkage to an existing case(s). It also accommodates the update of IV-A case information over time as well as the management of Unreimbursed Assistance (URA) and reimbursable TANF balances at the case and participant levels. Modification is required for Nevada specific aid codes.***

Table 3.6- 2. Sample Requirements Matrix

3.6.5 Identifying System Requirements

3.6 REQUIREMENTS MATRIX

3.6.5 Identify, for each of the system requirements identified in the requirements matrix, whether it is:

Condition	Description
S – Standard Function	The proposed system fully satisfies the requirement as stated. The vendor must explain how the requirement is satisfied by the system.
W – Workflow or System Configuration Required	Current functionality of the proposed system exists in the system and can be modified by a system administrator to meet this requirement.
M – Modification Required	The proposed system requires a modification to existing functionality to meet this requirement which requires a source code modification. The system will be modified to satisfy the requirements as stated or in a different format. The vendor must explain the modifications and include the cost of all modifications above and beyond the base cost in Attachment J, Project Costs.
F – Planned for Future Release	This functionality is planned for a future release. The vendor must explain how the requirement will be satisfied by the system and when the release will be available.
C – Custom Design and Development	The proposed system requires new functionality to meet this requirement which requires a source code addition. The vendor must explain the feature and its value, and include any cost above and beyond the base cost in Attachment J, Project Costs.
N – Cannot Meet Requirement	The proposed system will not satisfy the requirement. The vendor must explain why the requirement cannot be satisfied.
O – Other Software	If the requirement is to be satisfied through the use of a separate software package(s), vendors must identify those package(s) and describe how the functionality is integrated into the base system.

We confirm that each requirement included in requirements matrix of Attachment L is coded to indicate whether and how our NCSEAS solution satisfies each requirement.

3.6.6 Firm Fixed Price for Each Requirement

3.6 REQUIREMENTS MATRIX

3.6.6 Identify whether each requirement is in the firm fixed price included within the cost proposal.

We confirm that each requirement included in Attachment L – Requirements Matrix that is included in Section X: Requirements Matrix is in the firm fixed price included with the cost proposal. As required in the RFP, we have responded to each of the requirements provided in Section X: Requirements Matrix.

3.6.7 Meeting Each Requirement

3.6 REQUIREMENTS MATRIX

3.6.7 Describe how the proposed system meets the requirements specified within this RFP.

NCSEAS system meets functional and technical requirements specified in the RFP. We acknowledge and agree that our NCSEAS system is a transfer of the CA CSE system. We will collaborate with DWSS to acquire the system artifacts and source code from the State of California. We have analyzed NCSEAS Attachment L requirements against the CA CSE solution and the detailed analysis are included in Section V: 3.4 Functional Requirements and Section V: 3.3 Technical Requirement. Based on our teams many years of experience maintaining and enhancing the California system, we use this fit gap analysis as the basis for the new NCSEAS system as prescribed in the feasibility study and approved by the federal Office of Child Support Enforcement (OCSE).

While this forms the foundation for NCSEAS, we recognize that the CA CSE system requires modification and customization to meet the functional and technical requirements to make it a fully functioning system for DWSS. We have identified the level of configuration and customization required from the functional and technical perspective and listed it in the completed Attachment L.

We are proposing infrastructure and software that aligns with DWSS standards. Our computing platform leverages existing DWSS software and hardware assets. Our detailed responses to the computing platform requirements are described in Section V: 3.2 Computing Platform of our proposal.

We reviewed the functional requirements in detail and our response to Section V: 3.4 Functional Requirements describes our approach to deliver out-of-the-box standard or customized functionality to meet the requirements.

We are proposing a system that is consistent with the DWSS technical direction. We propose development and run-time tools that are used by the CA CSE system. In areas where we recognize benefits for DWSS, we have recommended tools that are currently being used by the agency. For example, we propose using the IBM ODM, Thunderhead, and ESB capabilities that DWSS possesses. Our responses to the technical requirements are described in Section V: 3.3 Technical Requirements.

You are modernizing your child support system in response to expanding needs and to address limitations within the current NOMADS system. Our project approach is lean and efficient to maximize DWSS's budget, but also realistic given our experience replacing CSE systems. Deloitte brings a collaborative, structured, comprehensive, and transparent approach to managing the project.

Hands-on CA CSE experience

The Deloitte team has the direct experience to know where the challenges exist in transferring the CA CSE solution — our team members developed it, we currently maintain it and we are the only vendor who is transferring it to another state. Through this experience maintaining the CA CSE solution in California and Oregon, our team knows where the complexities lie and how to effectively address them to achieve your transformation objectives. This experience and insight enables us to accurately scope and plan for the NCSEAS project. Our primary project goal is to give DWSS complete visibility into all activities at any given time and track the project against the plan.

QUOTE

"Deloitte is the example of Nelson Boswell's quote 'Always give people more than what they expect to get.' Deloitte develops positive relationships with their clients, provides the right expertise to solve business problems and is always focused on achieving their customer's goals."

Catherine Lanzaro
Branch Chief, IT Applications California Department of Child Support Services

Leveraging Oregon's CA CSE transfer knowledge and experience

Our years of work in Oregon, gathering best practices and lessons learned, will significantly improve our efficiency with DWSS. A few examples are: critical design documents missing from the CA CSE solution that we have now developed, knowledge of the functionality to achieve federal certifications, and getting the performance measures right to maximize federal incentive funds. In addition, our proposed NCSEAS Project Manager, Kent Wheeler, has served as the project manager for the CA CSE transfer to Oregon.

Using our Nevada knowledge

From our current and prior work with DWSS, our team has intimate knowledge of the technical architecture, the complexity in the batch system, the financial distribution subsystem, and how to integrate the Nevada enterprise standards into the new NCSEAS system. This knowledge will enable us to plan the project right the first time, without an extensive discovery period. As with all of our projects with DWSS, success means getting it right the first time, on-budget, and on-time. All child support system transformations come with a high level of complexity — and that complexity correlates to a significant risk of failure. Projects fail for many reasons, but the most common are breakdowns in project management and collaboration. Our experience with Nevada, your people, and your systems virtually eliminates this risk. No other vendor has the successful experience of implementing systems in DWSS than Deloitte.

Guidance from our national child support practice

Experience managing other HHS projects of similar scope is a critical success factor, as is specific child support enforcement experience. Deloitte has successfully built CSE solutions in states all over the country, which gives us the critical success factors, knowledge, and track record we will bring to DWSS. There are very few challenges we haven't already encountered and solved across our projects on Oregon, California, Florida, Indiana, Massachusetts, and Texas. The cornerstone of our success is established with our CSE knowledgeable staff and tools as accelerators we bring to the project.

Deloitte brings to Nevada a deep bench of qualified professionals that understand the complexity of the business rules in the child support program. This track record reflects:

- ***Success record with DWSS for more than seven years***
- ***Tools and best practices learned from similar CSE projects***
- ***Deep bench of child support professionals who know the California system***
- ***Relevant transfer experience of California to Oregon***
- ***Successfully manage change and training***
- ***HHS industry perspectives on design considerations, human resource strategies, and technology innovations***

As with every project, we stay focused every day on earning your trust, with open communication and close collaboration to achieve success.

In this section, you will find a detailed description of Deloitte's approach to managing your scope of work. This approach is based on delivering large-scale IT transformations for state and federal government agencies and the commercial sector.

4. SCOPE OF WORK

The scope of work is broken down into tasks, activities and deliverables. The tasks and activities within this section are not necessarily listed in the order that they shall be completed. Vendors shall reflect within their proposal and preliminary project plan their recommended approach to scheduling and accomplishing all tasks and activities identified within this RFP.

All tasks performed by the awarded vendor may be reviewed by the QA monitor as well as State staff.

The modernization of the child support portions of the legacy NOMADS application into the new NCSEAS solution is a critical project for which CSEP has expressed high expectations. We share your vision for a modernized NCSEAS, and our delivery of the Scope of Work tasks, activities and deliverables provides the stepwise path for a successful project.

SECTION HIGHLIGHTS

- ***Over 45 years of experience with public sector clients***
- ***Over 35 years of CSE system implementation experience***
- ***Extensive knowledge of the California transfer solution***
- ***Successfully delivered similar size and scope systems in DWSS***

Our approach to this Scope of Work is driven by innovative ideas, leading practices, and proven techniques we have gained through our successful delivery of similar large legacy modernization projects, across public sector human services agencies and specifically for the child support enforcement program. We have also applied lessons learned from our work with you on prior projects within the State of Nevada and we are eager to demonstrate how we incorporate these elements into our plan for successful delivery.

The foundation of our approach to the Scope of Work is our Enterprise Value Delivery (EVD) methodology. EVD provides a rigorous, process-driven framework for system modernization project delivery that combines industry-standard practices, such as the Project Management Institute's Project Management Body of Knowledge (PMBOK) and the Software Engineering Institute's Capability Maturity Model Integration (CMMI). We provide templates, tools, artifacts, and the collective experience of our teams across a multitude of large, successful, high-profile HHS and child support engagements. Many of the deliverables and plans required for the Scope of Work have corresponding artifacts and templates already present within our EVD toolkit. We can leverage these artifacts to meet the specific requirements and deliverable standards that the State has established. We have successfully leveraged our EVD methodology for prior projects with DWSS and look forward to bringing these quality-driven processes to our delivery of NCSEAS. For a more detailed description of our proposed EVD methodology, please reference Section VII: 5.7 Project Management.

Unmatched Experience with Your Chosen Solution

Beyond the rigor of our project methodology, the other element of our approach that stands out is the unrivaled level of experience we bring with your chosen transfer solution, the California Child Support Enforcement (CSE) system. Deloitte is currently the vendor responsible for maintaining and enhancing the system for the State of California, and have been doing so for the last six years. Many of the resources that built the original CA CSE solution now work for Deloitte, and we can leverage their collective experience for the benefit of NCSEAS project. In particular, our experience is key to understanding the current technology standards and practices for the California solution, and the various artifacts that the State of Nevada will need to request from California to begin the transfer process.

EXPERIENCE TRANSFERRING CALIFORNIA

Please reference these callout boxes throughout the Scope of Work section where we have identified specific opportunities for our team to leverage our experience transferring the CA CSE solution for the benefit of the NCSEAS project.

Combined with our experience currently maintaining the California system, we are also engaged on a project similar to NCSEAS transferring the California solution for the State of Oregon. The Oregon Child Support Enforcement Automated System (CSEAS 2.0) project began in September, 2015. Many of the steps to be taken on the path to successful delivery of the NCSEAS solution have recently been completed by our team in Oregon. As such, we can apply lessons-learned to our approach for the NCSEAS Scope of Work, such as:

- ***Applying knowledge of the current CA CSE Fit/Gap to our requirements validation session planning.***
- ***Using iterative principles during the design and development phases of the Waterfall SDLC to better align to more complex CSE use cases to be implemented.***
- ***Use of a detailed Proof-of-Concept (POC) installation of the California system during requirements and design sessions to highlight the solution fit to Nevada requirements.***
- ***Establish an interface coordination team from the outset to establish proactive communications with the NCSEAS interface partners.***
- ***While adhering to the transfer paradigm, it is still possible to innovate and adopt newer trends, and the team should be prepared to consider these opportunities.***

No other vendor has our detailed knowledge and insight into the current CA CSE system or better understands how to match those capabilities to your NCSEAS requirements. Because of our experience with maintaining and also transferring the California system, we believe we can provide an even better performing, more stable solution for NCSEAS.

Deloitte provides the following responses to RFP Section 4. As allowed by the Q&A released by procurement, our response is provided within the 190 total page limit, excluding the RFP text provided by DWSS which is included here for ease of your review.

4.1 Vendor Response to Scope of Work

4.1.1 Meeting Task Requirements

4.1	VENDOR RESPONSE TO SCOPE OF WORK
4.1.1	Within the proposal, vendors shall provide information regarding their approach to meeting the requirements described within Sections 4.4 through 4.39.

Deloitte has considerable experience in successfully completing tasks, activities, and deliverables for child support enforcement system projects across multiple states, as well as the successful completion of numerous systems integration projects for the State of Nevada. This experience uniquely qualifies Deloitte as a provider of these services. Our goal is to deliver, on time and on budget, an NCSEAS solution that meets the unique objectives and attributes of the DWSS child support constituents.

SECTION HIGHLIGHTS

- ***Extensive child support experience in delivering tasks, activities, and deliverables***
- ***A dedication to create a system that meets Nevada's child support goals***
- ***A detailed approach to meeting requirements***

The scope of work to be completed by our team includes each of the tasks, activities, and deliverables that are logically delivered throughout the System Development Lifecycle (SDLC). The SDLC is leveraged for gathering system requirements, designing, building, testing, deploying, maintaining and operating a new statewide child support system for Nevada that advances the objectives of the child support enforcement program. In order to maintain quality, our team works closely with the DWSS project leadership through the facilitation of Joint Requirements Planning (JRP) and Joint Application Design (JAD) sessions, and through deliverable review and approval. Our project management approach is consistent with the project planning structures developed by the Project Management Office (PMO), and aligns with the standards established by the Project Management Body of Knowledge (PMBOK).

The scope of work provided by our team along with the deliverable and service descriptions that correspond with the work to be delivered as part of this project are outlined in Sections VI: 4.4 through 4.39. Each of the deliverables and activities is produced in accordance with the expectations set forth in the RFP.

4.1.2 Subcontractors Task Work

4.1	VENDOR RESPONSE TO SCOPE OF WORK
4.1.2	If subcontractors shall be used for any of the tasks, vendors shall indicate what tasks and the percentage of time subcontractor(s) shall spend on those tasks.

Deloitte is not utilizing subcontractors for this project. There are staffing requirements for support or incidental services which occur from time to time in Deloitte's client engagements. To address these requirements, Deloitte's project teams obtain staff augmentation services from Contingent Workforce Services (CWS), a component of our Deloitte Human Resource (HR) model specializing in procurement. CWS adopts a strategic sourcing model and runs a centralized procurement process.

CWS has access to a wide range of Tier 1 vendors to support or incidental resources who have experience on CA CSE. Through this centralized sourcing, staffing, and payment process managed by CWS, Deloitte is able to address our clients' requirements.

Additionally, the procurement services provided by CWS can also help Deloitte reduce legal risks in engagements, lowering project risks for our clients.

When engaged, contingent resources are directly supervised by the Deloitte Project Manager in terms of setting work priorities on a daily basis. They are integrated members of our team and are subject to the same work plans, activity tracking, and quality expectations as our Deloitte resources.

4.1.3 Task Page Limit

4.1	VENDOR RESPONSE TO SCOPE OF WORK
4.1.3	Vendor's response shall be limited to no more than five (5) pages per task not including appendices, samples and/or exhibits.

As noted in our introduction, the overall Scope of Work section has been contained within the total 190 page limit, excluding space for RFP requirement text.

4.2 Overview of Implementation Contractor's Services

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES
The following section defines the Implementation Contractor's specific scope of responsibility and work within each of the identified project activities.

4.2.1 Services In Support of NCSEAS Project

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES
4.2.1 The Implementation Contractor will provide the following services in support of the NCSEAS Project:
4.2.1.1 Conduct Joint Application Design (JAD) sessions to document and elaborate all functional and technical requirements. JAD sessions will be held in Carson City and attended by all stakeholders including State and County Program staff in person or via teleconference.
4.2.1.2 Develop detailed functional and technical design documents.
4.2.1.3 Recommend hardware and software components necessary to support the system's architecture, including environments necessary for development, testing, training, production, and disaster recovery.
4.2.1.4 Acquire, install, and configure the hardware and software needed for the development of the NCSEAS.
4.2.1.5 Support the installation and configuration of hardware and software necessary to run the NCSEAS Application in each of the required environments.
4.2.1.6 Develop the NCSEAS application software as designed.
4.2.1.7 Test and support the testing of all aspects of the system.
4.2.1.8 Develop all required interfaces between the NCSEAS and other systems.
4.2.1.9 Convert applicable data from the legacy NOMADS.
4.2.1.10 Develop functional and technical system documentation.
4.2.1.11 Develop and deliver functional and technical training.
4.2.1.12 Implement the NCSEAS in a pilot and then rollout the application to all other users in a logically phased implementation.
4.2.1.13 Maintain initial system functional and technical operations.
4.2.1.14 Provide on-site support of user staff in offices using the NCSEAS.
4.2.1.15 Provide post-implementation system maintenance support and warranty of the NCSEAS software for twenty-four (24) months following full statewide implementation.
4.2.1.16 Provide support for acquisition of required federal Office of Child Support Enforcement (OCSE) system certification for the NCSEAS.
4.2.1.17 Transition the responsibility for maintaining and operating the NCSEAS to the Program.
4.2.1.18 Provide design, development, and implementation project management, reporting, and communication to enable the project's success.

There is no question that enterprise system implementations such as NCSEAS can be complex, high profile, and important to many stakeholders. We can help you make the most of this effort leading to the successful implementation of a new NCSEAS solution. We have the right team to help you make the transferred system your own and the experience and focus to help you achieve your goals of certification, improved performance, and better customer service. We acknowledge the expectations of the Implementation vendor outlined

in the RFP, as highlighted in the following table. We describe our approach in more detail in the subsequent Scope of Work sections, highlighting why we are the best choice to assist DWSS with this replacement project.

Area	*How Our Approach Meets Your Expectations*
Conduct Requirements Elaboration and JAD Sessions	***We conduct Requirements Elaboration Joint Requirements Planning (JRP) sessions that document and elaborate functional and technical requirements. These meetings are held with you collaboratively involving Deloitte personnel, DWSS SMEs and stakeholders. JAD sessions are held in Carson City and are open to designated stakeholders, including State and County Program staff attending in person or via teleconference. We describe our solution for requirements elaboration via JRP and JAD sessions in Section VI: 4.27.***
Develop Detailed Functional and Technical Design Documents	***Based on our enterprise system implementation experience, information we gather in JAD sessions, our ongoing experience maintaining and operating the CA CSE solution, and our experience transferring the California system for Oregon, we develop detailed functional and technical design documents. We describe our solution for creation of these deliverables in Sections VI: 4.13, 4.27 and 4.29.***
Recommend hardware and software components	***Given our experience in Oregon and California we recommend hardware and software components that align to the needs of the solution as well as your specific needs for CSE case volumes. We describe the solution we provide for recommending hardware and software components in Sections VI: 4.5, 4.7, 4.8, 4.10, 4.11, 4.19, 4.26, 4.28, 4.29 and 4.30.***
Acquire, install and configure the hardware and software	***Deloitte works with DWSS to acquire, install, and configure hardware and software, similar to efforts we have successfully executed with DWSS on prior projects. We describe the solution we provide for configuring hardware and software in Sections VI: 4.5, 4.7, 4.8, 4.10, 4.11, 4.19, 4.26, 4.28, 4.29 and 4.30.***
Support the installation and configuration of hardware and software	***We support the installation and configuration of hardware and software for NCSEAS. We describe the solution we provide for this in Sections VI: 4.5, 4.7, 4.8, 4.10, 4.11, 4.19, 4.26, 4.28, 4.29 and 4.30.***
Develop the NCSEAS application software as Designed	***Based on the requirements and Fit Gap analysis (refer to Section 3 – System Requirements), we work with you to confirm, document, and develop the application software for the NCSEAS based upon the capabilities of the CA CSE transfer solution. We describe the solution we provide for application development and configuration in Section VI: 4.28.***
Execute testing and support user acceptance testing	***Once the NCSEAS application software has been developed, we test and support the thorough, end-to-end testing of the application. We describe the solution we provide for testing in Sections VI: 4.19 and 4.30.***
Develop required interfaces	***We develop the required interfaces between NCSEAS and other agencies and systems based upon the confirmed requirements. We describe the solution we provide for interface development in Sections VI: 4.27 and 4.28.***
Covert applicable data from NOMADS legacy database	***We write automated conversion scripts to convert data from NOMADS to NCSEAS and we support your team in performing manual data conversion as required. We describe the solution we provide for data conversion in Section VI: 4.29.***
Develop functional and technical system documentation	***We develop functional and technical system documentation. We describe the solution we provide for functional and system documentation, including examples of some artifacts, in Sections VI: 4.13, 4.20, 4.23, 4.24 and 4.27.***
Develop and deliver functional and technical training	***We provide functional and technical training. We describe the details of our training approach, as well as the solution we provide for training, in Sections VI: 4.20, 4.21, and 4.31.***
Implement the NCSEAS Pilot	***We implement the new NCSEAS using a phased implementation approach including an NCSEAS pilot. We describe the pilot and our phased implementation approach in Section VI: 4.32.***

Area	*How Our Approach Meets Your Expectations*
Maintain and support initial system operations	***We support the initial systems operations during the phased implementation as well as through the required warranty and post-implementation maintenance and operations period. We describe our approach to system implementation and the warranty period in Sections VI: 4.32 and 4.33.***
Provide on-site support	***We provide on-site support during a phased implementation effort. We describe the processes and deliverables we provide for on-site support in Section VI: 4.32.***
Provide post-implementation support and warrant the NCSEAS software	***As required we fix defects that do not meet the NCSEAS functional and technical requirements and specifications for 24 months following the complete state-wide implementation of the solution. The details of this post-implementation system maintenance support and warranty period are described in Section VI: 4.25.***
Support acquisition of System Certification	***We have supported successful Federal System Certifications for the Pennsylvania and Florida CSE solutions, and members of our team have experience assisting with the certification of systems for several other states. Our team also includes a former Commissioner of the Federal Office of Child Support Enforcement (OCSE) with over 30 years of CSE experience to facilitate the certification process. We describe our approach and experience in delivering Federal System Certification in Section VI: 4.34.***
Transition	***By working collaboratively with your team through the lifecycle of the project we provide a baseline for the transition of maintenance and operation of NCSEAS at the conclusion of the 24-month post-implementation support period. At the end of the project, we work to transition these maintenance and operations activities to your team. We describe our approach to transitioning maintenance support of NCSEAS to your staff in Section VI: 4.35.***
Provide project management reporting, work plan tracking, and communication	***We provide project management, reporting and communication activities throughout the lifecycle of the project. We describe the solution for these activities in Sections VI: 4.3, 4.4, 4.5, and 4.6.***

Table 6- 1. Meeting Your Expectations.

4.2.2 Design, Build, Test, and Deploy a New Statewide Child Support System

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES

4.2.2 The goal of this RFP is to select a vendor who can design, build/develop, test, and deploy a new statewide child support system that will significantly advance the work of Nevada's CSEP and transition the care of this new system to the Program in a way that will allow the system to support the Program for years to come. The starting point for this project is the existing California system, but the project is not meant to simply recreate these components in the Nevada data center. Rather, the code of the new system needs to be constructed with the unique goals and attributes of the Nevada child support constituents and stakeholders in mind. Accordingly, the project to develop and implement the NCSEAS must be a cooperative effort between the Implementation Contractor, the Program, and the staff contracted to assist the Program in this endeavor.

The CA CSE system is the base system for DWSS, but collaboration must occur between DWSS and our team to determine whether the base system meets the unique goals and attributes of DWSS. We review the results of our fit gap analysis, move into detailed design to account for identified differences and gaps, and then reflect modifications into the detailed design such that the final NCSEAS meets the specific needs of DWSS.

Utilizing our extensive experience, proven project management approach, and established Enterprise Value Delivery (EVD) methodology, we work with DWSS and key stakeholders to create a collaborative environment that results in the success of the NCSEAS project.

4.2.3 Develop and Attain Approval for Series of Deliverables

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES

4.2.3 Accordingly, the Implementation Contractor will be required to develop and attain approval for a series of deliverables that will ensure the project is meeting Program expectations for the new system. The required services and products for the Implementation Contractor to provide include critical system planning and development components.

Using our EVD methodology, Deloitte is dedicated to providing detailed deliverables that meet the DWSS requirements and align with its vision.

We develop and submit deliverables for approval throughout the project phases. To most efficiently achieve this approval, we draw on existing Deliverable Expectation Documents (DED) from our prior work with DWSS, our EVD artifact set, and similar DEDs used on our Oregon project, and work with DWSS to tailor them and obtain concurrence on the required structure and content of deliverables in advance of developing them. A DED provides a detailed outline of the structure of the deliverable, acceptance criteria, list of stakeholder reviewers, along with sample content. Creating, reviewing and approving a DED helps obtain consensus on the structure of a deliverable before it is submitted for formal review. These activities are included in the work plan we submit to DWSS.

The use of established and proven EVD methodology processes for the creation of project deliverables results in less time being spent on creating those deliverables and more time on the actual requirements, design, functionality, and execution of the system. In addition, standard templates offer consistency across project phases, which reduces the risk of overlooked or undocumented information and results in deliverables that are ready for formal submission and approval.

Once deliverables are created, our team follows the established deliverable submission and review process. A walkthrough of the deliverable is conducted where our team provides an overview of the deliverable. We then submit the deliverable to you for review and approval. If your review results in any comments, responses to those comments are agreed upon and the necessary changes are made to the deliverable documents. Please reference Section VI: 4.38 Deliverable Submission and Review Process for a more detailed description of our proposed deliverable submission and review process.

4.2.4 Change Control Procedure

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES

4.2.4 The change control procedure established by the PMO contractor must be used to address requested changes in design and implementation. Design, development, and testing staff must initiate Change Control Requests when encountering inconsistencies or opportunities for refinement in the application. The Project Control Manager, together with assigned management staff, will review and make a determination on the change control requests. This procedure will provide a clearance process for resolving the inconsistencies or incorporating refinements to the systems. The change control process must document approved changes to the functional and technical designs, test plans, training plans, and other applicable deliverables.

We follow the change control procedures established by the PMO contractor and/or DWSS; we assume the process is similar to that used on our existing and prior projects with DWSS. Change requests are recorded within the change request log, maintained in a tool such as Deloitte's Project Management Center (PMC). PMC is accessible to Deloitte, the CSE Program, and other required contractors. The step of recording the change request is performed by a project team lead who has reviewed the request with the appropriate

project team members and the CSE program. Once the change is created in the log, our team further performs a preliminary impact analysis.

Once change requests have been identified, validated, and recorded, they are brought to the change control board (CCB) for review. Deloitte, the PMO contractor, and DWSS collaborate in reviewing and approving or rejecting the change. The CCB makes a final decision on the vast majority of change requests, escalating to the project steering committee only in cases that are likely to have a significant impact on the scope and budget.

If a change is approved, it is prioritized by the CCB. The team must consider other accepted change requests being implemented and the effect of implementing multiple change requests simultaneously. After a consensus is reached on how to proceed, approved change requests are assigned a priority and sequenced into the development timeline. The Deloitte PMO and the PMO contractor are responsible for communicating the decision to the project team, interested stakeholders, and those responsible for implementing the change.

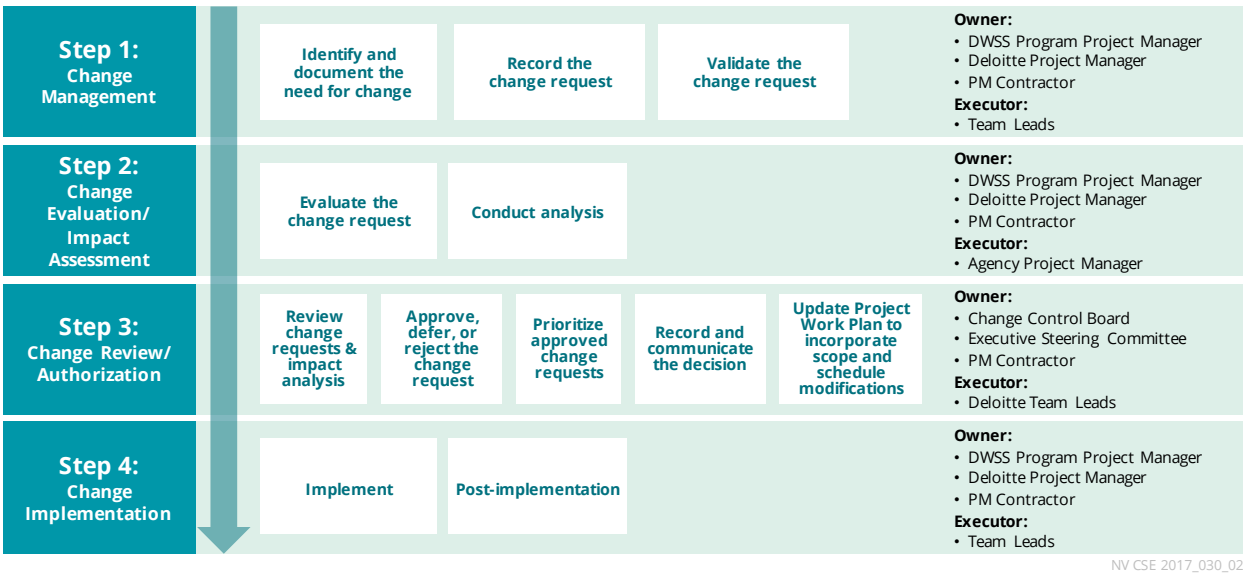


Figure 4-1. An overview of the anticipated change control process.

PMC provides a consolidated view of the status of project change requests through real-time dashboards, automated alerts, and detailed reports. PMC allows team members to capture necessary information required to initiate the change request process. It enforces appropriate rigor in the data collection process by capturing the information required to make a decision on the change, and it maintains consistency in the process. Its workflow capabilities can be used to route change requests to appropriate team members, speeding the process while maintaining the necessary documentation. The change request process, aided by the PMC tool, provides the framework to manage change requests with precision. This approach enhances transparency, enables effective decision making and scope management, controls costs, and delivers business value to the Nevada CSE program.

4.2.5 Review of Deliverables

4.2 OVERVIEW OF IMPLEMENTATION CONTRACTOR'S SERVICES

4.2.5 The Program's Project Management Team will review deliverables and communicate desired changes to the Implementation Contractor in accordance with a Deliverable Approval Plan developed by the PMO contractor. The Implementation Contractor will modify the deliverables as appropriate. The Implementation Contractor may proceed on subsequent tasks while awaiting the results of the review. However, the Implementation Contractor will factor the changes into the subsequent tasks as soon as project staff agree on the changes. The Implementation Contractor will submit deliverables using the Microsoft Office Suite, including Word, Project, Excel, Visio, Power Point, etc.

Our deliverable review process thoroughly documents the expectations of DWSS with respect to multiple aspects of the system, including functionality, design, and technical infrastructure.

At the conclusion of the review period, comments from DWSS stakeholder reviewers are consolidated and provided to Deloitte in a comment response document. An example of this document is shown in the following figure:

Nevada Child Support Enforcement Automated System Project (NCSEAS Project)
Requirements – 1.0.0 – July 20, 2018

	Reviewer	Section/Page #	Comment	Application Team Proposed Response
1	Bridget R.	System Requirements, Section 2.2, Page 5	Last bullet reads "Prove the ability…" and should be "Provide the ability…"	The System Requirement deliverable will be updated accordingly.
2	Bridget R.	System Process Models, Section 2.2.2, Page 13	Will defendant members have this ability also?	Yes, both plaintiff and defendant members will have access to this functionality.
3	Andrew L.	Use Case, Section 2.2, Page 5	Last bullet reads "Prove the ability…" and should be "Provide the ability…"	The Use Case will be updated accordingly.
4	Stephanie M.	System Process Models, Section 3.2.2, Page 16	Is it possible to expand this functionality to both plaintiff and defendant members? It may be beneficial to both.	The requirements currently indicate that the functionality shall only be accessible by defendant members. This will be discussed with the Agency project management to determine whether or not this modification should be considered.
5	Stephanie M.	Use Case, Section 3.5, Page 10	Can we make sure that when viewing this information, we also include the case ID?	The design of how this information will appear to users will be discussed more in the design phase of the project. This comment will be taken into consideration at that time.

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Figure 4-2. Example draft deliverable comment response template.

While awaiting approval on submitted deliverables, our team continues to work on tasks to support the next phase of the project so as not to impact established timelines. If major comments are received on a deliverable submission, our team reviews them and conducts a resolution meeting to discuss and agree upon the response to the received comments. Required modifications are made to the deliverables, which are then resubmitted to DWSS for approval. Note that minor or cosmetic comments may be addressed within a subsequent version of the same deliverable or a deliverable submission as part of a follow-on task; minor comments should not impact the final approval of the deliverable with respect to proceeding with the next task/activity to remain on schedule.

Our team acknowledges the formal deliverable review expectations set in place by DWSS for this system replacement project and will follow the deliverable review process outlined in the NCSEAS Deliverable Approval Plan. Please reference Section VI: 4.38 Deliverable Submission and Review Process for more information about the deliverable submission and review process.

4.3 Project Initiation and Management

4.3.1 Objective

4.3 PROJECT INITIATION AND MANAGEMENT

4.3.1 Objective

The project initiation and management of the project will be ongoing for the duration of the contract.

For the NCSEAS project, it is critical to have strong project management and collaboration between DWSS and Deloitte, the PM contractor, the QA contractor, and the IV&V contractor for a successful implementation. Each vendor may have a project management methodology that they use to deliver implementation services; it is important that a consistent project management approach be applied appropriately to develop and implement a complex system like NCSEAS.

Successful initiation of the NCSEAS project includes acquiring, transitioning, and setting up the CA CSE system source code and POC, creating applicable project management deliverables, producing a project schedule, developing a knowledge transfer plan, and establishing and readying a project site.

SECTION HIGHLIGHTS

Our approach:

- ***Has been refined over 35 years on hundreds of projects***
- ***Is based on industry leading PMBOK and CMMI/IEEE standards***
- ***Contains market-leading accelerators, tools and templates***
- ***Has been successfully used on 23 large scale integrated eligibility and health insurance exchange implementations***

The following graphic provides an illustrative, high level view of some of the tasks included in the project initiation phase which sets the baseline for ongoing effective project management throughout the project, including the post-implementation maintenance and operations period.

WBS	Name	Resource Name
2.1	**Initiate**	
2.1.1	**Project Kickoff Meeting**	
2.1.1.1	Develop Kickoff Materials	John Doe
2.1.1.2	Schedule Kickoff Meeting	John Doe
2.1.1.3	Kickoff Project	Jane Doe
2.1.2	**Source Code**	
2.1.2.1	Acquire Source Code	Tim Doe
2.1.2.2	Load Source Code	Janelle Doe
2.1.2.3	Install software on client and server workstations	Janelle Doe
2.1.2.4	Define users, security roles, asset types, attributes	Janelle Doe
2.1.2.5	Validate access from client workstations	Janelle Doe
2.1.2.6	Implement backup and recovery procedures	Janelle Doe
2.1.2.7	Refine load procedures	George Doe
2.1.2.8	Validate assets in system	George Doe
2.1.2.9	Train-the-trainer on use of software	George Doe

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Figure 4-3. Example project initiation phase tasks included in the Project Schedule.

4.3.2 Activities

4.3 PROJECT INITIATION AND MANAGEMENT

4.3.2 Activities

4.3.2.1 Initiate and manage the project in accordance with the following limitations and conditions:

A. The Implementation Contractor's project management approach must be consistent with the project planning structures and plans developed by the Project Management Office (PMO) contractor. These structures and plans will align with the principles of the Project Management Body of Knowledge (PMBOK).

B. Each planning document developed by the Implementation Contractor will detail the relevant roles and responsibilities among the Implementation Contractor, Program Management Team, and Quality Assurance (QA) contractor.

C. Each project planning document will first articulate plan goals, objectives, assumptions, and constraints. It will then describe the tasks, subtasks, resources, and schedule necessary to accomplish the plan.

D. Implementation Contractor Project Management Responsibilities include:

1. Prepare for and lead DD&I portion the project kickoff meeting.
2. Participate in weekly project status meetings.
3. Prepare and submit weekly and monthly project status reports.
4. Participate in and follow project risk, issue, and change procedures.
5. Develop the initial DD&I project schedule and provide required weekly updates to tasks in MicroSoft (MS) Project.
6. Propose and support changes to the schedule and project management plan as necessary.
7. Develop and maintain a project management plan for Implementation Contractor activities in conformance with the project management plan developed by the PMO contractor.
8. Follow established communication procedures with input of all principal project participants.
9. Create and distribute agendas and record and distribute the minutes of all applicable meetings.
10. Participate and cooperate in federal audits, reviews, and semi-annual Independent Verification and Validation (IV&V) reviews.

Project Management Approach

Deloitte's project management methodology, which is a component of our overall EVD methodology, integrates project management leading practices from the Project Management Institute (PMI), Capability Maturity Model Integration (CMMI), and our own demonstrated project management methodology honed through numerous CSE and other complex system implementations. Our methodology builds on PMI principles established by the Project Management Body of Knowledge (PMBOK), and provides the project team with a set of tools, templates, and examples to jump-start development of deliverables and facilitate delivery of high-quality work products.

As an element of our Oregon CSEAS 2.0 project we are required to work with both PMO and QA vendors, similar to the NCSEAS requirement. We bring lessons-learned and a demonstrated ability to collaborate with other vendors from our work on that and similar projects.

Deloitte's project management approach is collaborative. Our team works closely with DWSS, the PM contractor, QA contractor, and IV&V contractor to align our processes and procedures with the overall project planning structure and plans in place for NCSEAS, thus providing a project management approach that meets the needs of DWSS and the overall goals of the project.

Roles and Responsibilities of Stakeholders

A CSE system replacement project requires the collaboration of many stakeholders to be successful. In the project kickoff meeting, and in applicable follow-up meetings if required, we discuss and agree upon stakeholder roles and responsibilities with respect to project management activities.

Roles and responsibilities are captured and clearly documented in each of the planning documents created during project initiation. Roles and responsibilities of the stakeholders are also captured at the task level within the project schedule.

The ability to deliver a successful NCSEAS project on the agreed-upon schedule is not only dependent upon the team that we bring to the project but is also dependent on the key participation of DWSS resources. Throughout our Section VI: 4 Scope of Work response we provide descriptions for how the project is delivered by our team. In the following table we provide a set of DWSS roles and responsibilities in support of our overall approach, and these are further defined and documented within our planning documentation and the work plan. Throughout the life cycle of the NCSEAS project, adjustments to the stakeholder roles and responsibilities can be completed subject to the mutual agreement of our project manager and the appropriate DWSS stakeholders.

DWSS Role	*Summary of Responsibilities*
Steering Team	• ***Reviews proposed plans and timetables*** • ***Provides problem resolution if issues cannot be resolved at the project team level*** • ***Provides departmental policy as it relates to the project*** • ***Sets priorities*** • ***Proposes alternative solutions to problems encountered*** • ***Obtains Legislative and Administrative backing*** • ***Provides the right amount and skill set of State Resources*** • ***Provides information and involve external parties in project progress, accomplishments and challenges***
Executive/Project Sponsor	• ***Performs as the executive sponsor for NCSEAS*** • ***Provides final approval of deliverables and invoices that relate to NCSEAS*** • ***All project activities are conducted under the authority of the Executive / Project Sponsor***
Change Control Board	• ***Responsible for reviewing, prioritizing and approving change requests for the project***
DWSS Project Manager	• ***Responsible for coordinating the activities and individuals working on NCSEAS including oversight on a daily basis to the DWSS staff.*** • ***Reports project and work plan status to the Steering Committee*** • ***Reports applicable issues, risks, and action items to the Steering Committee*** • ***Works with the other vendors/organizations involved in NCSEAS to identify and resource requirements and address them***
Business/ Functional Manager and SMEs	• ***The Business/Functional manager works with the functional design team to help answer questions and provide input into the functional design procedures and functional design templates*** • ***Provides input into the functional design deliverables and is involved in the review and maintenance of these documents*** • ***Works with the application team to confirm and elaborate requirements, validate they meet DWSS requirements, and help resolve issues coming out of the functional design*** • ***Works with the application team to clarify requirements associated with submitted Change Requests*** • ***Works with the DWSS Technology Manager and application team to validate SMEs are available and participating during the relevant functional area requirements and design phases*** • ***The SMEs identify and provide necessary input regarding functional requirements of DWSS*** • ***SMEs elicit ideas, feedback, and inputs and communicate the appropriate business processes, policies, and functional requirements with the application***

DWSS Role	*Summary of Responsibilities*
	and technical team while participating in Requirements Elaboration Joint Requirements Planning (JRP) and Joint Application Design (JAD) sessions
DWSS Technology Manager	• ***Provides input and works with the technical design application team when determining the technical design procedures and templates*** • ***Supports maintaining the technical design deliverables*** • ***Assists the application team in resolving any issues stemming from the technical design*** • ***Provides support to the application team when developing technical system operations, including items such as batch jobs*** • ***Supports purchasing and installing necessary system components outlined in the response*** • ***Supports establishing necessary maintenance requirements for continued operations*** • ***Provides Subject Matter Expertise based on existing systems and interfaces*** • ***Participates in Joint Application Development and Joint Technical Design sessions*** • ***Provides input into the technical design of NCSEAS*** • ***Reviews functional design and technical architecture to validate it aligns with the requirements identified by DWSS as well as submitted Change Requests***
User Acceptance Testing Lead	• ***Leads DWSS testing of NCSEAS against the approved requirements and complete DWSS User Acceptance testing*** • ***Works with the application team to provide input into the standards and approach to the various phases of testing, including integration, system, performance, regression and acceptance testing*** • ***Participates in the documentation of testing deliverables and in test case preparation for UAT*** • ***Monitors application defects and tracks the defects in UAT. This includes reporting on the current status, total number, and breakdown by priority.***
Contract Specialist	• ***Coordinates with Procurement to acquire contractual services for NCSEAS*** • ***Manages the contracts and any changes to the contract documents and monitors them to verify compliance*** • ***Prepares contract amendments (if necessary)*** • ***Maintains contract records based on any required retention rules*** • ***Reviews invoices and validates they are in compliance with the contract*** • ***Coordinates with the Project Executive to obtain payment approvals*** • ***Tracks and monitors Project timelines and milestones***
Training Lead	• ***Confirms the necessary training materials are developed based on the functional design*** • ***Validates and finalize DWSS staff have the information, including training modules, user manuals, and other similar documents, needed to fully use the NCSEAS system at the end of the testing phase*** • ***Provides input to any unique training and/or resource requirements*** • ***Works with the application team on knowledge transfer for operations training and technical knowledge***
User Acceptance Test Coordinator	• ***Coordinates the execution of the User Acceptance Test phase*** • ***Develops Acceptance Test Reports***
Information Security Officer	• ***Works with the Application Team to provide security related aspects of NCSEAS*** • ***Reviews technical designs to determine if applicable security requirements are being addressed*** • ***Reviews and confirms provisions the Application Team recommends for system and data security***

DWSS Role	*Summary of Responsibilities*
Database Administrator and Team	• ***Participates and provides input on database related tasks such as data conversion, database design, and data clean-up*** • ***Coordinates planning for and acquiring conversion data*** • ***Reviews and confirms the standards and methodology for database related items outlined in this response and the plans that are developed and submitted throughout the project*** • ***Collaborates on the methodology for developing the entity relationships, data model, and data dictionary*** • ***Answers questions and provides Subject Matter Expertise about the legacy NOMADS database***
Technical Infrastructure Lead and Team	• ***Provides input to the hardware and software component list and help identify any issues, constraints, or requirements on integrating into the existing infrastructure*** • ***Maintains and updates the enterprise architecture plan owned by DWSS*** • ***Assists in the resolution of technical design issues*** • ***Provides input to the technical design*** • ***Provides input for performance requirements and standards*** • ***Helps facilitate the review and steps to procure the recommended system components identified in the hardware and software plan.*** • ***Provides support setting up and installing environments from testing to production*** • ***Provides support in deploying system code through environments*** • ***Provides infrastructure, security, and network support*** • ***Assists in identifying hardware and software components and how they can be integrated into the Enterprise Architecture plan maintained by DWSS***

Table 4-1. Proposed Roles and Responsibilities for DWSS team members.

Project Management Planning Documents

As the Implementation Contractor, our team works with key stakeholders during the kickoff meeting to confirm the overall goals and objectives of the project, including assumptions and constraints that may exist. Upon conclusion of the kickoff meeting, our team documents updates and/or adjustments to the understood and agreed-upon goals, objectives, assumptions, and constraints within the draft project planning documents, as they impact the planned tasks and activities our team is to perform. Tasks, subtasks, resources, and schedules necessary to accomplish the documented plan are also updated if necessary. This provides transparency of what is expected from key stakeholders from a project management perspective, and assists stakeholders in meeting DWSS expectations. The various planning documents to be created and maintained by our team are made available to NCSEAS project stakeholders in a document repository, and can be referred back to throughout the duration of the project.

Project Management Responsibilities

Prepare and Lead the Project Kickoff Meeting

The project kickoff meeting sets the tone for the course of the project. It familiarizes the project stakeholders with key information about the project and overall expectations of the project. Having recently kicked off a similar large scale child support enforcement system replacement project in the State of Oregon with a similar breakout of vendor and State responsibilities, Deloitte leverages that experience when developing kickoff materials. A

successful kickoff reviews and highlights required information needed to initiate the NCSEAS project efficiently. The prepared materials initiate conversations regarding the:

- ***Mission of the NCSEAS project***
- ***Process for reviewing submitted deliverables***
- ***Format and procedures for project status meetings***
- ***Format for project status reports***
- ***Schedule for meetings between DWSS representatives and the Deloitte team to develop the detailed project plan***
- ***Project schedule including phases and sub-phases***
- ***Process for stakeholder communication and reporting***
- ***Identification of high risk or problem areas***
- ***Process for issue resolution, risk mitigation, and action item assignment and follow-up.***

We prepare and lead the project kickoff meeting. Please reference Section VI: 4.39 Project Kick-Off Meeting for more information concerning our proposed project kick-off.

Participate in Weekly Project Status Meetings

We hold weekly status meetings with the NCSEAS program project management team using an agenda developed in collaboration with the PMO contractor. We describe the project status meetings in more detail in Section 4.6 Project Status Reports and Meetings.

Prepare and Submit Weekly and Monthly Project Status Reports

We prepare and submit weekly and monthly project status reports. We describe the contents of these reports in more detail in Section VI: 4.6 Project Status Reports and Meetings.

Participate in and Follow Project Risk, Issue, and Change Procedures

We participate in and follow project risk, issue, and change procedures as defined in collaboration with the PMO contractor and DWSS. Risks and issues are documented in PMC or similar tool. Risks and issues are reviewed in our regular status meetings during which we mutually work to identify mitigation strategies. When needed, we follow change procedures for the project.

Develop the Initial Project Schedule and Provided Updates Weekly

We develop the initial project schedule and provide updates on a weekly basis. We describe this process in more detail in Section VI: 4.5 Project Schedule.

Propose and Support Changes to the Schedule and Project Management Plan

We propose and support necessary changes to the overall project schedule and project management plan in collaboration with the PMO contractor and DWSS. Schedule updates are described in more detail in Section VI: 4.5 Project Schedule. Changes to the project management plan are made on an as needed basis.

Develop and Maintain a Project Management Plan

We develop and maintain a project management plan. As with each NCSEAS deliverable, this starts with the creation of a DED document to reach agreement on the overall structure

and content of this plan. We then complete the plan and submit it using the deliverable acceptance procedures described in Section VI: 4.38 Deliverable Submission and Review and Process.

Follow Established Communication Procedures with Input

Deloitte follows the procedures documented in the project management plan for communication with stakeholders.

Create and Distribute Agendas and Meeting Minutes

We create and distribute agendas and meeting minutes for meetings that we are required to schedule and lead with DWSS and other vendor participants.

Participate and Cooperate in Federal Audits, Review and IV&V

We participate and cooperate in federal audits, reviews and semi-annual IV&V reviews as necessary during the NCSEAS project timeframe.

4.3.3 Deliverables

4.3 PROJECT INITIATION AND MANAGEMENT

4.3.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.3.3.1	Project Initiation and Management	4.3.2.1	10

Deliverable	*Confirmation of Review Time*
Project Initiation and Management	***10 Days***

4.4 Establishment, Maintenance, and Management of the Project Site

4.4.1 Objective

4.4 ESTABLISHMENT, MAINTENANCE, AND MANAGEMENT OF THE PROJECT SITE

4.4.1 Objective

This task includes the establishment, maintenance and management of the project site.

Deloitte, as the Implementation Contractor, is positioned to begin the NCSEAS project at high effectiveness because we already have an established project site in Carson City where we are currently working on other projects for DWSS. This site can be configured to address IRS Federal Tax Information (FTI) and applicable Personally Identifiable Information (PII) security requirements. We can leverage the infrastructure and lessons learned from this project site to quickly establish an effective project site for the NCSEAS project.

For the NCSEAS project, we plan to leverage our existing Carson City office at 1717 College Pkwy, Suite 106, Carson City, NV 89706. We use our Real Estate services and Information Technology Services (ITS) teams to extend our existing contract and negotiate extra space next to our existing space upon contract award, if required. Our Real Estate Services team manages a portfolio of nearly 11.3 million square feet of leased and owned properties, which represents 160 Deloitte locations in the United States and India.

SECTION HIGHLIGHTS

Our team has a strong record of management of facilities for large complex business and technology projects.

- ***We take on full accountability for managing the tasks, costs, and quality of facilities infrastructure***
- ***We leverage our robust real estate team dedicated to establishing facilities and facility contracts that meet or exceed DWSS requirements***
- ***Our team has deep experience in establishing application and technical infrastructures, including in the existing Carson City Deloitte project site location***

4.4.2 Activities

4.4 ESTABLISHMENT, MAINTENANCE, AND MANAGEMENT OF THE PROJECT SITE

4.4.2 Activities

4.4.2.1 Establish, maintain and manage the project site for the duration of the project in accordance with the following limitations and conditions:

A. The project site shall begin operations within sixty (60) days of the contract start date.

B. The project site shall remain in full operation until six (6) months prior to completion of the final Maintenance and Operations period, at which time the project site may be phased out, with associated Program and remaining contractor staff being transitioned to appropriate State locations.

C. The timing and logistics of the phase out of the project site will be mutually agreed to by the Implementation Contractor and the Program, in accordance with the project plan, the staffing needs of the project at the time of project site phase out, and the availability of space at appropriate State locations.

4.4.2.2 Implementation Contractor Responsibilities for the project site include:

A. Identify a suitable project site within Carson City and negotiate a lease.

B. Execute the lease as lessee upon contract award and Program approval of the recommended site.

C. Identify and conditionally secure a suitable alternative site in the event the State does not approve the initial site.

D. Build out the project facility to include furniture, fixtures, telecommunications, and internet connectivity.

E. Provide conference rooms, private meeting spaces, and collaboration areas.

F. Supply all required equipment, such as but not limited to telephones, PC(s) and software, copiers, and faxes.

G. Obtain and maintain necessary certificates of occupancy. The occupancy permit deliverable provides proof that the Implementation Contractor has secured and prepared the facilities for the project site.

H. Assure appropriate physical security provisions for the project site.

I. Assure a professional and comfortable work environment within the project site.

J. As lessee, maintain an appropriate professional relationship with the facility landlord.

K. Assure that all expenses associated with the Implementation Contractor's responsibility in fulfilling this section are handled in a timely and professional manner.

Project Site Availability

Having a project site available as close to the start date of the project as possible is critical to promote immediate productivity and reduce the risk of schedule delays. We plan to expedite the establishment of the project site through the use of our existing Carson City

office. If additional space is required, our Real Estate Services team work diligently to establish extra space next to our existing space to support the needs of NCSEAS. We agree to have a fully functioning project site available for our team within sixty days of the contract start date.

A smooth transition from the Implementation Contractor project team to DWSS is critical to the continued success of the new CSE system. We work to decrease the disruption to business and of transition efforts by maintaining a fully functioning and operational project site until six months prior to the completion date of the contract, at which point a phase out of the site can begin. Our goal is to minimize disruptions to the NCSEAS system.

Deloitte works closely with DWSS to determine the most effective project site phase out approach. Many factors need to be considered before a phase out can begin, including the availability of DWSS space after the completion of the Maintenance & Operations phase. Depending on the current situation and needs of the project, Deloitte and DWSS work together to come up with an agreed upon timeline and logistical details for the phase out.

Project Site Responsibilities

If additional space beyond the existing Carson City site is required, the Deloitte team engages our Real Estate Services team to obtain extra space next to our existing space. Upon contract award, the Real Estate Services team and project manager begin work immediately with DWSS to review and receive approval for the project facility. On acquisition of the extended space next to the current project facility, the Real Estate Service team starts build out planning and implementation. Preliminary office lease and space planning take place prior to contract awarding, and the team is prepared to deliver a fully functional project site capable of being occupied within sixty calendar days of the effective contract date.

Deloitte is aware and supportive of the necessity to safeguard the project site, project staff, and project information with a strong physical security profile. Our team works with DWSS and facility landlord to set up a site that meets security, safety, and applicable DWSS and federal regulations. We work with DWSS to establish a site that addresses FTI security requirements outlined in IRS Publication 1075. A key security feature that is applied by ITS is that Deloitte employees use OneBadge for access into Deloitte spaces, and associated contractors or vendors are provided temporary badges with controllable and customizable access credentials. Secure storage for electronic and paper-based data can be provided onsite through a variety of means, either via cypher or electronic locking systems, and Deloitte works with DWSS to enable required protocols. Addressing the DWSS security standards is of utmost importance. Security safeguards are in place in the existing Carson City project site, and can be expanded and leveraged to encompass the NCSEAS project space and staff if the decision is made to utilize the existing site.

It is our responsibility to establish a functional facility for the project team on-site in Carson City, including furniture, fixtures, telecommunications, and Internet. Deloitte provides the project site with a wireless network that addresses DWSS standards. Deloitte supports an internal wireless network within its organization and a wireless security policy is in place. Only Deloitte-approved access points are connected to Deloitte's network. For wireless access to Deloitte's networks, personnel are required to use Wi-Fi Protected

Access (WPA2 or stronger protection) where it is available. For the convenience of visitors, clients, or guests, a wireless network providing controlled access to the Internet may be made available within Deloitte's wireless infrastructure. The required amenities, including expansion of wireless capabilities, from utilizing existing Carson City project site are leveraged to accommodate the NCSEAS project and staff are acquired and set up by our Real Estate Services team.

Our established project site also provides Deloitte practitioners with the required equipment to aid in day-to-day work success, including telephones, computers, software, copiers, and fax machines. Meeting spaces of various sizes are also available for use by the project team. This includes conference rooms, private meeting rooms, and collaboration spaces to aid in day-to-day project activities.

4.4.3 Deliverables

4.4 ESTABLISHMENT, MAINTENANCE, AND MANAGEMENT OF THE PROJECT SITE

4.4.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.4.3.1	Project Site Establishment, Maintenance and Management	4.4.2.1 through 4.4.2.2	10

Deliverable	*Confirmation of Review Time*
Project Site Establishment, Maintenance, and Management	***10 Days***

4.5 Project Schedule

4.5.1 Objective

4.5 PROJECT SCHEDULE

4.5.1 Objective

The NCSEAS project will use the PMO project schedule to guide, communicate, and coordinate the project efforts of the State and all project contractors. The project schedule will identify all project components with a description of tasks and subtasks. The project schedule will identify staffing assignments and schedule for all contractors and State staffs' activities.

Our recent experience creating, executing and maintaining a project schedule for the State of Oregon's CSEAS 2.0 project allows us to leverage that experience collaborating with the State and PMO, IV&V, and QA contractors to identify the required tasks to successfully complete the NCSEAS project. This uniquely positions Deloitte to establish a rigorous work breakdown structure that addresses the specific tasks and deliverable requirements for the NCSEAS project, while meeting the overall project schedule needs. The success of the NCSEAS project requires coordination across multiple stakeholders, including the CSE Program and various contractors, and our project schedule represents an integrated roadmap for stakeholders to work towards project success.

SECTION HIGHLIGHTS

- ***The Deloitte team spent over 300 hours developing the proposed NCSEAS project schedule to accelerate our ability to commence the project***
- ***Deloitte's collaborative approach to project schedule creation assists in identifying the required tasks that need to be completed to achieve project success***

4.5.2 Activities

4.5 PROJECT SCHEDULE

4.5.2 Activities

Develop a DD&I Project Schedule in accordance with the following limitations and conditions:

4.5.2.1 Per the standards in the project schedule management plan, the Implementation Contractor shall work collaboratively with the Program's Project Management Team, PMO contractor, and other designated contractors to build the schedule using the Work Breakdown Structure.

4.5.2.2 Decompose tasks into subordinate units associated with the activities of the project, to include but not limited to:

A. Project initiation;
B. Procurement of hardware, software and related infrastructure;
C. Development and operations hardware and software;
D. System requirements and design;
E. Development, modification, conversion of system software code;
F. Legacy data conversion;
G. Testing and accepting the new system;
H. Training staff on the new system;
I. System implementation;
J. Warranty period (initial maintenance and operation);
K. System certification;
L. Transition maintenance and operation of system to State; and
M. Project closeout.

4.5.2.3 The Implementation Contractor will assign tasks or project roles for completion to their team members.

4.5.2.4 The Implementation Contractor will update the project schedule with completed work, new tasks, and subtasks as well as an estimation of remaining effort on tasks in progress, upon occurrence.

4.5.2.5 The Implementation Contractor will coordinate with State staff and staff from other contractors to obtain the status on their activities for the scheduled update.

Building the Project Schedule

We use a regimented approach to develop the project schedule in Microsoft Project and maintain it throughout the life of the project. Developing the NCSEAS project schedule is a collaborative task that requires coordination between key project stakeholders. Adhering to the standards in the Project Schedule Management Plan, Deloitte works directly with the DWSS project management team, IV&V contractor, PMO contractor, and QA contractor to use a Work Breakdown Structure (WBS) to identify tasks and resource assignments that cover the project milestones, deliverables, and other tasks that lead to project success. We provide input from our project schedule to the PMO contractor to incorporate in the global Master Work Plan for NCSEAS, which is used during Steering Meetings and other cross-team project meetings.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address project schedule requirements:

- ***We propose to use a 6-month rolling resource schedule to supplement the overall project schedule while reducing the number of resource updates necessary during the project timeframe.***
- ***We have reflected within our proposed schedule adjustments to the functional and technical design activities to accommodate necessary stakeholder coordination.***

The project schedule is a tool to provide an overview of overall project progress, identify potential schedule-related risks, and inform management of progress against the plan. For example, our experience has taught us that planning for the right amount of time to effectively communicate key milestones and deliverable products to the involved stakeholders is critical to staying on schedule. Our plan carefully considers this element as we set up our time to collaborate with you to effectively build on the activities you request, track our status, update you on status, and maintain an effective and timely sign-off of the outputs and deliverables that are important to our collective success.

Developing and Decomposing Project Schedule Tasks

Deloitte's project schedule creation begins with a determination of the work breakdown structure (WBS). The WBS documents the detailed tasks required to complete the work and deliverables by phase of an initiative. It contains detailed information about the tasks to be completed within relevant phases/activities of the project. Schedule details are incorporated within our WBS in Microsoft Project and we assign resources at the task level across a rolling 6-month timeframe; rolling resource assignments help to reduce the number of required updates to the plan and schedule during execution.

Assigning Project Tasks

The baseline project schedule is initially created in Microsoft Project and is the foundation for the overall staffing plan that is reviewed with the DWSS at project initiation. We synchronize the schedule and resources from the project schedule with PMC. Resources are assigned tasks based on resource allocation in the work plan on a rolling 6-month timeframe basis. This baseline is used to monitor schedule variances during the project and identify tasks causing or likely to cause the timeline to slip.

Updating the Project Schedule

The percent complete of a task is updated as work is performed to complete the particular task by resources. The percent complete compared to the baselined schedule of completion provides DWSS an accurate representation of variance in planned schedule compared to actual schedule at a task level. This benefits the program by viewing Schedule Performance Index (SPI) and project health of the overall initiative or by drilling down to the exact exceptions in the work plan. Our work plan is deliverable driven, which we find more effective for measuring and reporting on project progress. The process for maintaining our project schedule is highlighted in the following figure.

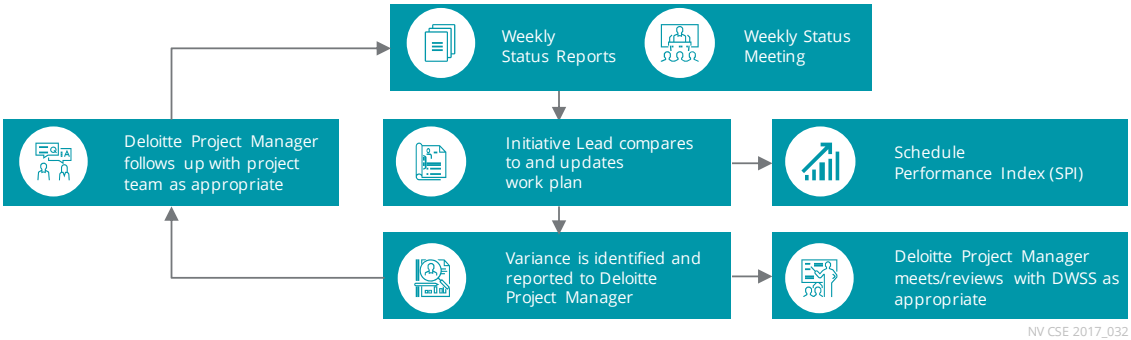

Figure 4-4. Deloitte utilizes a rigorous process for ongoing upkeep of project schedules.

Coordinating Project Schedule Status

Deloitte recommends status reporting of the Plan be incorporated into the agenda of the status meetings to facilitate the review/concurrence to modifications, as well as to gain agreement at the management level to project status, direction and relevant adjustment to scope, schedule, and/or the required resource allocation. The PMC Dashboard view provides the health of the project and is customizable by the user to show a variety of reports including Gantt chart, Summary Tasks, and Project Milestones. The following figure is a sample of the summary dashboard that can be tailored to present reporting metrics.

My Dashboard

My Projects

Project No	Name	Status	Project Manager	Work Plan % Complete	Planned Start	Planned Finish
12345	DPW IT Support Services	New	Name X, Name Z, Name A, Name B, Name C	19%	Aug 1, 2010	Aug 31, 2011

Showing 1 to 1 of 1 Prev Next Maximize

Requests Assigned to Me

No	Project	Request Type	Priority	Status	Description	Assigned To	Due Date	Created By	Created On	Last Updated
12345	DPW IT Support Services	Deliverable Review	3-Medium	New	DPW IT Support Services - DSD	Name X, Name Z	Aug 10, 2010	Name X, Name Z	Aug 6, 2010	Aug 6, 2010
12345	DPW IT Support Services	Deliverable Review	1-Critical	New	Deliverable review of DPW IT Support Services GSD documents	Name X, Name Z	Aug 11, 2010	Name X, Name Z	Aug 6, 2010	Aug 6, 2010
12345	DPW IT Support Services	Issue	4-Low	In Progress	Load Tests in LiveCycle	Name X, Name Z	Nov 25, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010
12345	DPW IT Support Services	Issue	2-High	In Progress	Standalone JBOSS Installation	Name X, Name Z	Oct 21, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010
12345	DPW IT Support Services	Issue	2-High	In Progress	Configure Adobe LiveCycle servers to support SSL	Name X, Name Z	Oct 19, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010

Showing 1 to 5 of 11 Prev Next Maximize

Requests I Created

No	Project	Request Type	Priority	Status	Description	Assigned To	Due Date	Created By	Created On	Last Updated
12345	DPW IT Support Services	Deliverable Review	3-Medium	New	DPW IT Support Services - DSD	Name X, Name Z	Aug 10, 2010	Name X, Name Z	Aug 6, 2010	Aug 6, 2010
12345	DPW IT Support Services	Deliverable Review	1-Critical	New	Deliverable review of DPW IT Support Services GSD documents	Name X, Name Z	Aug 11, 2010	Name X, Name Z	Aug 6, 2010	Aug 6, 2010
12345	DPW IT Support Services	Risk	3-Medium	In Progress	DIMO re-running jobs in testing environment	Name X, Name Z	Aug 6, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010
12345	DPW IT Support Services	Issue	4-Low	In Progress	Load Tests in LiveCycle	Name X, Name Z	Nov 25, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010
12345	DPW IT Support Services	Issue	2-High	In Progress	Standalone JBOSS Installation	Name X, Name Z	Oct 21, 2010	Name X, Name Z	Aug 5, 2010	Aug 6, 2010

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Deliverables Awaiting My Review

No results found.

My Tasks

Preferences: Project - DPW IT Support Services;

Actual Start	Actual Finish	Estimated Finish	Actual Effort (hrs)	% Complete	Estimated Remaining Effort (hrs)
Schedule LDM Review with Client — Task is Pending Predecessor; Scheduled: 8/19/10 - 8/19/10 (0.13 days)					DPW IT Support Services > Wor.../ Technical Group and Client
		8/19/10	0.00	0	0.50
Prepare for the LDM Review — Task is Pending Predecessor; Scheduled: 8/19/10 - 8/20/10 (0.13 days)					DPW IT Support Services > Wor.../ Technical Group and Client
		8/20/10	0.00	0	0.90
Conduct LDM Review with Client — Task is Pending Predecessor; Scheduled: 8/20/10 - 8/20/10 (0.13 days)					DPW IT Support Services > Wor.../ Technical Group and Client
		8/20/10	0.00	0	0.90
Review Changes to DB Logical Model with Shared Services / Technical Group — Task is Pending Predecessor; Scheduled: 8/19/10 - 8/20/10 (1 days)					DPW IT Support Services > Wor.../ Technical Group and Client
		8/20/10	0.00	0	8.00

Reset Save

Showing 1 to 4 of 4 Prev Next Maximize

My Time Sheets

Time Sheet # - Period	Description	Status
Date X – Date Y	Name X, Created during period Date x – Day Y	Unsubmitted

Create New Time Sheet

Showing 1 to 1 of 1 Prev Next Maximize

NV CSE 2017_527

Figure 4-5. The PMC Dashboard view provides the health of the project and the view can be customized for the user.

We develop the project schedule based on dependencies, constraints, and assumptions in order to produce an overall feasible schedule that is sufficient to meet the requirements of the NCSEAS project. Detailed tracking of project tasks, issues, risks, and changes combined with a structured set of status reports and quality assurance review procedures allow for early detection and correction of deficiencies. Such tracking and internal quality assurance measures are administered by our internal Project Management Center of Excellence team who assist in the management and control of project related activities. Our proposed team provides you with senior and experienced leaders that manage the quality of the work

performed by each of the tracks on their team. This exposes issues before there they can impact the delivery schedule.

Interdependent tasks are identified well in advance and tracked to meet the corresponding deadlines. The tracking mechanism of interdependent tasks also encompasses monthly project status reports, distributed to relevant stakeholders to keep them informed of overall progress. This forum allows DWSS and our Deloitte management team to gain a broader understanding of overall project status, risks, outstanding action items and progress of the interdependent tasks as a whole.

We plan the work and work the plan. The tasks that we perform are tasks in the work plan. Progress is reported against the baselined plan so we can calculate variances. This also allows us to generate metrics to measure the health of the project. We provide visibility of metrics to you to promote transparency on the project. Finally, we use the PMC tool to allow us to measure the health of the project accurately.

4.5.3 Deliverables

4.5 PROJECT SCHEDULE

4.5.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.5.3.1	Project Schedule	4.5.2.1 through 4.5.2.5	10

Deliverable	*Confirmation of Review Time*
Project Schedule	***10 Days***

The Project Schedule deliverable includes a detailed project plan with major milestones, deliverables, and task dependencies, as shown in the sample provided in the following figure.

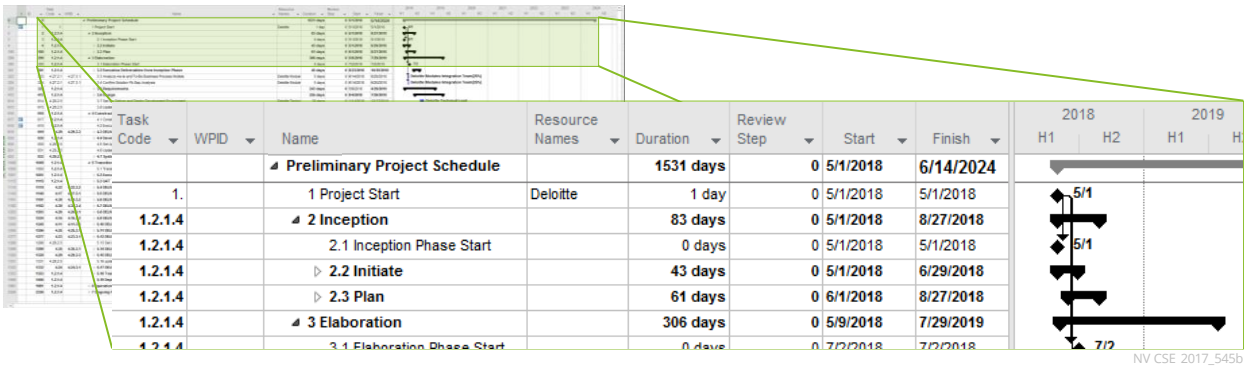

Figure 4-6. Example project schedule.

4.6 Project Status Reports and Meetings

4.6.1 Objective

4.6 PROJECT STATUS REPORTS AND MEETINGS

4.6.1 Objective

Weekly and monthly project status reports for project stakeholders will document project progress; identify staffing, work plan and schedule adjustments; summarize issues resolved; and review the tasks project staff would address in the upcoming month.

Deloitte monitors project progress and transparency through its project status reporting approach. Our status reports are focused on metrics that drive our project philosophy — what gets measured gets done. This benefits our management team, the PMO team, other vendor teams, and the DWSS project management team by providing a clear view of how the project is progressing, decisions and issues that need to be addressed, and what needs to be done to keep the project on schedule. We also provide additional capabilities in support of the ongoing monitoring and overall execution of the project. We bring in Deloitte experts from our Project Management Center of Excellence to review and confirm that our project schedules adhere to leading practices.

SECTION HIGHLIGHTS

Deloitte provides project status reports that:

- ***Provide transparency to the health of the project***
- ***Use metrics to track budget and schedule***
- ***Identify risk and issues***

In collaboration with the DWSS project management team, we define and establish project performance indicators. Quantitative and qualitative data are provided in the weekly status report to present DWSS with an accurate assessment of the overall health of the NCSEAS project. From our experience with child support enforcement system replacement projects, we have established useful status reporting principles focused on transparency, managing through metrics, and accuracy. The following table summarizes each principle and the corresponding benefits to DWSS and the NCSEAS project.

Status Reporting Principle	*Deloitte Delivers Progress Through Measurement*
Document and assign items	***Both status reports and issues are tracked with clear assignment of owners and follow-up steps. This information is captured in our PMC tool, which provides DWSS with a single source for project details.***
Quantify and measure progress	***A project of this scale requires quantitative measurements of progress. We measure performance against the project plan and also quantify items like the number of outstanding issues, the number of system defects, and the number of completed test scenarios. We provide Earned Value Management (EVM) information to detect and monitor deviations from schedule.***
Approved escalation procedures	***Project issues need to be resolved quickly to keep the work on schedule. Clear delineation of when and how issues are escalated is provided to both Deloitte and DWSS staff members.***
Meet regularly	***Face-to-face meetings are the life blood of communication on a project. Deloitte facilitates weekly status meetings with the project management team to review status.***

Table 4-2. Status reports deliver progress through measurement.

4.6.2 Activities

4.6 PROJECT STATUS REPORTS AND MEETINGS

4.6.2 Activities

4.6.2.1 Weekly Meetings

Throughout the project, the Implementation Contractor's project management team and the Program's project management team will meet to discuss project status.

Weekly meetings will follow a preset agenda developed by the PMO contractor.

The Implementation Contractor shall be responsible for producing minutes of these meetings and distributing them within five (5) business days. The Implementation Contactor shall have all agenda items to the PMO vendor prior to the weekly meeting. The agenda items will be addressed during the meeting and minutes will be provided within five (5) days of the meeting.

4.6.2.2 Weekly Reports

On each Monday throughout the project, the Implementation Contractor's Project Manager must provide to the Program's Project Manager a weekly report, describing:

A. Project status;

B. The previous week's activities; and

C. Other project updates since the last report.

D. The proposed format and level of detail for the status reports shall be subject to the Program's approval.

E. The narrative portion of the report must include, at a minimum, the following:

1. Activities performed during the period by area (e.g., Design, Development, Testing, etc.);
2. Overall completion status of the project in terms of the approved project work plan;
3. Plans for activities for the next period;
4. Deliverable status, with percentage of completion and time ahead or behind schedule for particular tasks;
5. Problems encountered and proposed / actual resolutions; and
6. Proposed changes to the project work plan, if any.

4.6.2.3 Monthly Reports

A. The Implementation Contractor must also submit a written status report that is due to the Project Control Manager the tenth (10th) working day of each month for the prior month's activities.

B. This document, in a format to be developed by the PMO contractor and approved by the Program, shall be a basic tool for reporting to federal officials and other State officials on funding issues and program matters.

C. A complete set of updated and current output from the Implementation Contractor's project management software, along with the corresponding electronic project plan files, is to be provided with each monthly status report.

D. Ad hoc reporting as requested by the Project Director or designee.

Deloitte uses data from the PMC tool to populate status reports. The Deloitte PMC, depicted in the following figure, is an online, centralized system that has robust dashboards and status reporting capabilities that allows users to extract and present project status data efficiently. PMC's project management processes are consistent with leading industry frameworks and confirm to the reporting practices described in the Project Management Institute's PMBOK.

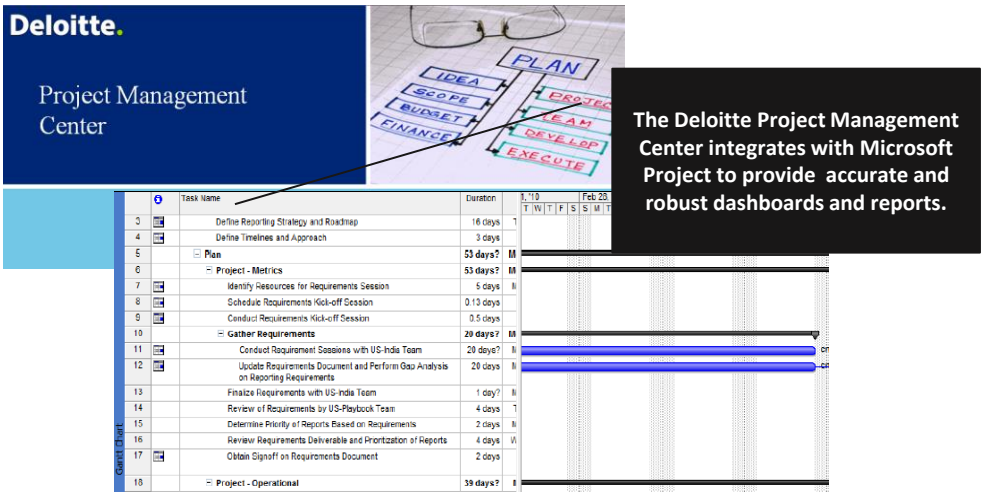

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Figure 4-7. The Deloitte PMC tool for status reports.

4.6.2.1 Weekly Meetings

We hold weekly status meetings with the DWSS project management team using an agenda developed in collaboration with the PMO contractor. We may offer suggestions for topics when needed. We know there may be a need for other status-related meetings with specific individuals or organizations as directed by the agency project manager. We provide draft agenda items to the PMO contractor prior to the weekly meeting and meeting minutes within five (5) days of the meeting conclusion. We expect the same from the CSE program and their contractors.

In addition to regularly scheduled meetings, it is our philosophy to schedule ad-hoc meetings when required to address emerging and/or priority issues rather than waiting for the next status meeting. As we have done in our prior projects with DWSS, when there is a topic we need to discuss, we pick up the phone and schedule a session with DWSS. This promotes transparency and keeps everyone up to date with project progress.

4.6.2.2 Weekly Status Reports

Deloitte's NCSEAS weekly project status report, at a minimum, contains three key sections:

1. ***Current project status***
2. ***Completed and upcoming milestones***
3. ***Resource allocation and planning***

We have provided examples of these in the following sections. When the project is initiated, we formalize and confirm the format of the weekly status report with the CSE program and the PMO contractor.

Part 1 – Current Project Status

Objective and transparent reporting of current project status is imperative to monitoring large, complex system implementations. The metrics and information provided in this report act as a barometer for understanding the overall health of the NCSEAS project and can be used to communicate information to project stakeholders such as the technical teams, the project management office, management, and program and executive staff.

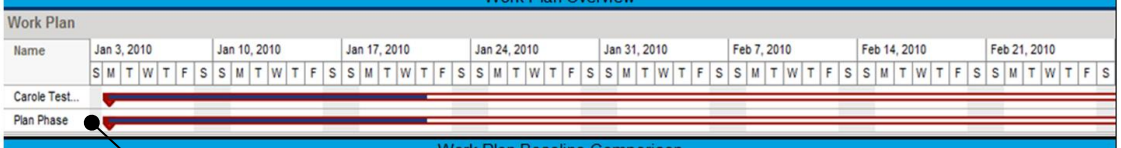
The following screenshot displays sample information for the current project status section.

Current Project Status

Work Plan Extract

Project	Task Category	Task Name	Status	Scheduled Start Date	Scheduled End Date	Actual Start Date	Actual End Date
NCSEAS	Project Management	Project Planning	Complete	1/2/2011	1/14/2011	1/4/2011	1/15/2011
NCSEAS	Quality	Change Review	In Progress	1/2/2011	1/7/2011	1/3/2011	1/7/2011
NCSEAS	Testing	Change Request 2.2	In Progress	1/2/2011	1/9/2011	1/2/2011	1/9/2011
NCSEAS	Infrastructure	Server Management	Active	1/2/2011	1/14/2011	1/2/2011	1/14/2011
NCSEAS	Architecture	Change Request 2.4	Complete	1/2/2011	1/13/2011	1/2/2011	1/10/2011

Work Plan Overview



Work Plan Baseline Comparison

Sequence	Name	Scheduled Start	Scheduled Finish	Task Status	Duration (Days)	Effort (Hours)	Variance
1	Project Management	1/2/2011	1/14/2011	Complete	12.00	52.00	0.00
2	Quality	1/2/2011	1/7/2011	In Progress	5.00	40.00	0.00
3	Testing	1/2/2011	1/9/2011	In Progress	7.00	48.00	15.00
4	Infrastructure	1/2/2011	1/14/2011	Active	12.00	156.00	-7.00

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The Project Current Status section will use a combination of graphics and text to provide an objective view of the NCSEAS project.

By comparing the approved work plan baseline to actual hours spent on tasks, variance is calculated.

Figure 4-8. Current project status.

The current project status section provides stakeholders the information they need to understand the true status of the NCSEAS system.

Part 2 – Completed and Upcoming Milestones

A comprehensive overview of completed and upcoming milestones and deliverables, including current deliverable status, provides NCSEAS project stakeholders with detailed information about the overall timeline. The Deloitte PMC tool integrates with the Microsoft Project plan and can display milestones in a Gantt chart view or summary view. We also list any problems encountered along with the proposed and actual resolutions. The following screenshot displays sample information for the completed and upcoming milestones section. The PMO team has the data necessary to address upcoming milestones for each of the status meetings.

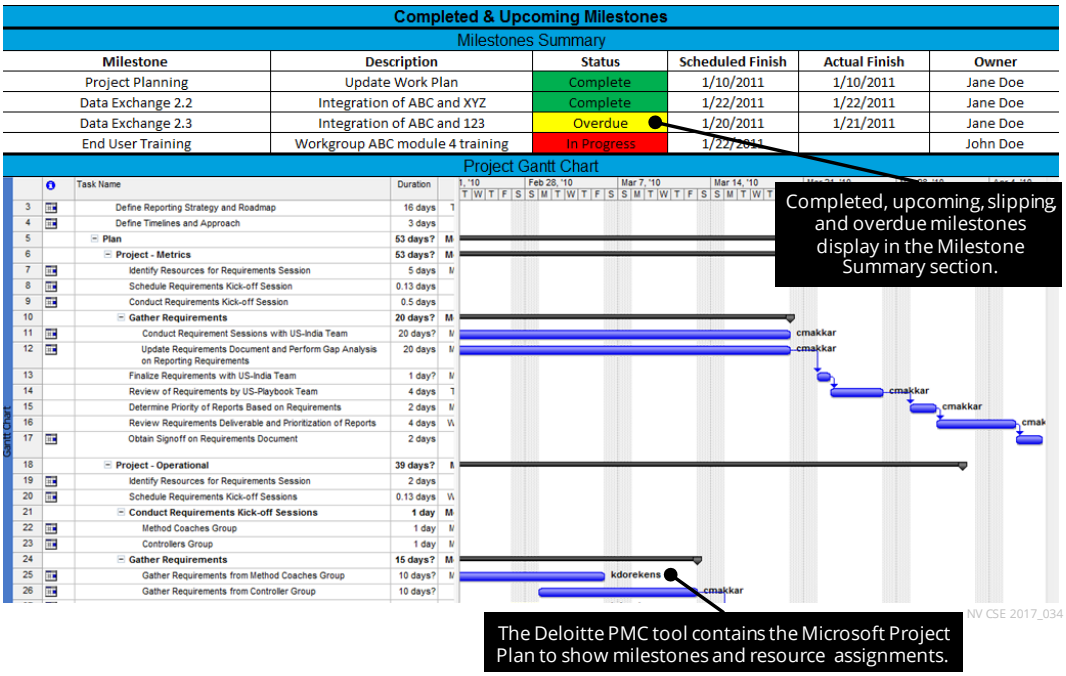

Figure 4-9. Completed and upcoming milestones.

Part 3 – Resource Allocation and Planning

Resources are one of the most controllable costs on a project. The Deloitte PMC tool provides dashboards to measure schedule performance as well as resource utilization, which can then be included in the project status report.

4.6.2.3 Monthly Status Reports

Deloitte's project manager and leaders conduct a monthly status meeting with DWSS leaders, the PM contractor, the QA contractor, the IV&V vendor, and other stakeholders. We use PMC to track and report on project status, and the agency has access to project data and the PMC tool.

We produce a report by the 10th working day of each month that provides the appropriate level information so DWSS project leadership can clearly convey project status and matters to federal and other stakeholders. In addition to the report, Deloitte provides a complete set of updated and current output from the project work plan. As in the case of our weekly status reports, our track leads and managers are responsible for gathering information for this document. The PMC tool allows us to consolidate this information and provide it to the agency in a timely manner, with schedules set during the planning and initiation phase. Reports provided during the weekly and monthly status meetings are uploaded in the central project repository for review by the agency.

Our team uses a variety of performance metrics facilitated by the use of PMC. The metrics include reported staff time, estimated staff time based on the NCSEAS schedule baseline, and the status of tasks completed, in process, and/or behind.

Earned Value Management (EVM) is a technique for measuring project progress. EVM is used to continually monitor schedule performance and can serve as an early indicator when schedule varies too widely from the established timelines. The metrics are easily

incorporated into PMC and can be displayed as a dashboard on the center's homepage for ease of use. EVM statistics should be monitored and reviewed regularly with stakeholders. As an example, Deloitte reviews EVM data for the Pennsylvania child support project on a weekly basis to determine any variations from the project plan.

This allows our team to monitor standard performance metrics such as Schedule Performance Index (SPI), schedule variance, activity percent completion, and other performance indices to maintain the progress of the NCSEAS implementation effort relative to the baselined plan.

Our team provides electronic and hard copies of the monthly status reports to DWSS and other applicable stakeholders within 10 business days following the last business day of the month. The monthly status reports includes the following sections:

- ***Overall project status***
- ***Priority work in progress***
- ***Status of major project deliverables***
- ***Link to the electronic project plan***
- ***Open issues and risks***
- ***Service level and performance metrics***
- ***Proposed work plan changes***
- ***Schedule updates and variances based on the work breakdown structure***

We leverage the weekly status report by retaining relevant information for the monthly report, adding financial data and any key statistics based on the audience of this report.

Deloitte has established successful status reporting principles that continue to be implemented in several states using the PMC tool. PMC's project management techniques and processes are consistent with leading industry frameworks and allow users to extract and present project status data efficiently.

4.6.3 Deliverables

4.6 PROJECT STATUS REPORTS AND MEETINGS

4.6.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.6.3.1	Weekly Meetings and Minutes	4.6.2.1	5
4.6.3.2	Weekly Reports	4.6.2.2	5
4.6.3.3	Monthly Reports	4.6.2.3	5

Deliverable	*Confirmation of Review time*
Weekly Meetings and Minutes	***5 Days***
Weekly Reports	***5 Days***
Monthly Reports	***5 Days***

Frequent status updates and open communication and transparency with regards to project status across project tasks is essential to the overall success of a project. This has been confirmed through our use of these proposed procedures on prior projects with DWSS.

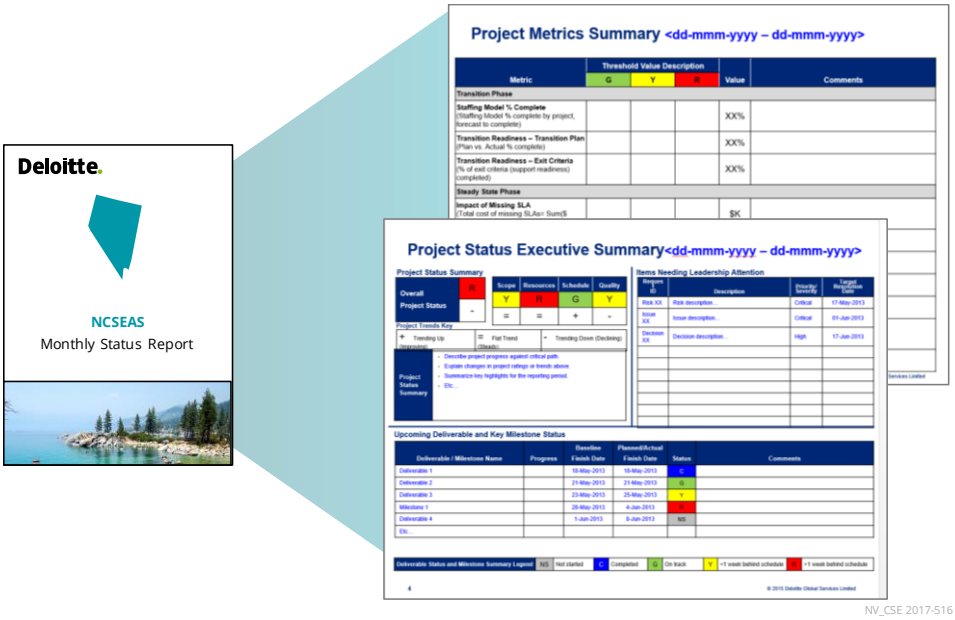

Figure 4-10. Sample Monthly Status Report.

4.7 Technical Approach Plan

4.7.1 Objective

4.7 TECHNICAL APPROACH PLAN

4.7.1 Objective

The Implementation Contractor will prepare and update as required a technical approach plan for the project.

Deloitte has deep experience in developing technology roadmaps and architecting large scale Java-based systems. We have worked with numerous large public and private sector clients in the design and set up of infrastructure in their data centers. We have done this in a way that meets their IT architecture standards and are well positioned to deliver similar service to DWSS on the NCSEAS Project.

The Deloitte Team brings:

- ***A demonstrated track record in delivering large complex solutions on AIX infrastructure***
- ***An infrastructure that is set up for scalability, extensibility, and flexibility***
- ***Cost Effectiveness by leveraging existing infrastructure and using virtualization for non-production environments***

DWSS has well-established infrastructure and architecture standards. Hardware and software components need to be installed and configured in the data center in time to meet project deadlines. We have worked collaboratively with EITS and DWSS IT Operations team since 2010 and assisted in infrastructure capacity estimation and planning, server topology planning, software installation and configuration in the AIX environment for IBM products such as IBM BPM Advanced, IBM ODM, IBM WebSphere Portal and IBM WebSphere Application Server. More recently, we worked closely with DWSS IT Operations team in simplifying the server

topology and configuration and automating build and deployment processes for Java/JEE-based Worker Portal solution.

To support the installation, configuration and operation of the infrastructure required for the NCSEAS solution, we create and update, as needed, a Technical Approach Plan. This plan specifies the hardware and software components for NCSEAS and their integration, identifies requirements and constraints on the modernized system hardware and software, and specifies the physical security for the system with power and other infrastructure supports. This plan is updated throughout the project, as required.

4.7.2 Activities

4.7 TECHNICAL APPROACH PLAN	
4.7.2	Activities
4.7.2.1	Develop a Technical Approach Plan which will:
A.	Specify hardware and software components for the NCSEAS and their integration.
B.	Identify requirements and constraints on the modernized system hardware and software as needed to integrate with the existing state infrastructure.
C.	Specify the physical security for the NCSEAS and the requirements for supplying it with electrical power and other infrastructure supports to the system.
D.	Provide a logical network diagram of all components of the proposed system.
4.7.2.2	Execute the approved Technical Approach Plan successfully.

4.7.2.1 Develop Technical Approach Plan

Our Technical Approach Plan encompasses the required content as specified in the RFP.

Hardware/Software Components and Integration

Our Technical Approach Plan outlines the hardware and software components needed for NCSEAS and their integration. We detail what components are needed and provide diagrams to graphically illustrate the configuration of the hardware and software components. When thinking through the design of hardware and software for the project, our experience helps us to collaborate and consider things like:

- ***Existing DWSS infrastructure, to reduce total cost of ownership and to maximize current DWSS investments***
- ***Design and build-out of an infrastructure that is extensible, scalable, and flexible***
- ***Performance of the application***
- ***Business metrics that determine the capacity of the infrastructure***

Our proposed plan contains hardware and software components based on our experience with the CA CSE and DWSS standards. We review DWSS standards related to our proposed infrastructure to determine fit in the DWSS environment, overall costs and other

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Technical Approach Plan:

- ***Our team has a detailed understanding of the hardware and software requirements for supporting expected performance of the CA CSE system***
- ***We bring an upgrade toolkit for the various framework level upgrades (Hibernate, Log4J, Struts) that are necessary to bring the CA CSE solution to current standards***
- ***Framework upgrades are incorporated within the overall Technical Approach Plan to confirm that hardware and software properly aligns to these framework technology requirements***

considerations such as compatibility with existing infrastructure. This review results in the creation of bill of materials that in turn provides input for the Hardware and Software Purchase plan. We review and finalize this plan with you. This is described in more detail in Section VI: 4.10 Development Hardware and Software Purchase Plan, and our proposed software list is provided in Section VII: 5.14 Project Software Tools.

Hardware/Software Requirements and Constraints

As we think through the application components, the framework configuration and integration of the application with other DWSS resources, we determine additional requirements and constraints for the hardware and software supporting the NCSEAS application. Since we work with your current infrastructure and environment and we propose tools that integrate well within the current Application Lifecycle Management (ALM) toolset. We define a set of meetings to review DWSS standards related to our proposed infrastructure to validate the fit within the DWSS environment, overall cost, and other considerations. For additional information, the proposed list of hardware and software is outlined in Section XI: Other Informational Material, 11.1 NCSEAS Hardware and Software.

Physical Security, Electrical Power and Infrastructure Support

Physical Security

When documenting the physical security required for the project hardware/software infrastructure, there are a number of federal, State and local policies to consider. The Physical Security section of our Technical Approach Plan aligns to and addresses applicable federal, State and local security policies. The DWSS data center has well-defined security policies implemented such as limiting access to authorized personnel. We review these security procedures and augment them as needed with any additional specifications specific to the NCSEAS solution. The following table includes some sample considerations for the identification of physical security items to be reflected in the Technical Approach Plan:

Security Considerations	*Description*
Physical Access Authorization	***What information must someone provide to get access to the infrastructure? Examples such as name, agency/department, purpose of access, approval authority.***
Physical Access Control	***How does the user get access? Is it via a keycard, a form that needs to be filled out documenting the access, or a combination of both?***
Visitor access records	***What documentation is kept when someone visits the data center?***

Table 4-3. Example Physical Security Requirements Considerations.

Electrical Power and Infrastructure Support

There are a number of considerations to address pertaining to the electrical power and support that must be provided to the data center. The following is an example of some of these considerations.

Security considerations	*Description*
Equipment and cabling	***What type of power is needed and what type of cabling is needed?***
Emergency shutoff	***Can the system be shut down in case of emergency?***

Security considerations	*Description*
Emergency power	***If there is a power outage, what type of emergency back-up power is needed to keep the system running?***
Temperature and humidity controls	***What type of HVAC system is needed?***
Water and fire protection	***How do we protect against water and fire damage?***

Table 4-4. Example Electrical Power and Infrastructure Requirements.

Logical Network Diagram

As required our Technical Approach plan includes a logical network diagram that represents each component of the required NCSEAS infrastructure and how each is integrated across the secured topography of the secure and public-facing network configuration. The diagram includes application components as well as infrastructure components and other key network appliances configured to support specific NCSEAS requirements, such as IRS FTI security requirements or isolation of the application data via firewalls/DMZ. The following figure provides a high-level sample of components to be included within the logical network diagram.

4.7.2.2 Execute the Approved Technical Approach Plan

Once approved by DWSS and the designated stakeholders, the Technical Approach Plan establishes the baseline for the hardware/ software architecture and infrastructure to be established for NCSEAS. This plan is leveraged, updated and confirmed throughout the design, development, testing and implementation activities. Successful execution and completion of the Technical Approach Plan occurs in conjunction with the completion of project initiation activities.

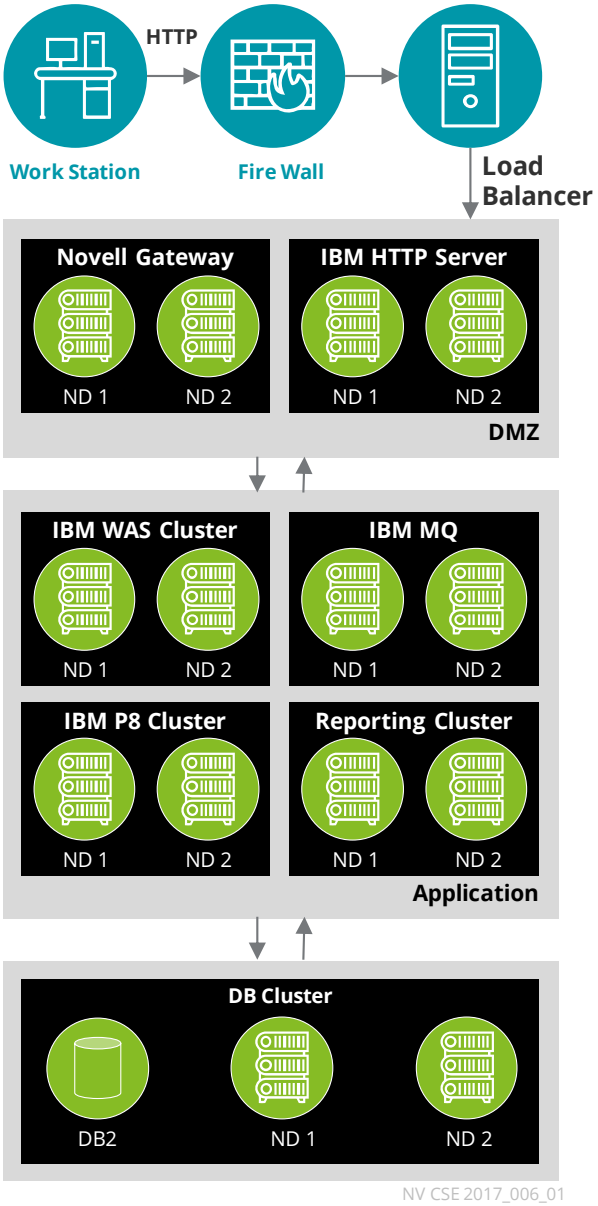

Figure 4-11. Sample Logical Network Diagram for NCSEAS application components.

4.7.3 Deliverables

4.7 TECHNICAL APPROACH PLAN

4.7.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.7.3.1	Technical Approach Plan	4.7.2.1	10
4.7.3.2	Successful Execution of the Technical Approach Plan	4.7.2.2	10

Deliverables	*Confirmation of review time*
Technical Approach Plan	***10 days***
Successful Execution of the Technical Approach Plan	***10 days***

4.8 Business Continuity and Disaster Recovery Plan

4.8.1 Objective

4.8 BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN

4.8.1 Objective

The Implementation Contractor will prepare and update as required a business continuity and disaster recovery plan for the project.

Business continuity and disaster recovery (BC/DR) planning has evolved from a simple focus on plans to a harmonized process across multiple disciplines in order to manage risk and sustain results. Through this multi-discipline approach towards resiliency, organizations have a higher likelihood of sustained success in mitigating risks and effectively responding to disruptions.

The objective for creating the Business Continuity/Disaster Recovery plan for NCSEAS, is to document a set of instructions that quickly guide the recovery teams on restoring technical components of the NCSEAS solution. Deloitte's BC/DR methodology provides tools to evaluate events, determine the best method of response, and facilitate quick decision-making to support the DWSS Recovery Time Objective (RTO) and Recovery Point Objective (RPO). DWSS is ultimately responsible for implementing the BC/DR plan.

SECTION HIGHLIGHTS

- ***Forrester ranks Deloitte as the top provider of BC/DR solutions and notes "Deloitte has the largest number of dedicated BC professionals of any vendor… as well as the broadest geographic reach and presence."***
- ***Our BC/DR practitioners have an average of 10 years of experience and hold at least one competency specific certification.***
- ***Our Resilience methodology aligns with industry standards and incorporates the continuous evolution from our project experiences.***

Our team leverages existing BC/DR plans available for the current NOMADS and other DWSS enterprise solutions as a starting point for the creation of the NCSEAS BC/DR plan that addresses specific requirements for the child support program. DWSS will be responsible for conducting a Business Impact Analysis (BIA) not limited to defining the RTO, RPO and Minimum Tolerable Downtime (MTD).

4.8.2 Activities

4.8 BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN
4.8.2 Activities
4.8.2.1 Develop a Business Continuity and Disaster Recovery Plan which will:
A. Set forth the protocols to provide immediate response to and subsequent recovery from any major unplanned business disruption, such as loss of utility service, building evacuation, or a crisis event such as a major fire, flooding, earthquake, etc.
B. Provide an overview of the requirements, strategies, and proposed actions necessary to recover mission critical business operations rapidly and effectively following such an event.
C. Ensure consistency with Enterprise Information Technology Services (EITS) Division, DHHS, DWSS, and CSEP business continuity and disaster recovery plans.
D. Identify the hardware, software, data, and communications components needed to provide for alternative site operations for production and development.
E. Identify the means for duplicating the system at the alternative site and specify the retention period for all application and operating system components.
F. Include the components for planning backups as well as core system design requirements.
G. Outline the steps for troubleshooting and replacing / reconfiguring system hardware and software.
H. Outline the steps for restoring the system and verifying the use of system backups.
I. Outline the conditions under which the project will use the alternative site.
J. Define the procedures for testing the alternative site.
K. Define the procedures for reverting to the primary site after failover to the alternative site.
4.8.2.2 Execute the approved Business Continuity and Disaster Recovery Plan successfully to include a disaster recovery functionality test.

4.8.2.1 Develop a Business Continuity and Disaster Recovery Plan

In delivering the Business Continuity and Disaster Recovery Plan, we leverage the Enterprise Resilience Methodology, which is inclusive of Business Continuity, Disaster Recovery, Crisis Management, and Emergency Management requirements. It defines an industry standard set of activities used to establish and operate a Business Continuity and Disaster Recovery program. Our methodology is aligned with global and national frameworks and utilizes tools and accelerators to assist DWSS in effectively achieving the NCSEAS BC/DR objectives. In addition to our methodology, we also leverage existing BC and DR plans from DWSS's Enterprise Information Technology Services (EITS) Division, DHHS, DWSS, and CSEP to provide a single operational framework. The following figure provides a conceptual view of our methodology.

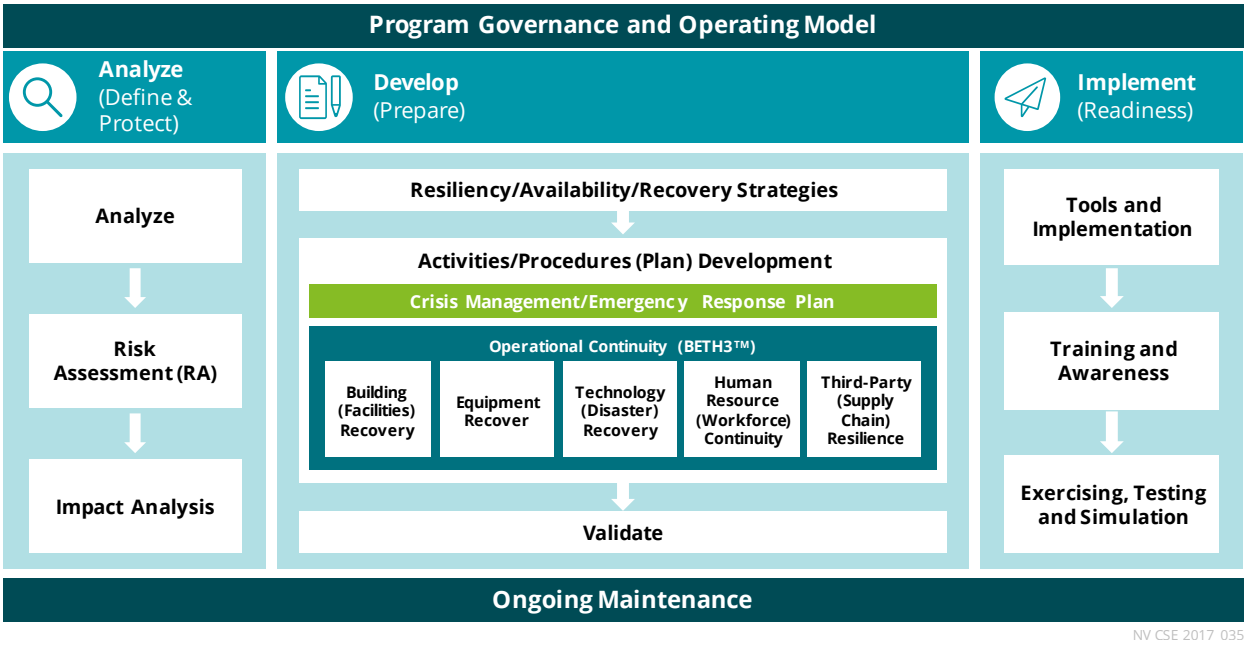

Figure 4-12. Deloitte's Enterprise Resilience Methodology.

Working with DWSS, we detail the BC and DR plan contents including the essential roles, responsibilities, and coordinating activities required to support disaster recovery and business continuity. Our plans are authored to address a wide range of infrastructure and service recovery responsibilities - from a short-term partial loss of infrastructure components to a catastrophic disaster of the data center or total application failure. Within the plan, we document procedures for data backup, disaster recovery of the system including server and data restoration, and emergency mode operations. Additionally, we define procedures to allow for facility access in connection with data loss restoration and to support emergency mode operations. The Business Continuity plan addresses recovery of critical NCSEAS business functions, such as the issuing of support payments, and addresses the required business units, business processes, human resources, and the technology infrastructure to recover those functions.

When designing plans, we consider how to support resumption of normal DWSS operational business functions as per the defined Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO). Our plans are designed in a modular fashion, which allow various procedures to be followed in the event of different failure scenarios (e.g., data center events, power supply issues, network failures, or faulty equipment). A clear framework for activation, escalation, and declaration of these different disaster scenarios is also established.

A "disaster" with respect to NCSEAS can be caused by various events. It could be a cyber incident, storage corruption, or natural disaster. Those events can vary in severity, scope, and impact. We collaborate with designated DWSS stakeholders to determine DWSS severity thresholds. These severity thresholds define the triggers for activating contingency plans. The steps in developing these thresholds include:

- ***Understand the current problem and incident management program***

- ***Conduct severity threshold workshop***
- ***Determine the various stakeholders involved in decision making (security, technology, problem management, business)***
- ***Determine critical periods and timeframes of disruptions***
- ***Develop severity threshold criteria and actions***
- ***Present severity thresholds***

The following figure provides an example of disaster declaration levels and criteria that can be customized for NCSEAS. It provides a means for DWSS stakeholders to know their roles and execute their responsibilities during an NCSEAS disaster. The DR Plan includes the recovery strategies, dependencies, references, and recovery teams required to recover the NCSEAS system in the event of a disaster.

	Severity Level	Criteria	Actions
Disaster Management	Disaster L3	• Severe impact to several critical applications resulting in the inability of client to provide critical functions, processes or services • Outage expected to exceed the RTO to resolve **EXAMPLES** • Complete datacenter loss of functionality or significant physical damage due to natural or man-made disaster • Extended power loss to data center • Complete failure or entire VM and storage environment	• Immediately escalate to executive leadership and initiate declaration procedures • Mobilize recovery teams and begin recovery process • Activate business continuity plans (workaround procedures for critical processes dependent on applications).
	Crisis L2	• Moderate to servere impact to one or more critical applications that has the potential to compromise the ability of client to provide critical functions, processes or services if not restored within 48 hours • Outage may or may not exceed the RTO (24 hour) to resolve • Potential to replace damaged equipment or restore data locally within RTO **EXAMPLES** • Isolated physical damage at the datacenter • Failure of application due to data loss or an isolated availability incident	• Assess damage to determine the extent of the disruption • Decide if business continuity plans should be activated • If outage is expected to exceed 24 hours or if the impact expands to additional critical systems, **escalate to L3 Disaster** otherwise address via incident management
Incident	Incident L1	• An incident can be any applications that are impacted, regardless of the cause **EXAMPLES** • Interruptions that are more than a delay or considered slow in processing	• IT immediately email/call to communicate incident to operations teams • Provide hourly status updates • If outage is expected to exceed target resolution time for critical incidents (1 business day), **escalate to L2 Crisis** • Consider activation of business continuity plans
	Issue	• While not as serious as an incident, high impact issues case a major disruption in service to the business and require immediate attention **EXAMPLES** • Unable to login to system due to application issues • Phone or internet connectivity interruptions	• IT immediately communicates incident to users and other affected parties via email • Provide hourly status updates

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Figure 4-13. Sample Disaster Severity Thresholds

Once severity thresholds are defined, we proceed with the development of the activation and escalation processes. Defining these processes before disaster strikes drives consistency in incident handling, accelerates declaration times, and supports the defined recovery objectives. The steps in developing these processes include:

- ***Develop the "declaration" flow chart***
- ***Determine roles and responsibilities of stakeholders during the declaration process***
- ***Determine and clearly communicate the implications of "declaring" a disaster***
- ***Present the Severity Thresholds, Activation and Escalation processes***

- ***Modify as appropriate***
- ***Develop enterprise communication plan***

A representative framework for disaster escalation and declaration is depicted in the following two figures.

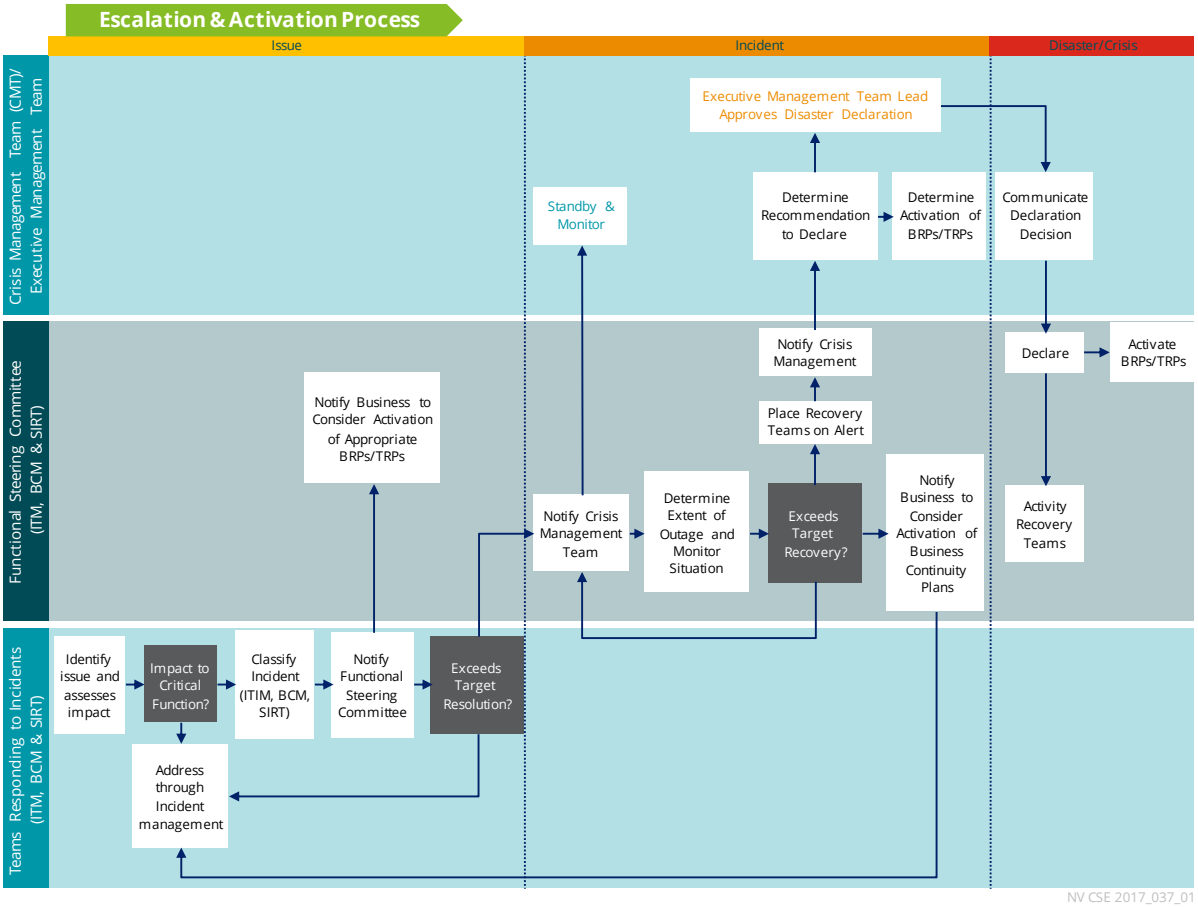

Figure 4-14. Sample Disaster Declaration Process

Team	Role	Communicate	Participate	Decide	Execute
	Primary Disaster Responsibility	*Primary point of contact and source of Communication*	*Team members that participate in response and coordination*	*Primary decision-makers to escalate to next level*	*Staff members that execute the response plans and activities*
IT Team	initiate preparation of recovery site	Name	• Name • Name • Name	• Informs: Crisis Management Team • Primary: Name • Consults With: IT Leadership	• Name • Name
BC Team	Oversee recovery of business functions	Name	• Name • Name • Name	• Informs: CMT Lead • Primary: Name • Consults With: Business leads, IT leads	• IT Application and • Infrastructure Teams • BC Plan owners
Crisis Management Team	Coordinate and manage disaster response internally and externally	Name	• Name • Name • Name	• Informs: Executive • Management • Primary: Name • Backup: Name • Consults With: Executive Management/ Board	• BC Plan owners • IT Business Continuity • IT Application and • Infrastructure Teams • Crisis Management
Executive Management Team/Board	Make decision to declare a disaster	Name	• Name • Name • CMT • IT • Facilities • Corporate Communications	• Primary: Name • Backup: Name • Consults With: Crisis Management Team	• N/A

Communication Flow

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Figure 4-15. Sample Disaster Recovery Stakeholder List

With the DR solution designed, severity thresholds established, and activation and escalation processes agreed upon, the Business Continuity and Disaster Recovery Plan can then be documented. The Business Continuity portions of the plan focus on restoration of core business processes. We conduct an abbreviated Business Impact Analysis (BIA), which identifies the core business processes supporting or reliant upon NCSEAS. For each core process, the BIA approach:

- ***Identifies the potential types of system failures for the process and the availability of alternatives to mitigate the impacts of the system failure.***
- ***Identifies potential risks to recovery with a specific focus on people, process, and technology systems.***
- ***Defines core business process criticality and impact definitions with the result being a prioritized business process recovery order.***

Following the assessment of core business impact and recovery order, we structure a set of business recovery strategies based on a loss of primary workspace, unavailability of personnel, and/or interruption to computing systems. These strategies are complimented by a clear framework of decision making, including the stakeholders required to authorize the decisions around disaster declaration.

The Disaster Recovery Plan summarizes the technical solutions for recovering NCSEAS including the contacts, tasks, technology, and procedures required to perform a recovery action. The plan details the technical steps necessary to failover from the Production data center to the alternate DR site in Las Vegas within the defined RTO and RPO.

The planning process is completed through a series of individual and team-based working sessions, as well as specific follow-up activities required to document required data. Within

the DR Plan, we capture the steps, contacts, configuration, equipment, and other elements that are necessary to:

- ***Activate the disaster recovery data center facility***
- ***Redirect and/or activate telecommunication links and data networks (e.g., Internet, WAN, LAN) to the disaster recovery data center***
- ***Recover from backups and/or applications logs required to restore the protected data point***
- ***Establish configuration modifications that may be required to the application environment necessary to promote disaster recovery to production.***

These steps of disaster recovery activation and execution are supplemented by a set of playbook procedures which clearly detail (a) retention and storage of backup files and software, (b) requirements for hardware backup of critical system components including frequency of backup, (c) the staffing plan for Disaster Recovery including physical security of the facility, (d) procedures to respond to a loss of online communications, (e) a file backup plan detailing requirements for offsite storage of master files and the backup schedule, frequency, and rotation of backup, and finally (f) the maintenance schedule of current system documentation and source program libraries stored at an offsite location. These procedures provide DWSS with an actionable and modular Disaster Recovery Plan that is capable of supporting recovery from a variety of operational and catastrophic scenarios.

4.8.2.2 Execute the Approved Business Continuity and Disaster Recovery Plan

After the plan is drafted, it is necessary to exercise the plan in order to:

- ***Verify the ability to recover critical processes within defined recovery objectives***
- ***Practice response processes to train key personnel and build organizational "muscle memory" in responding to disruptive events***
- ***Improve confidence in recovery from actual disruptions***
- ***Identifying weak points in the plans such as: role confusion, inadequate procedures, or gaps in coordination***

Exercising the plan via a simulated disaster is more than following a script with checkpoints that results in a "successful" grade. Our approach focuses on challenging the business and IT teams through scenarios which challenge underlying assumptions, identify areas of risk, and plan necessary improvements. We work with DWSS to define specific test objectives, weighting the objectives based on their impact to overall recoverability, and define procedures for testing the NCSEAS plan. The following figure illustrates our process.

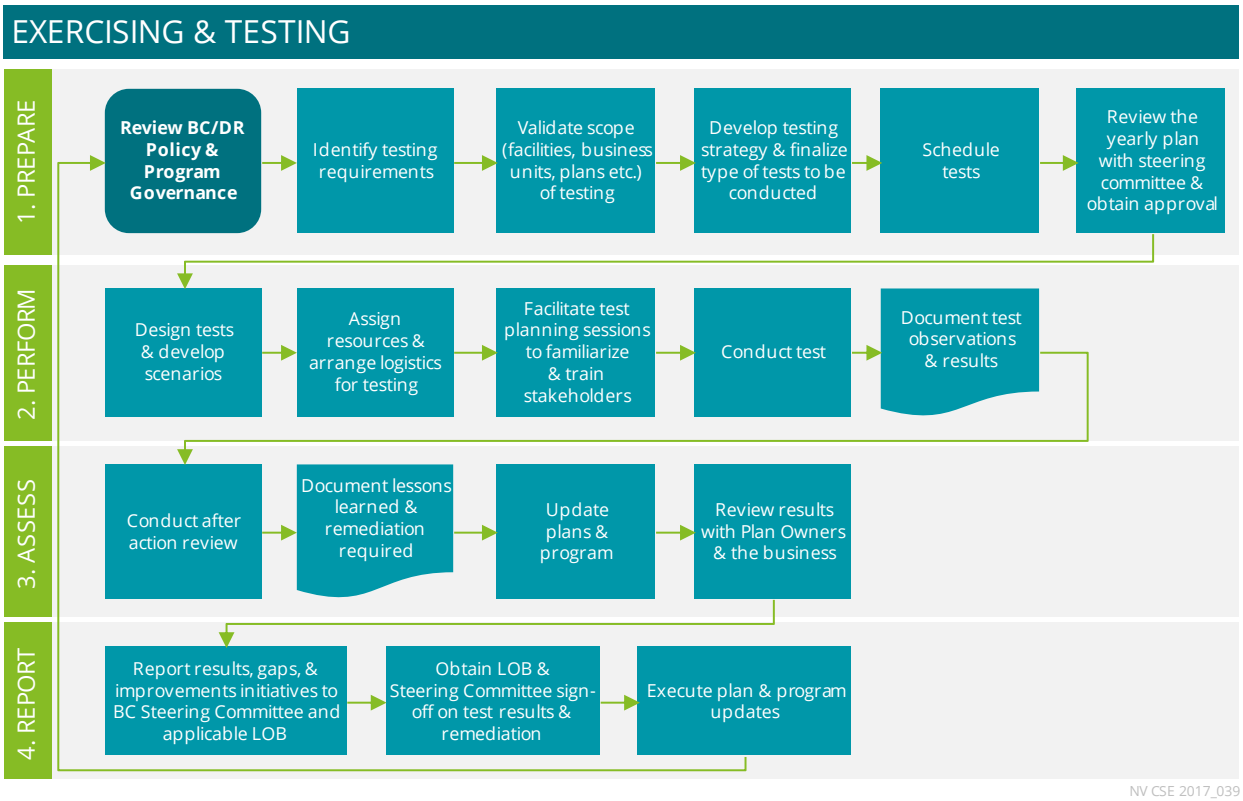

Figure 4-16. Deloitte's Exercise Process for periodically confirming the Business Continuity and Disaster Recovery Plan.

4.8.3 Deliverables

4.8 BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN

4.8.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.8.3.1	Business Continuity and Disaster Recovery Plan.	4.8.2.1	10
4.8.3.2	Successful Execution of the Business Continuity and Disaster Recovery Plan	4.8.2.2	10

Deliverables	*Confirmation of review time*
Business Continuity and Disaster Recovery Plan	***10 days***
Successful Execution of the Business Continuity and Disaster Recovery Plan	***10 days***

4.9 System Capacity Plan

4.9.1 Objective

4.9 SYSTEM CAPACITY PLAN
4.9.1 Objective
The Implementation Contractor will prepare and update as required a system capacity plan for the project.

Our experience from successful projects for similar system modernization efforts in other states allows us to accurately estimate initial capacity needs as well as the incremental growth to be expected for the NCSEAS solution.

The ability to easily add hardware and software capacity to accommodate increasing demands of adding users and data is important to a good capacity plan. There is value to minimizing system risk as well as minimizing cost impact. We have created system capacity plans for our CSE projects in Florida, Oregon and Pennsylvania, among others. The capacity plans include licensing information, user base, transaction and data volumes, network bandwidth and expected growth, and is maintained and updated throughout the project as the system is progressively developed and implemented. There are a number of areas that we look at when preparing this plan, including:

Capacity Plan Consideration	*Description*
Processor and Memory Utilization	***We look at utilization of hardware on our servers on other project, in the development environment, and load test to procure software that exceeds the capacity needs of NCSEAS.***
Disk Utilization	***We look at how the hard drives are being used, what type of RAID configuration is needed, are platter disks or Solid State Drives needed, etc.. We look at existing infrastructure such as Storage Area Networks (SAN) or Network Attached Storage (NAS) to see if these meet projected disk utilization needs.***
Data Storage	***We review and estimate the pace at which data is projected to grow in the NCSEAS database tables, application server logging requirements, and other storage-related needs to understand how much Data Storage is needed to support initial data expectations and project when more will need to be purchased over time.***
User Base	***We examine the number users that are projected to initially use the system and how quickly that user base is expected to grow, in particular if public user self-service functionality is to be added.***
Network Bandwidth	***We project the amount of network bandwidth the system uses based upon expected users, business functions to be executed, and corresponding data transmission requirements for those functions. This may also take into account other related technology supporting related CSE functions, such as document generation and batch processing.***

Table 4-5. Example Capacity Plan Considerations.

As with other deliverables, we create and review a DED with you to come to consensus on the information to be provided in the capacity plan.

4.9.2 Activities

4.9 SYSTEM CAPACITY PLAN	
4.9.2	Activities
4.9.2.1	Develop a System Capacity Plan which will:
A.	Provide detailed estimates of the system load and specify the necessary performance requirements for operational memory, computing power, data storage, and expansion to sustain planned growth.
B.	Provide methodology used to determine estimates.
4.9.2.2	Execute the approved System Capacity Plan successfully to include:
A.	Testing the configuration.
B.	Baselining the configuration.

4.9.2.1 Develop System Capacity Plan

Estimate System Load and Define Performance Requirements

Our team performed an analysis and estimate of the system load and performance requirements for NCSEAS, based upon the existing capacity maintained for the CA CSE solution as well as projected capacity for the Oregon solution; that information was used as a basis for the Hardware/Software list we include in this proposal. We also utilized our Global Alliance with IBM to get their insight and expertise in proper sizing and estimating.

During the project initiation and planning phase of the application life cycle, we revise the initial capacity plan to prepare for the initial procurement of hardware and software resources. During this phase, the application is still in the design stage. Data on resource usage is not yet available. Based on the information available from the existing legacy system, average and peak level of load is estimated. Another input to this estimate is our knowledge of the growth rate and performance of transactions for the CA CSE system that we manage, leading to more accurate estimates. This analysis forms the basis for expected application usage. After the design sub-phase of our EVD methodology has completed, capacity planning of the database is performed. Using the system design, and with precise statistical data from the existing system, the requirement for data storage is finalized.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the System Capacity Plan:

- ***We leverage our knowledge of the CA CSE solution to establish a baseline capacity requirement at the individual table level based upon the existing CA caseload***
- ***We calculate projected capacity requirements based upon the expected proportional caseload for Nevada, confirmed based upon similar calculations performed for the Oregon solution***
- ***The capacity plan is further updated based upon projected changes to caseload and expectations for CSE case management activities against that caseload over time***

Both the expected application usage and data storage requirements are used as input to the sizing effort. The sizing effort considers both hardware and software requirements. For the hardware components, this information includes considerations for memory, CPU, network, I/O and disk space. This data is used to calculate the number of application servers, data servers, and storage needed for the initial build. The requirements for the software components focus on identifying components that meet the required service levels. The

sizing effort also includes determining the number of software licenses required per product, for the estimated number of users.

There are a number of tools that we use to assist with sizing. Through our alliance with IBM, we obtain sizing tools that are specific to their product sets. Using the estimated load on the system, we provide input to these tools which then produces information that helps to complete more accurate sizing estimates. We also work with your IT staff to understand your existing standards and apply those to the sizing effort as required.

Estimates for Planned Growth

In our capacity planning efforts, we look to maintain a scalable multi-tier structure that is currently supported within the EITS IT environment. The system architecture consists of Presentation, Application and Data tiers (layers). This layering strategy enables the infrastructure to be scalable, flexible and cost-effective. For example, we may identify the need for additional capacity for the presentation of NCSEAS screens based on the analysis of web server memory and resource utilization; in that case we may only need to add hardware capacity to the Presentation layer. The proposed infrastructure tiered strategy is represented in the following figure.

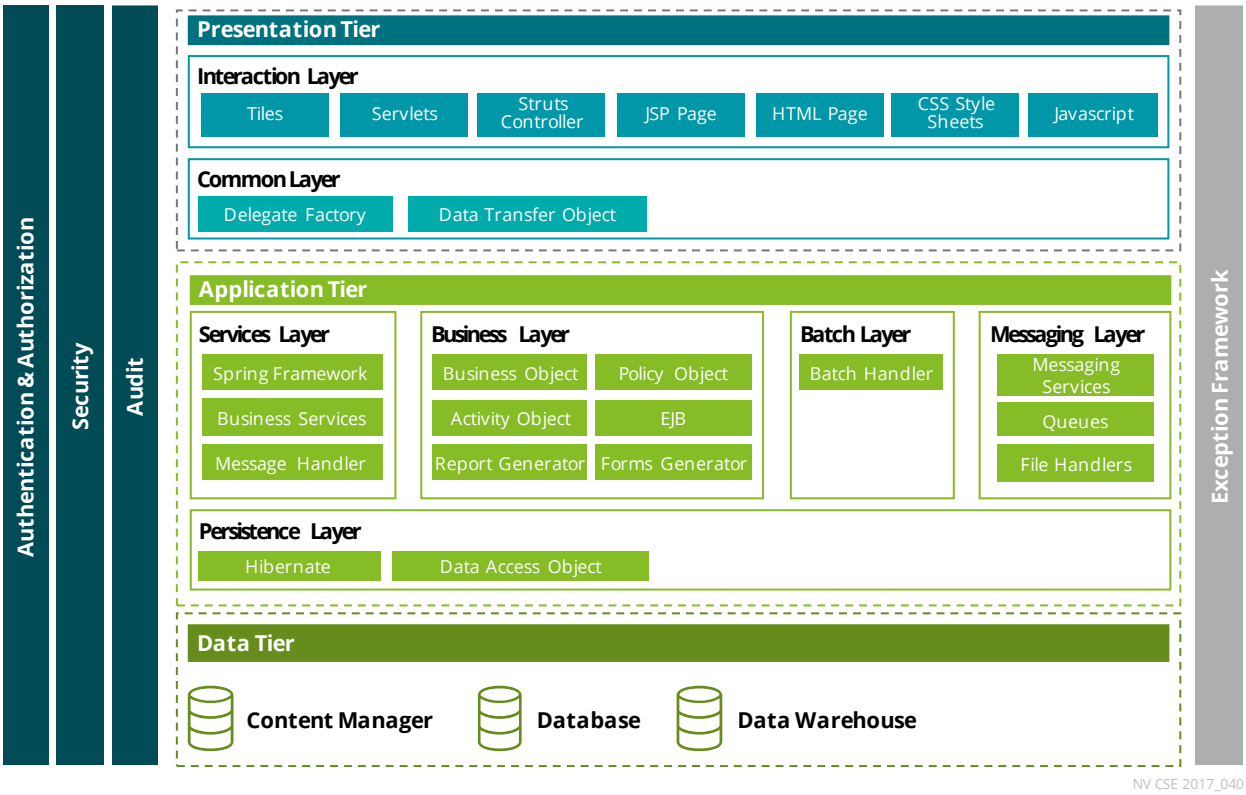

Figure 4-17. The NCSEAS Technical Architecture separates the presentation, application, and data tiers to provide scalability, flexibility, and cost-effective future capacity planning.

Please reference Section V: 3.3.3 Tiered and Modular Architecture for additional details of our recommended architecture for NCSEAS, which is to be finalized in consultation with DWSS technology stakeholders.

A number of other activities are completed throughout the NCSEAS design activities to further assist with the future capacity planning of the system:

- ***We consider metrics in the existing system and translate those into what is needed for the future system based upon the outcome of the requirements confirmation and fit/gap processes.***
- ***We consider our experiences in Florida, Oregon, and Pennsylvania to inform capacity projections for the NCSEAS system in Nevada; in particular, expected comparative growth in caseload and case management activities***
- ***We consider which tiers may need to be scaled and by how much***
- ***We use initial performance testing and proofs-of-concept within the development environment to provide initial insight into expected levels of performance***

4.9.2.2 Execute the Approved System Capacity Plan

Once approved by DWSS and the designated stakeholders, the System Capacity Plan establishes the baseline for the memory, computing power, data storage and other capacity metrics for NCSEAS. This plan is leveraged, updated and confirmed throughout the design, development, testing, and implementation activities. Successful execution and final completion of the System Capacity Plan occurs in conjunction with the start of system testing of the new NCSEAS solution.

4.9.3 Deliverables

4.9 SYSTEM CAPACITY PLAN

4.9.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.9.3.1	System Capacity Plan	4.9.2.1	10
4.9.3.2	Successful Execution of the System Capacity Plan	4.9.2.2	10

Deliverable	*Confirmation of Review Time*
System Capacity Plan	***10 days***
Successful Execution of the System Capacity Plan	***10 days***

The following is a small sample of one section of our capacity plan for data growth. Similar tables are provided for Memory, CPU for servers needed by the NCSEAS solution.

OLTP Database (All Environments)				
Area	Description	Current Size	Expected Increase for Report Period	Estimated Total Size
OLTP Database	Will there be any growth to the current size of the OLTP database?	Development		
		Integration Test		
		System Acceptance Test		
		Load Test		
		Test for Production		
		Training		
		Production		

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Figure 4-18. Sample section of a capacity plan.

4.10 Development Hardware and Software Purchase Plan

4.10.1 Objective

4.10 DEVELOPMENT HARDWARE AND SOFTWARE PURCHASE PLAN

4.10.1 Objective

The Implementation Contractor will prepare and update as required a Development Hardware and Software Purchase Plan for the project.

The establishment of a detailed Development Hardware and Software Purchase Plan helps our team provide the right hardware and software supporting the required development environment at the right time for the project. Procuring hardware and software often requires a detailed understanding of vendor-specific licensing. For example, IBM uses a concept known as Processor Value Units, referred to as "PVUs", when determining licensing requirements for multi-processor and/or virtualized servers. Our Global Alliance with IBM has provided us with PVU calculators that help us assist DWSS in procuring and verifying the correct licensing to align with the development and other environment needs for the NCSEAS project.

We plan to use Server Virtualization on this project. Virtualization can sometimes require unique licensing agreements due the variations in physical and virtual server configurations on which the software is installed. Our experience on other projects such as Florida and Oregon helps DWSS navigate these procurement requirements. We create and update, as required, a Development Hardware and Software Purchase Plan for the project. We have

provided the sizing documents from IBM in Section XI: Other Informational Material, 11.1 NCSEAS Hardware and Software, for your reference.

4.10.2 Activities

4.10 DEVELOPMENT HARDWARE AND SOFTWARE PURCHASE PLAN	
4.10.2	Activities
4.10.2.1	Develop a Development Hardware and Software Purchase Plan which will:
A.	Identify the needed hardware, software, and communications components for the various environments needed for the development phase.
B.	Describe the procurement steps the CSEP will take to authorize and affect the purchase, delivery, and installation of the hardware and software.
C.	Establish the maintenance arrangements needed to assure continuous operations.
D.	Provide cost estimates for A, B, & C
4.10.2.2	Execute the approved Development Hardware and Software Purchase Plan successfully.

4.10.2.1 Develop a Development Hardware and Software Purchase Plan

Identifying Hardware, Software, and Communications

During the development phase of the project, we identify the hardware, software and other infrastructure components needed for each development, test, training, and production environment. In the following tables, we provide sample information for hardware, software, and communications components to assist with this procurement.

Hardware name	Environment	License count	License metric
IBM Power8 based AIX server	Development	1	1 Compute Nodes
IBM Power8 based AIX server	Non-production	3	3 Compute Nodes

Table 4-6. Hardware sample table.

ID	Software product	Environment	vCPU quantity	PVU count
1	IBM DB2 Enterprise Edition	Development	6	520
2	IBM Tivoli Workload Scheduler	Development	4	280

Table 4-7. Software PVU sample table.

ID	Software product	Number of users	License type
1	Selenium	50	Open Source
2	JMETER	5	Open Source

Table 4-8. Software User sample table.

ID	Software name	Environment	Quantity	License type
1	SonarQube	Development	1	Open Source
2	Jenkins	Development	1	Open Source

Table 4-9. Software server-based sample table.

ID	Software name	Environment	Quantity
1	Cisco Router	All	1
2	1 GB Up/Down Connection	All	1

Table 4-10. Communications Components Sample Table.

There are a number of inputs that we use in creating this plan including the System Capacity Plan described in Section VI: 4.9 System Capacity Plan and our vendor alliances and sizing spreadsheet to understand vendor specific licensing and sizing. We work in collaboration with DWSS to understand existing procurement mechanisms that might already be established in order to facilitate the purchase of the necessary infrastructure components for NCSEAS.

Describing Procurements Steps

As part of our Development Hardware and Software Plan deliverable and steps outlined in the work plan, we describe the steps that DWSS must take to authorize and initiate the purchase, delivery and installation of hardware, software and infrastructure components, first for the Development environment but ultimately for each of the environments required for the NCSEAS project. To do this, we work with DWSS to obtain documentation and understand the steps that need to be followed for procurements. We combine this with our understanding of how procurements have been completed in the past with other vendors.

We create a flow diagram to describe the procurements steps along with notes that specifically describe each action that needs to be taken, who needs to take the steps, when the step needs to be completed and any dependencies that may exist.

Establishing Maintenance Arrangements

Hardware and software requires regular maintenance. This includes patching firmware, upgrading software versions and more. We work with DWSS to understand existing maintenance windows and timeframes. We also compare this against the overall project plan to understand what arrangements need to be made to maintain the system and when these maintenance activities must occur.

Maintenance may also have considerations in terms of procurement. Sometimes it is appropriate to procure "software assurance" that allow you to upgrade to new versions of a piece of software as they come out. We document our recommendation on when to do this as part of the Development Hardware and Software Purchase Plan.

Estimate Costs

Our Development Hardware and Software Purchase Plan includes detailed cost estimates for each of the required development, test, training, and production environments supporting the implementation of the new NCSEAS solution. Cost estimates include the full scope of required costs for initial purchase/procurement as well as ongoing maintenance for each component. We have provided an initial, detailed estimate for the proposed hardware/software configuration for each environment in Section XI: Other Informational Material, 11.1 NCSEAS Hardware and Software, for your reference. These estimates are further updated and refined as the Development Hardware and Software Purchase Plan is completed during project execution, in collaboration with DWSS stakeholders

4.10.2.2 Execute the Approved Development Hardware and Software Purchase Plan

Once approved by DWSS and the designated stakeholders, the Development Hardware and Software Purchase Plan establishes the baseline for the purchase of required hardware and software for the development, testing, training, production, and other environments

required for the NCSEAS project. This plan is leveraged, updated and confirmed throughout the design, development, testing, and implementation activities. Successful execution and final completion of the Development Hardware and Software Purchase Plan occurs in conjunction with the final standup and confirmation of the production environment for the new NCSEAS solution.

4.10.3 Deliverables

4.10 DEVELOPMENT HARDWARE AND SOFTWARE PURCHASE PLAN

4.10.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.10.3.1	Development Hardware and Software Purchase Plan	4.10.2.1	10
4.10.3.2	Successful Execution of the Development Hardware and Software Purchase Plan	4.10.2.2	10

Deliverables	*Confirmation of review time*
Development Hardware and Software Purchase Plan	***10 days***
Successful Execution of the Development Hardware and Software Purchase Plan	***10 days***

4.11 Production Hardware and Software Configuration Plan

4.11.1 Objective

4.11 PRODUCTION HARDWARE AND SOFTWARE CONFIGURATION PLAN

4.11.1 Objective

The Implementation Contractor will prepare and update as required a production hardware and software configuration plan for the project.

A number of different hardware and software technologies are being used for the NCSEAS project. Our experience maintaining the CA CSE system as well as our experience from the Oregon CSE project positions us well to document how to configure the necessary hardware and software for DWSS.

We prepare and update as required a Production Hardware and Software Configuration Plan for the project. The hardware and software packages for this project have a number of configuration options to consider. Getting the different software packages to "talk to each other" in a way that meets Federal and State security requirements can be challenging. We draw from our extensive experience with the CA CSE solution to have the right plan in place to mitigate this challenge.

Deloitte's Technology practice also provides additional resources we will leverage to bring experience integrating tools like the ones being proposed on the NCSEAS project. Across our firm we have implemented Thunderhead and IBM products for many clients. We are able to draw on our experience with these hardware and software packages to avoid wasted time configuring and installing the tools – for NCSEAS in particular we have already installed and integrated these tools and know the best practices for getting the infrastructure up and running.

Our experience in other states allows us to bring leading practices to configure the NCSEAS system as optimally as possible.

SECTION HIGHLIGHTS

Through our experience across hundreds of large application development and systems integration projects in the public sector, Deloitte brings:

- ***Deep experience configuring hardware and software for critical development and test environments installed and managed in partnership with client IT resources.***
- ***Deep experience in the hardware and software technologies being used for this project.***

4.11.2 Activities

4.11 PRODUCTION HARDWARE AND SOFTWARE CONFIGURATION PLAN
4.11.2 Activities
4.11.2.1 Develop a Production Hardware and Software Configuration Plan detailing the specific protocols that will operate the NCSEAS most efficiently in the production environment. The CSEP technology team will facilitate the infrastructure services (e.g., server, storage, and network)
4.11.2.2 Execute the approved Production Hardware and Software Configuration Plan successfully

4.11.2.1 Develop a Production Hardware and Software Configuration Plan

Identify Protocols that Operate NCSEAS Most Efficiently

When documenting the hardware and software configuration needed for the NCSEAS project, there are a number of things to consider:

- ***Security: Security requirements drive the configuration of various parts of the system. For example, we must collectively consider questions such as:***
  - ***Does data need to be encrypted in the database? If so, how is it encrypted and what are the underlying performance implications?***
  - ***Does data need to be encrypted when it is transmitted? If so, how is it encrypted and what are the underlying performance implications?***
  - ***How do we configure our web services to be secure?***
  - ***How are servers "locked down" and access to production servers logged?***

- ***Network: When considering how to configure the network supporting the production NCSEAS application, there are a multitude of questions such as:***
  - ***How must the network be configured? For example, DWSS has to comply with IRS Publication 1075 to house Federal Tax Information (FTI) data. This requires the creation of VLANs.***
  - ***At what speed must the network operate for the software to perform properly?***
  - ***What ports need to be open on routers for hardware/software to communicate with each other, while maintaining security?***
- ***Servers: When determining the configuration of servers, considerations include requirements such as the CPU, memory, and other resources assigned to each server so that it operates and supports required application performance based upon the corresponding installed software.***

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Production Hardware and Software Configuration Plan:

- ***We leverage our knowledge of the CA CSE solution to establish a production configuration against which the specific NCSEAS requirements can be confirmed***
- ***As confirmed during the stand-up of the Oregon environments, we plan to install and configure the production environment well before application rollout so that it can be used for load and performance testing prior to making it available for pilot production***

- ***Software configuration: When looking at the configuration of software, considerations include which software options need to be turned on/off, which communications protocols may need to be enabled for integration requirements, and which types of protocols would best align to application needs (e.g., REST, SOAP).***
- ***Storage: When considering the type of storage required for NCSEAS, we consider how much space needs to be allocated for each server so that it operates properly, the type of storage redundancy that may be required to support recoverability requirements, and the performance implications associated with the speed capabilities for the available storage.***

By thinking through these considerations, we are able to document a detailed Production Hardware and Software Configuration Plan for the servers, storage, network, software and security of NCSEAS. This plan describes how to configure these components most efficiently.

In addition to documenting how to configure the system, we document the specific protocols that operate NCSEAS. This includes the steps that are followed for infrastructure upgrades, operating system patches, network security changes, software package updates. These protocols include when maintenance windows occur and the appropriate level of testing that should be conducted to minimize the impact of infrastructure changes on the system.

4.11.2.2 Execute the Approved Production Hardware and Software Configuration Plan

Once approved by DWSS and the designated stakeholders, the Production Hardware and Software Configuration Plan establishes the baseline for the required detailed configuration

of the production environment required to support NCSEAS to the expected level of performance and capacity. This plan is leveraged, updated and confirmed throughout the design, development, testing, and implementation activities. Successful execution and final completion of the Production Hardware and Software Configuration Plan occurs in conjunction with the final standup and confirmation of the production environment for the new NCSEAS solution.

4.11.3 Deliverables

4.11 PRODUCTION HARDWARE AND SOFTWARE CONFIGURATION PLAN

4.11.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.11.3.1	Production Hardware and Software Configuration Plan	4.11.2.1	10
4.11.3.2	Successful Execution of the Production Hardware and Software Configuration Plan	4.11.2.2	10

Deliverables	*Confirmation of review time*
Production Hardware and Software Configuration Plan	***10 days***
Successful Execution of the Production Hardware and Software Configuration Plan	***10 days***

4.12 Database Development Plan

4.12.1 Objective

4.12 DATABASE DEVELOPMENT PLAN

4.12.1 Objective

4.12.1.1 The Implementation Contractor will prepare and update as required a database development plan for the project.

4.12.1.2 The database development plan shall be compliant with DWSS processes and procedures.

4.12.1.3 The Implementation Contractor shall use all existing processes, standards, policies and procedures as a starting point to ensure compliance.

4.12.1.4 The Implementation Contractor shall apply the guidance stated in 4.12.1.2 and 4.12.1.3 for each and every activity listed in section 4.12.2.

4.12.1.5 If existing processes, policies, standards or procedures do not sufficiently cover the scope of an activity listed in 4.11.2, the implementation vendor shall ensure that any additions and/or changes to process, policy, standard or procedure can seamlessly integrate with existing processes, policy standards and procedures.

4.12.1.6 The Implementation Contractor shall not create processes or procedures that duplicate existing processes and procedures.

4.12.1.7 The Implementation Contractor shall follow the established change control process defined in the change control and issue management plan prior to publishing changes to process, policy, standards or procedures.

Establishing consistent standards and methodologies for building the database helps to ease maintenance of the system in the future.

CSE systems need the ability to accumulate and manage increasing volumes of data. Managing, accessing, and storing this information effectively and efficiently is the goal of a comprehensive database design and development plan. The Database Development Plan outlines the processes and methodologies for establishing a database design for NCSEAS, as

well as the standards for database development, deployment, and ongoing maintenance and operations. The deliverable also outlines roles and responsibilities in database design, development, and deployment. Due to the fact the database already exists as a transfer from the CA CSE system, our team is prepared to have a baseline of this document with a well-defined database design and the process for making necessary DWSS specific customizations to the database to satisfy requirements. We are prepared to update the plan as necessary during the Requirements Elaboration phase and obtain DWSS approval on the standards and methodologies defined in the Database Development Plan.

We acknowledge and confirm that our proposed approach meets the specific objectives for the Database Development Plan as follows:

- ***Our proposed Database Development Plan is compliant with existing DWSS processes and procedures.***
- ***We utilize existing DWSS processes, standards, policies, and procedures as a baseline for our database development activities.***
- ***In the event that existing DWSS processes, standards, policies, or procedures do not address required activities or technologies necessary for the NCSEAS project, we leverage our EVD toolkit and our experience from similar projects to supplement these DWSS artifacts as required. These new or modified processes, standards, policies and procedures are integrated with existing standards as much as possible, and are subject to the review, approval and concurrence of DWSS stakeholders prior to final adoption.***
- ***We do not propose to adopt processes, standards, policies or procedures from our EVD toolkit simply to replace current DWSS artifacts or standards.***
- ***Changes to DWSS processes, standards, policies and procedures are managed using the approved project change control and issue management processes.***

SECTION HIGHLIGHTS

Deloitte's approach to database design and development contains the following features:

- ***Deloitte's knowledge of the California and Oregon solutions reduces the amount of time needed to understand and analyze the transfer data model***
- ***Deloitte proposes utilizing the Erwin Data Modeling tool, an industry leading database design studio, for documenting and reviewing the data model***
- ***Collaboration with the DWSS database stakeholders is emphasized throughout design and development with multiple review and checkpoints***

4.12.2 Activities

4.12 DATABASE DEVELOPMENT PLAN	
4.12.2	Activities
4.12.2.1	Develop a Database Development Plan which will:
A.	Establish the standards and methodology for database development, deployment, operations, and maintenance.
B.	Specify the methodology and rules for determining and documenting entity relationships.
C.	Describe the procedures for developers to use to identify new database tables and new or revised columns on existing database tables.
4.12.2.2	Execute the approved Database Development Plan successfully.

4.12.2.1 Develop Database Development Plan

Establish Database Standards and Methodologies

The CA CSE system uses specific standards for the database that support the application and we use these standards as a baseline for the database standards for NCSEAS. As part of our Database Development Plan, we document these standards and the methodology for database development, deployment, operations, and maintenance. Our EVD methodology provides a detailed set of processes, templates, and accelerators for database development. We combine these standards with the modified database development standards we have put in place and are maintaining and developing for the California and Oregon solutions. This allows us to provide a detailed base of standards for review with DWSS SMEs. In our review sessions with DWSS, we analyze and review the database-related processes as we tailor them to meet the unique needs of NCSEAS. Once we have agreed upon standards, we work to finalize the standards and publish the Database Development Plan.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Database Development Plan:

- ***As an element of our NCSEAS project toolkit we leverage baseline database standards evolved from the original California requirements and tailored to align to the specific needs of a transfer solution***
- ***We further align these baseline standards with existing State standards to confirm that the specific needs of a California-based system are addressed while at the same time aligning to established DWSS requirements***

There are a number of types of naming standards to consider for database development. The following graphic describes the type of Database Objects that exist. We provide base standards from our experience working on similar solutions but work with DWSS to create unique naming standards for each of these object types. Examples of naming standards include the following:

- ***Tables – singular name, pascal casing, indicate the environment in the prefix of the name***
- ***Columns – singular name, pascal casing***
- ***Indexes – use a prefix, table name and description***

In addition to standards, we provide the methodology used to maintain databases. This includes an overview of the maintenance process along with process flows that document how this occurs. The following is an example of what one of these process flows might look like. We tailor this flow for DWSS specific processes.

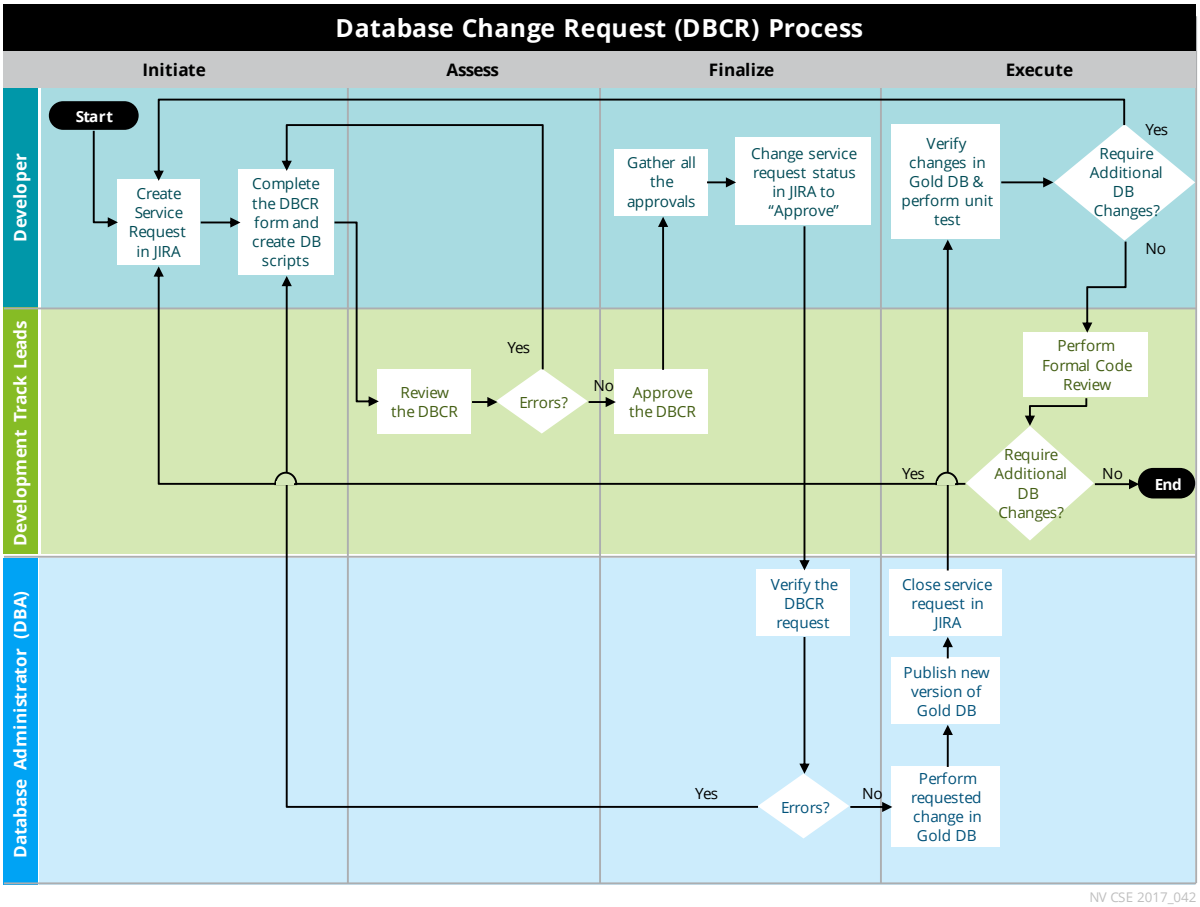

Figure 4-19. Our database development plan documents process flows to be followed for maintaining the database.

The proposed database software for NCSEAS is IBM's DB2 Advanced Enterprise Server Edition that is also utilized in the CA CSE system. The CA CSE data model features over 650 tables, providing a proven foundation for NCSEAS. As the current vendor supporting the California solution, our team has an in-depth knowledge of the existing data model and how to effectively incorporate database changes that may be required to meet the specific needs of the NCSEAS solution. Our team can also build upon our extensive experience designing and developing complex databases for child support systems in Florida, Kentucky, Oregon and Pennsylvania.

The Database Development Plan deliverable is submitted as part of the design phase with sections such as those listed in the following table. The document outlines the processes, standards, and methodologies for database design and deployment. The deliverable outlines roles and responsibilities and is used as a reference guide for developers. The remainder of this subsection outlines Deloitte's approach and tools for database design and development.

Deliverable Section	*Description*
Database Design Process	• ***Procedures for identifying and documenting database entities and attributes during design*** • ***The process and timeline for creation of Entity Relationship Diagram deliverables during the design phase (from the conceptual data model through the physical data model)*** • ***Tools utilized during the design phase for recording and modeling the database design*** • ***The process to support database changes identified after the design phase***
Roles and Responsibilities	• ***Expectations for our team during database design, development, and deployment*** • ***Review processes and procedures for DWSS stakeholders and other vendors during database design***
Database Standards	• ***Key non-functional considerations (e.g., normalization, performance, that are considered during design)*** • ***Documented procedures for identifying any modifications to database tables (including the need for new database tables or revised columns in existing tables)*** • ***Database naming standards***
Database Deployment Procedures	• ***The processes and roles required to support the deployment of the database as part of an overall NCSEAS application deployment and/or as a standalone database update***
Maintenance and Operations	• ***Proposed process for designing database changes after the production deployment***

Table 4-11. Sample sections to be included within the Database Development Plan.

Specify Methodology and Rules for Entity Relationships

Entity relationships are documented in the Entity Relationship Diagram (ERD) that provides the baseline for the logical and physical data models for the NCSEAS solution. As part of the Database Development Plan, we document the Methodology and Rules for determining and documenting entity relationships within these models. The CA CSE system uses a data model that incorporates concepts such as one-to-one (1-1) and one-to-many (1-M) relationships. Primary and foreign keys are used to enforce referential integrity. This data model is the starting point that we use to modify the database for DWSS and the NCSEAS solution. The following figure is an example of documentation that our EVD methodology provides for making changes to the base CA CSE data model, procedures for which are included within the Database Development Plan.

Figure 4-20. Example Entity Relationship Design Process.

Our plan also describes the tools that are used to update the ERD, how impact analysis is performed, and how to properly provide entity and attribute names to the ERD.

Describe Procedures for Database Maintenance

The ERD is used to visually depict the database and helps in the analysis of the database design. Once the team has constructed the ERD, the tool also allows the team to generate a logical data model and a physical data model. Our methodology asks our team to consider a number of questions when designing the logical and physical data model and specifically when new tables need to be created versus adding required columns to existing tables. Some considerations for deciding whether a new table/column is needed include:

1. ***Does the model satisfy user requirements?***
2. ***Is the data within the model redundant?***
3. ***Is the model independent of underlying RDBMS software?***
4. ***Does the model contain the needed reference tables for defining business needs?***
5. ***Is the design and/or physical configuration of the database adequate to support expected NCSEAS performance?***

Our plan describes how to create these design documents, the review process for these design changes, and the approval process for changes.

4.12.2.2 Execute the Approved Database Development Plan

Once approved by DWSS and the designated stakeholders, the Database Development Plan establishes the baseline for the design and establishment of the required database components for the NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, testing and implementation activities. Successful execution and final completion of the Database Development Plan occurs in conjunction with the start of system testing for the new NCSEAS solution.

4.12.3 Deliverables

4.12 DATABASE DEVELOPMENT PLAN

4.12.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.12.3.1	Database Development Plan	4.12.2.1	10
4.12.3.2	Successful Execution of the Database Development Plan	4.12.2.2	10

Deliverables	*Confirmation of review time*
Database Development Plan	***10 days***
Successful Execution of the Database Development Plan	***10 days***

4.13 Application Development Plan

4.13.1 Objective

4.13 APPLICATION DEVELOPMENT PLAN

4.13.1 Objectives

The Implementation Contractor will prepare and update as required an application development plan for the project.

The Application Development Plan documents required activities, standards, procedures, roles and responsibilities, and other critical topics guiding the development efforts for the

NCSEAS solution. The goal of the Application Development Plan is to establish the processes and procedures to validate that the approved requirements and design of the system are being incorporated into the new solution during the development phase. Prior to the kick-off of the development phase, our Deloitte management team, our Database Administrator (DBA), and our lead developer coordinate with DWSS to complete the Application Development Plan.

The plan includes detailed procedures the development team follows when designing and developing the NCSEAS system, testing the system, creating training materials, and preparing for implementation of the system.

4.13.2 Activities

4.13 APPLICATION DEVELOPMENT PLAN	
4.13.2	Activities
4.13.2.1	Develop an Application Development Plan which will:
A.	Establish the protocols for designing, developing software, testing software, developing training materials, and preparing for implementation.
B.	Create specific tasks to establish unique responsibility for each unit of work.
C.	Describe the methodology to ensure the functional and technical design standards described in the plan align with DWSS
D.	Describe the methodology to ensure the development and unit testing of system objects and the assignment of staff responsibilities to comment on unit testing output for consistency with requirements and for successful completion.
E.	Provide the process used to create user documentation, training materials and standards.
F.	Provide details of operational procedures and system development standards for consistency and compliance with DWSS' methodology.
4.13.2.2	Execute the approved Application Development Plan successfully.

4.13.2.1 Develop Application Development Plan

Establish Protocols for the SDLC

The technical lead, lead developer, and implementation lead are responsible for establishing the protocols for designing, developing, and testing the NCSEAS software components. This team works collaboratively with you to establish and confirm these procedures during project start-up. This response provides a baseline that feeds into the establishment of the overall Application Development Plan. Deloitte and DWSS benefit from this collaborative agreement on protocols and standards by setting expectations and having open communications that leads to less risk for a clearly defined Software Development Lifecycle (SDLC).

Assign Tasks for Each Unit of Work

We agree to create a plan that assigns individual tasks to establish unique responsibility for each unit of work. The tasks are created and assigned through our PMC or equivalent toolset. This activity is documented in our work plan.

Functional and Technical Standards

Our team believes that setting standards prior to the start of development efforts assist in the success of the overall system construction, as standards can be referenced and closely monitored throughout the development process. Functional design, technical design, and development standards are outlined in detail in the Application Development Plan. Functional design standards are documented, monitored, and the responsibility of our management and initiative team. Technical design and development standards are defined, supervised, and the responsibility of our technical architect and development lead.

Development standards as they pertain to the following four areas are provided:

- ***Coding conventions and standards***
- ***Internal documentation conventions and standards***
- ***Object and module naming conventions and standards***
- ***Unit testing conventions, standards, and checklists***

Both existing standards and standards which are developed during the development phase are included in detail for the above four areas. For pending standards, information regarding how these standards are developed, who develops them, and what the time frame is for their development is outlined in the plan.

Our team uses the experience we have working with DWSS as well as our work on other CSE and HHS projects across the country to develop our recommended standards. These standards are developed, recorded, and then discussed with DWSS collaboratively to gain buy-in or make any necessary modifications. It is important to stakeholders and the overall project health to have Deloitte and DWSS understand and agree to the development standards prior to beginning the development phase. Once we agree to these standards, they are communicated to the development team, and followed throughout the development phase.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Application Development Plan:

- ***We have tailored a draft Application Development Plan specific to the requirements of the CA CSE solution that has been incorporated into our EVD-based NCSEAS toolkit***
- ***The draft Application Development Plan is further tailored to the specific task needs for the project as defined in the RFP as well as existing Application Development standards maintained by DWSS***

Development and Unit Testing with Assignments

Together with our lead developers and DBA, the management team comprehensively documents the approaches to both development and unit testing in the Application Development Plan. The normal process begins with the development lead creating and assigning development tasks to the development team. Once the work is assigned and a due date is provided to the development team, the development lead holds internal meetings and monitors reports generated out of PMC or an equivalent tool to validate the tasks are being completed on schedule. At the conclusion of developing the code per the task, there are a number of steps taken to promote quality. This begins with the developer unit testing their code and having the functional lead or architect review the results, having peer developers review the code and provide feedback, and having the architect review the code based on complexity. A number of these steps and the responsible party are detailed in the following table.

Development task		*Responsible party*
1	*Review approved requirements and system design documentation*	*Development Team*
2	*Complete code development*	*Development Team*
3	*Complete applicable code review checklist(s)*	*Development Team*
4	*Review code review checklist(s)*	*Lead Developer, Technical Architect, and DBA*

Development task		*Responsible party*
5	*Update code from code review checklist findings*	*Development Team*
6	*Review and sign-off on code review checklist(s)*	*Lead Developer, Technical Architect, and DBA*
7	*Complete peer review*	*Development Team*
8	*Update code from peer review findings*	*Development Team*
9	*Conduct unit testing and complete unit test document*	*Development Team*
10	*Review unit test document and conduct internal development testing*	*Initiative Lead*
11	*Update code from internal development testing findings*	*Development Team*
12	*Update unit test document*	*Development Team*
13	*Review and sign-off on unit test document*	*Initiative Lead*

Table 5-13. Development and unit test assignments.

Development of User Documentation and Training Material Standards

Our management team works collaboratively with DWSS to dictate the procedures to follow when creating comprehensive documentation and training material in the Application Development Plan. Our development lead and team maintain responsibility for the creation and maintenance of the user documentation and training material. After internal review by the Deloitte management team, subject matter experts review the training material and user documentation produced by our team prior to publication to verify the quality and completeness of the information. Please refer to Section VI: 4.31 Training for details on the development of user documentation and training materials.

Compilation of System Development Standards and Operational Procedures

The Application Development Plan also contains details around the system development standards and operational procedures for the NCSEAS project. The lead technical architect, lead developer, and Deloitte management team document the necessary system development standards as they pertain to the successful completion of the development phase of the NCSEAS project. The technical architect is responsible for consistently monitoring these standards and making required updates so that the standards remain complete and applicable. The technical architect also enforces the adherence of the operational procedures across the project team. These standards and procedures are refined and confirmed in collaboration with DWSS stakeholders to verify compliance as needed with existing DWSS procedures and methodologies.

4.13.2.2 Execute the Approved Application Development Plan

Once approved by DWSS and the designated stakeholders, the Application Development Plan establishes the baseline for the development and testing of the new NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, and testing activities. Successful execution and completion of the Application Development Plan occurs in conjunction with the production implementation of the new NCSEAS solution.

4.13.3 Deliverables

4.13 APPLICATION DEVELOPMENT PLAN

4.13.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.13.3.1	Application Development Plan	4.13.2.1	20
4.13.3.2	Successful execution of the Application Development Plan	4.13.2.2	10

Deliverables	*Confirmation of review time*
Application Development Plan	***20 days***
Successful execution of the Application Development Plan	***10 days***

4.14 Ease of Use Management Plan

4.14.1 Objective

4.14 EASE OF USE MANAGEMENT PLAN

4.14.1 Objective

The Implementation Contractor will prepare and update as required an ease of use management plan for the project.

NCSEAS is a modern automated child support system that transforms how Nevada child support workers manage their caseloads. With a modern look and feel, it affects many of the routine actions that workers are currently tasked to do. Workers are freed from the need to memorize and access a number of codes and screens, and instead can focus on using the information in the system to make effective decisions and improve Nevada's child support performance measures. In order to make this shift, staff need to feel comfortable in the new paradigm. A quality user interface can make using the NCSEAS system more intuitive. The more consistent the user interface, the less a user must learn when using NCSEAS.

Our team creates an Ease of Use Management Plan to support the consistent design of the screens within the NCSEAS system. The plan documents the ease of use principles for designing the system. During acquisition and initial implementation of the core system for NCSEAS, the CA CSE system, the Ease of Use Management Plan is initially based upon the existing ease of use principles of that system. As the California system is reviewed through the requirements elaboration phase, modifications to the Ease of Use Management Plan are made to adjust to user interface changes that may be incorporated during the design phase to meet specific NCSEAS requirements. Our team also establishes processes so that our functional design staff can use these principles to design new screens that may be required for the NCSEAS solution. As part of our design review, development, and testing, we cross-reference the actual system components to the Ease of Use Management Plan to confirm compliance and consistency.

4.14.2 Activities

4.14 EASE OF USE MANAGEMENT PLAN
4.14.2 Activities
4.14.2.1 Develop an Ease of Use Management Plan which will specify the ease of use principles the Implementation Contractor will use in the application and the protocols to ensure functional design staff apply these principles consistently throughout the application. At a minimum, the ease of use principles shall include outlined in Attachment M, Implementation Vendor Requirements.
4.14.2.2 Execute the approved Ease of Use Management Plan successfully.

4.14.2.1 Develop Ease of Use Management Plan

Specify Ease of Use Principles and How They are to be Applied

Our Ease of Use Management Plan details user interface design protocols to be followed to create a consistent design across a system. This document aligns the user interface development patterns across child support enforcement modules for a consistent look and feel throughout the NCSEAS system. The current CA CSE system is a user-friendly solution, and the existing User Interface (UI) and the corresponding UI standards for the California system are leveraged as the baseline for the NCSEAS solution. In addition, the management plan encompasses the Ease of Use principles referenced within RFP Attachment M. As confirmed within Section X: Requirements Matrix, the set of Ease of Use requirements documented in Attachment M are met by the CA CSE system, although specific modifications may be required to align with DWSS-specific requirements.

The user interface design standards defined in the Ease of Use Management Plan are created by qualified Deloitte designers with User Experience knowledge and training. Designs created by our team during the design phases of the NCSEAS project are compared against the Ease of Use Management Plan during document design reviews. By doing so, the screens throughout the NCSEAS system screens have a consistent look and feel.

There are several components documented in the Ease of Use Management Plan, including but not limited to:

Ease of use component	*Description*
Screen component standards	***Standards for screen size, field labels, fonts, editable fields, radio buttons, checkboxes, calendar controls, and numeric fields.***
Menu standards	***Standards for menu styles as well as the appearance and functionality of menu entries.***
Banner styles	***Standards for the style of banners in the application for headers and footers.***
System interaction	***Standards for how a user interacts with the system, such as selecting one component, or multiple components.***
Accessibility	***Standards for accessibility to achieve Americans with Disabilities Act (ADA) compliance.***
Screen prototypes	***Standards for different types of screens such as Data/Record Summary Screen, Data Entry Screens, View Screens, Search Pages, and Search Results Pages.***

Table 4-12. Application Development Plan.

Our experience implementing and maintaining child support enforcement systems helps our team to understand the variety of types of screens, types of components, and types of interaction that are required for a usable child support enforcement system. For example, when designing a search screen for members, we know what data must be searched and what data should be seen in the search results. This uniquely positions us to create an Ease of Use Management Plan that considers the specific needs of each child support enforcement module.

In addition to required text documentation, our Ease of Use Management Plan provides graphics to help clarify our standards. Following are two examples of what these graphics might look like, including a style guide developed with the CA CSE solution as a baseline.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Ease of Use Management Plan:

- ***Our Deloitte Digital (DD) practice helped the State of Oregon establish and updated User Interface for the CA CSE solution***
- ***DD conducted an extensive discovery phase to focus on the user's experience, engagement with the system, and other day-to-day user issues before producing distinct personas, a UI architecture, wireframes, and style guides that were used to implement the new UI***

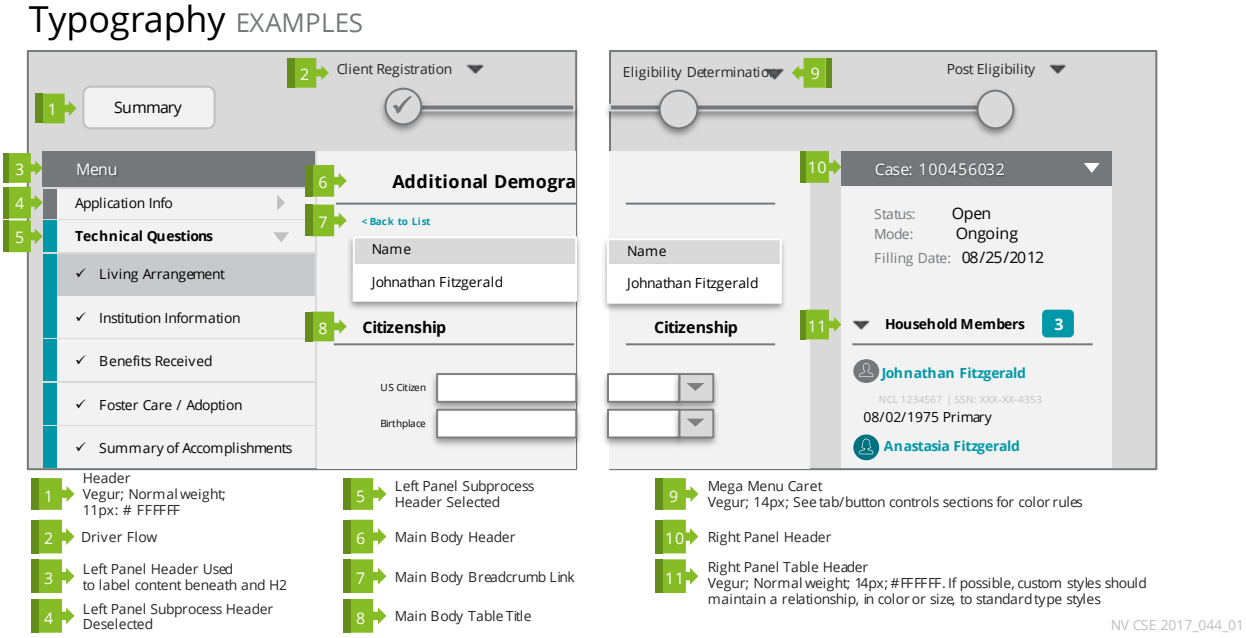

Figure 4-21. We illustrate our standards in our Ease of Use Management Plan.

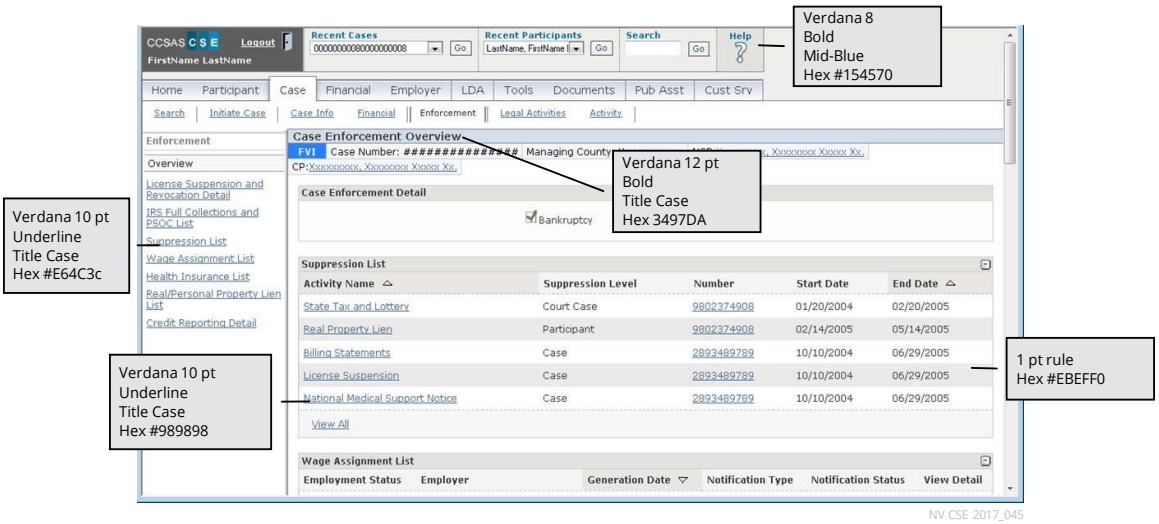

Figure 4-22. Descriptive pictures capture the standards outlined in the Ease of Use Management Plan.

To enforce the user interface standards of the NCSEAS system, our team utilizes compliance checklists during the development phase such as the following figure. The checklist is referenced prior to and during development, and completed by the assigned developer once the development for a screen is completed. The filled out compliance checklist is then reviewed by our team leads, as well as our technical architect for compliance against our standards as documented in the Ease of Use Management Plan.

Style Guide Checklist			
Project Name:	<Enter the project name>	**Reviewer:**	<Enter the reviewer's name>
Project ID:	<Enter the project ID>	**Date:**	<Enter date, dd-mmm-yyyy>
Artifact Title:	<Enter the artifact title>	**Version:**	<Enter the version number>

General Notes:
This Checklist is aligned with the guidelines documented within the Style Guide Guideline document and is used during the review process to validate adherence.

#	Item/Description	Status	Comments
	Industry Standards		
1	Artifacts support Internet Explorer 7.0 or higher or Mozilla Firefox 2.0 or higher		
2	Standard screen resolution is 1024 x 768		
3	All layouts should be liquid in nature		
4	User can navigate back and forth between the page elements using the TAB and the SHIFT + TAB without mouse intervention; Should follow the Tab order of left to right , top to bottom		
5	Table data which contains sort feature should have the ability to sort in ascending order or descending order on a particular column. If Sort feature is not part of the requirement or design, this checklist item does not apply.		
6	The column that is currently sorted has a down arrow next to the field		
7	Columns that can be sorted have a right arrow symbol near them		
8	Only one column can be sorted at a time		
9	Entire result set, not just result set seen by the user, is sorted		

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Figure 4-23. Sample Style Guide Checklist used during the development phase.

The usefulness of the Ease of Use Management Plan does not end after development. The document is also helpful during testing of the NCSEAS application, and can be referenced for compliance. Additionally, once the maintenance and operations of the NCSEAS system are transitioned away from our team, the Ease of Use Management Plan can support future enhancements that are required for the NCSEAS system to continue to be in compliance.

4.14.2.2 Execute the Ease of Use Management Plan

Once approved by DWSS and the designated stakeholders, the Ease of Use Management Plan establishes the baseline for the user experience design and development of the new NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, and testing activities. Successful execution and completion of the Ease of User Management Plan occurs in conjunction with the production implementation of the new NCSEAS solution.

4.14.3 Deliverables

4.14 EASE OF USE MANAGEMENT PLAN

4.14.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.14.3.1	Ease of Use Management Plan	4.14.2.1	10
4.14.3.2	Successful Execution of the Ease of Use Plan	4.14.2.2	10

Deliverables	*Confirmation of review time*
Ease of Use Management Plan	***10 days***
Successful Execution of the Ease of Use Plan	***10 days***

4.15 Database Configuration Management Plan

4.15.1 Objective

4.15 DATABASE CONFIGURATION MANAGEMENT PLAN

4.15.1 Objective

4.15.1.1 The Implementation Contractor will prepare and update as required a database configuration management plan for the project.

4.15.1.2 The database configuration management plan shall be compliant with DWSS processes and procedures.

4.15.1.3 The Implementation Contractor shall use all existing processes, standards, policies and procedures as a starting point to ensure compliance.

4.15.1.4 The Implementation Contractor shall apply the guidance stated in 4.15.1.2 and 4.15.1.3 for each and every activity listed in section 4.15.2.

4.15.1.5 If existing processes, policies, standards or procedures do not sufficiently cover the scope of an activity listed in 5.15.2, the implementation vendor shall ensure that any additions and/or changes to process, policy, standard or procedure can seamlessly integrate with existing processes, policy standards and procedures.

4.15.1.6 The Implementation Contractor shall not create processes or procedures that duplicate existing processes policies and procedures.

4.15.1.7 The Implementation Contractor shall follow the established change control process defined in the change control and issue management plan prior to publishing changes to process, standards or procedures.

Deloitte has deep experience in the management of Configuration Items (CIs) for large-scale system implementations in states such as Florida and Pennsylvania. This required the documentation and strict adherence to processes for maintenance of database configuration. We developed standards from this experience of managing CIs across different work streams in various logical environments. These detailed base standards

allow us to accelerate the management of CIs for DWSS. Accordingly, we are well-prepared to deliver a Database Configuration Management Plan and deploy according to the plan for DWSS on the NCSEAS Project.

DWSS must manage and deploy database CIs created during the lifecycle of the project. These CIs include the structure of the Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) databases, reference data, stored procedures, and the database software. The CIs are deployed and maintained across the various logical environments of the project by the Database Administrator (DBA) and the development team.

The Database Configuration Management Plan provides the definition of Deloitte's configuration management methodology used to build and deploy CIs. In addition, the tools used for the build and deployment processes and the roles and responsibilities for the parties involved are described in the plan. The plan details the steps for deploying database configuration items from lower to higher environments and the approach for database software upgrades. We prepare and update as required a Database Configuration Management Plan for the project.

SECTION HIGHLIGHTS

Deloitte's approach to database configuration contains the following features:

- ***Experience from managing complex solutions in Florida and Pennsylvania provides established standard to manage configuration items and handled database configuration across various logical environments***
- ***Utilizing Liquibase, a leading configuration management tool, for database configuration activities***
- ***Collaboration with DWSS SMEs allows Deloitte to leverage our experience from previous database implementations to tailor the processes to meet the needs of DWSS stakeholders***

We acknowledge and confirm that our proposed approach meets the specific objectives for the Database Configuration Management Plan as follows:

- ***Our proposed Database Configuration Management Plan is compliant with existing DWSS processes and procedures.***
- ***We utilize existing DWSS processes, standards, policies, and procedures as a baseline for our database configuration management activities.***
- ***In the event that existing DWSS processes, standards, policies, or procedures do not address required activities or technologies necessary for the NCSEAS project, we leverage our EVD toolkit and our experience from similar projects to supplement these DWSS artifacts as required. These new or modified processes, standards, policies and procedures are integrated with existing standards as much as possible, and are subject to the review, approval and concurrence of DWSS stakeholders prior to final adoption.***
- ***We do not propose to adopt processes, standards, policies or procedures from our EVD toolkit simply to replace current DWSS artifacts or standards.***
- ***Changes to DWSS processes, standards, policies and procedures are managed using the approved project change control and issue management processes.***
- ***As we develop and deliver the Database Configuration Management Plan, we collaborate with key stakeholders to review existing DWSS processes. We encourage feedback and***

update the deliverable during the creation and review leading to the submission of the plan.

4.15.2 Activities

4.15 DATABASE CONFIGURATION MANAGEMENT PLAN
4.15.2 Activities
4.15.2.1 Develop a Database Configuration Management Plan which will:
A. Address the update of database tables, parameter tables, and software objects across the multiple development, training, testing, and production environments.
B. Establish control processes project staff will use in order to migrate the database entities to multiple environments.
C. Describe the procedures for developers to use to establish parameter tables.
D. Register any scripts used as software objects and establish them to be under system configuration control.
E. Establish the control process the project staff will use to migrate parameter data to multiple environments.
F. Describe the procedures developers will use to identify new objects to the system, document the object's purpose, and support object-naming conventions.
G. Establish the control process the project staff will use to migrate software to multiple environments.
H. Establish an audit trail to maintain a full history of software objects for each environment.
I. Provide for daily and on-demand software migration. The plan will provide for linking software objects to testing results.
J. Identify any software the NCSEAS project needs to develop or applications the NCSEAS project needs to acquire to automate the configuration management process.
4.15.2.2 Execute the approved Database Configuration Management Plan successfully.

4.15.2.1 Develop Database Configuration Management Plan

Updating Tables in Multiple Environments

The Database Configuration Management Plan identifies the approach for updating database and database-related software objects across the multiple development, training, testing, and production environments. Procedures and roles and responsibilities for these activities are defined within the plan covering the full spectrum of migration activities related to the database and associated software components.

The plan also describes the process for maintaining the ERD, which includes the conceptual data model, the logical data model, the physical data model, and the data dictionary.

Establish Control Processes to Migrate Database Entities to Multiple Environments

The Database Configuration Management Plan details the process for migrating database entities through environments. The proposed database configuration software for NCSEAS is Liquibase which allows our team to effectively work with DWSS to manage entities and CIs across logical environments. The Database Configuration Plan describes the Database Change Request (DBCR) review and approval process. It lists the steps used by developers, development track leads, and the DBA to deploy approved database changes to various logical environments.

Procedures to Establish Parameter Tables

The creation and maintenance of parameter tables is essential to the ongoing maintenance of data for DWSS. The Database Configuration Management Plan identifies our established procedures for developers to establish parameter tables.

Register Scripts as Software Objects and Establish System Configuration Control

The process to use different scripts to manage CIs is included in the Database Configuration Management Plan. This includes the process for creating and updating database structures, which are defined and modified via Data Definition Language (DDL) scripts. The process to create and update reference data is accomplished through Data Manipulation Language (DML) scripts.

Control Processes to Migrate Parameter Data to Multiple Environments

As parameter data is identified as necessary for the project, it may need to be migrated between environments to establish consistent behavior. Processes are collaboratively defined between Deloitte and DWSS and documented in the plan to establish a standard process that is followed by developers. The process includes identifying issues with the expected changes and mitigating such issues before implementation. By documenting and following the same process, developers are able to communicate changes and pro-actively prepare the environment. This decreases the amount of risk as parameter data is migrated between environments.

Procedures to Identify New Objects and Document Object Purpose

When a new database object is identified in the system, developers must have the same understanding of the properties of the respective object. This ranges from the name of the object to the purpose of the object and the naming conventions for the object. The Database Configuration Management Plan identifies a set of instructions for these items regarding new objects and the modification of current objects.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Database Configuration Management Plan:

- ***As an element of our NCSEAS project toolkit we leverage baseline configuration management standards evolved from the original California requirements and tailored to align to the specific needs of a transfer solution***
- ***These configuration management standards address baseline database components and objects as well as related software components***
- ***This was also a lesson-learned from our work on the Oregon CSEAS 2.0 project, specifically, that configuration management for database and related software components had to be tightly integrated to help establish a strong process for system migrations***
- ***We further align these baseline standards with existing State standards to confirm that the specific needs of a California-based system are addressed while at the same time aligning to established DWSS requirements***

Control Processes to Migrate Software to Multiple Environments

As software components for the NCSEAS solution are developed, configured, or otherwise established during the project, those components may be built and/or migrated between environments. Processes are collaboratively defined between Deloitte and DWSS and documented in the plan to establish a standard process that is followed by developers. The process includes identifying issues with the expected changes and mitigating such issues before implementation. By documenting and following the same process, developers are able to communicate software changes and pro-actively prepare the environment. This decreases the amount of risk as software is migrated between environments.

Establish Audit Trail for Software Objects for Each Environment

An audit trail is essential to understand how software objects are maintained and updated in each environment. The use of an audit trail is detailed in the Database Configuration Management Plan. The audit trail maintain a full history of an object to include creation, modification, and (if applicable) deletion of corresponding database objects for each environment. The Database Configuration Management Plan identifies key items proposed by Deloitte and agreed upon with DWSS SMEs to track items such as the user who made a change and the time and associated reason for the modification.

Daily and On-demand Software Migration

Developers need to migrate software between environments throughout the lifecycle of the project. These migrations may be scheduled or on-demand. When migrations are necessary, the developer must be able to follow an established process for the migration. The Database Configuration Management Plan provides an established process which is reviewed and agreed upon between Deloitte and DWSS for database-related migrations during the NCSEAS project. Details associated with migrations such as the following are provided in the plan:

- ***Reason for migration***
- ***Migration steps***
- ***Configuration and build dependencies***
- ***Escalation procedures***
- ***Versions being migrated***
- ***Appropriate contacts and resources***
- ***Infrastructure, hardware and software dependencies***

Identify Software Needs to Automate Configuration Management

The database and software configuration management process is limited by features of the corresponding configuration management tools used to support migration and build functions. For this reason, it is essential to define required software features corresponding to processes in the Database Configuration Management Plan. Functionality as well as constraints of the tools must be understood and agreed upon between Deloitte and DWSS in order to successfully manage the Database Configuration Management Process. This allows for automation and other accelerators to be implemented wherever possible in the process.

The remainder of this subsection outlines Deloitte's approach and tools for the creation of the Database Configuration Management Plan.

Deliverable section	*Description*
Summary, constraints, and assumptions	• ***Overview of the database configuration management process*** • ***Constraints and assumptions from previously implemented solutions that are uniquely tailored to the NCSEAS solution through discussions with DWSS SMEs***
Roles and responsibilities	• ***Expectations of Deloitte staff database configuration during design, development, and deployment*** • ***Review processes and procedures for DWSS stakeholders and other vendors during database configuration***
Database configuration items	• ***Process for management of CIs during design, development, and deployment across various logical environments***
Database configuration management process	• ***Process for management of local development database*** • ***Process for creation and build of databases*** • ***Detailed methods for database configuration, specifically reporting and management tools that are used***

Deliverable section	*Description*
Database software upgrades approach	• ***Documented approach for on-demand and scheduled migrations*** • ***Detailed items which must be identified as part of each migration***
Operations and maintenance	• ***Proposed process for implementing database configuration management modifications after the production deployment***

Table 4-13. Database Configuration Management Plan.

4.15.2.2 Execute the Approved Database Configuration Management Plan

Once approved by DWSS and the designated stakeholders, the Database Configuration Management Plan establishes the baseline for the ongoing control, support, and management of the required database components for the NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, testing and implementation phases. Successful execution and completion of the Database Configuration Management Plan occurs in conjunction with the establishment and confirmation of the production database environment for the new NCSEAS solution.

4.15.3 Deliverables

4.15 DATABASE CONFIGURATION MANAGEMENT PLAN

4.15.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.15.3.1	Database Configuration Management Plan	4.15.2.1	10
4.15.3.2	Successful Execution of the Database Configuration Management Plan	4.15.2.2	10

Deliverables	*Confirmation of review time*
Database Configuration Management Plan	***10 days***
Successful Execution of the Database Configuration Management Plan	***10 days***

4.16 Data Governance Plan

4.16.1 Objective

4.16 DATA GOVERNANCE PLAN

4.16.1 Objective

The Implementation Contractor will prepare and update as required a data governance plan for the project.

There are multiple federal, state, and commercial interfaces that are implemented for the NCSEAS system. Data such as employer, name and addresses, as well as asset and income data are important across human services. By implementing a Data Governance Plan, Deloitte and DWSS can avoid problems with the management of data by properly identifying the owner, source, configuration management, and security rights for the data.

We plan to collaborate with DWSS to document this process to establish and execute a core Data Governance Plan. Well-established data governance principles are directly reflected in the streamlined success and unified vision of DWSS and Deloitte during the lifecycle of the project.

The Data Governance Plan is created to document this process so Deloitte and DWSS are able to operate according to the same understanding of the management of data on the project. In this way, Deloitte and DWSS can collaborate to make informed decisions regarding database change requests, design changes and system implementations.

SECTION HIGHLIGHTS

Deloitte's approach to data governance reflects:

- ***Knowledge of complex data exchanges in child support systems such as California and Pennsylvania that improves the processes that Deloitte sets forth in the Data Governance Plan.***
- ***Collaboration with DWSS to review and understand the management of data (e.g., owner, configuration management, and security) allowing Deloitte to effectively implement data governance unique to the needs of DWSS.***

4.16.2 Activities

4.16 DATA GOVERNANCE PLAN	
4.16.2	Activities
4.16.2.1	Develop a Data Governance Plan which will:
A.	Establish a system of decision rights and accountabilities for information-related processes.
B.	Document, according to agreed-upon models, who can take what actions with what information and when they can take those actions, under what circumstances, and using what methods.
4.16.2.2	Execute the approved Application Development Plan successfully.

4.16.2.1 Develop Data Governance Plan

Establish Decision Rights and Accountabilities

We have a successful track record with large-scale projects using proven project management processes supported with standard tools and methodologies. These standards are effective as they rely upon an established method for decisions and accountabilities on the project. In the Data Governance Plan, we embed best practices from our collective experiences with a focus on higher quality, lower risk, and predictability in the delivery of the solution, which benefits DWSS and its stakeholders. We align an established process for how each decision is made on the project and assign owner(s) for each process.

We bring a team that is experienced in the interfaces and data exchanges that are critical to a child support system. This team collaborates with DWSS SMEs to review the federal, state, and commercial interfaces implemented for the NCSEAS system. The data exchanges and source data are grouped into high-

EXPERIENCE TRANSFERRING CALIFORNIA

The diversity of stakeholders for a project such as NCSEAS means that data governance requirements may differ across agencies even when implementing a similar solution. This was true for the Oregon CSEAS 2.0 project, as we identified significant differences – and similarities – between the two states. We leverage our experience from the Oregon CSEAS 2.0 project to address specific Nevada stakeholder requirements that must be reflected within the Data Governance Plan.

level categories such as Case Entities and Financials to facilitate conversations with DWSS SMEs. In these sessions, Deloitte and DWSS review the process for each data exchange and the details associated with the data.

From our own experience and analysis, as well as from information gathered in these sessions, Deloitte documents and executes the Data Governance Plan which sets forth the process for accessing, reviewing and modifying the data in the child support system. The owner of the data as well as the location of data in the source system is detailed in the plan. Configuration management procedures and security rights are also documented. The Data Governance Plan outlines the structure, processes, and the resources used to manage access to the data in the NCSEAS system. This allows Deloitte and DWSS to be on the same page regarding accountability for the data and decisions right in the NCSEAS system.

Document Data Governance Actions and Responsibilities

The processes for decisions and who is accountable for each respective process are well-documented in the Data Governance Plan. This allows Deloitte and DWSS to effectively collaborate and manage data governance on the NCSEAS project. When documenting the data governance processes on the NCSEAS project, we work with DWSS to follow an agreed upon model. Our EVD methodology provides a robust set of processes, templates and accelerators for DWSS to manage data governance. We team with DWSS to tailor our processes and other tools as necessary to meet the needs of DWSS.

Deloitte uses knowledge and analysis of the source system's data, information on data elements provided during data governance analysis sessions, as well as input from DWSS to identify data governance processes that are required to manage data on the NCSEAS system. The Data Governance Plan details which are documented for each process as well as the associated benefit for DWSS are included in the following table:

Data governance process details	*Benefit for DWSS*
Identification / Name	*Unique identification of the individual process*
Responsible party (i.e., Owner)	*Deloitte and DWSS have a well-defined understanding of the owner(s) of each process*
Source	*Location of the data and associated data exchanges are accurately portrayed and described for appropriate parties*
Timing	*The timing of each process is listed and distinct*
Conditions	*Triggers, conditions and rules for the process are communicated between Deloitte and DWSS*
Configuration management	*Agreed upon process for Deloitte and DWSS to effectively manage the respective data in each process*
Security	*Rights are clearly defined for create, write, edit, and deletion of data*
Established method / model	*Agreed upon model is set for the respective process*

Table 4-14. Data Governance Process Details.

4.16.2.2 Execute the Approved Data Governance Plan

Once approved by DWSS and the designated stakeholders, the Data Governance Plan defines the stakeholders, responsibilities, escalation procedures, and other control mechanisms for the data to be managed by the NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, testing and implementation

activities. Successful execution and completion of the Data Governance Plan occurs in conjunction with the establishment and confirmation of the converted and populated production database for the new NCSEAS solution.

4.16.3 Deliverables

4.16 DATA GOVERNANCE PLAN

4.16.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.16.3.1	Data Governance Plan	4.16.2.1	20
4.16.3.2	Successful Execution of the Data Governance Plan	4.16.2.2	10

Deliverables	*Confirmation of review time*
Data Governance Plan	***20 days***
Successful Execution of the Data Governance Plan	***10 days***

4.17 Release Management Plan

4.17.1 Objective

4.17 RELEASE MANAGEMENT PLAN

4.17.1 Objective

The Implementation Contractor will prepare and update as required a release management plan for the project. The plan shall ensure that release dates align with the established DWSS monthly release schedule and minimize impact on other project timelines.

Our team is prepared to collaborate with DWSS and document the plan for release management. The migration of configuration items (CIs) across the various environments of the NCSEAS project must be planned and accurately documented. This includes the build and deployment process as well as a description of the continuous integration process. In addition, releases must be coordinated and aligned with the overall DWSS monthly release schedule to avoid as much as possible conflicts with other key project timelines.

SECTION HIGHLIGHTS

Deloitte's Release Management approach includes:

- ***A robust set of implementation strategy plans and activities developed over 30 years while implementing large and custom developed system***
- ***A rigorous, EVD methodology driven process that accounts for required processes, playbooks, and other release management artifacts necessary to safely deploy the NCSEAS solution into production***

Release management is the process of planning, scheduling, and controlling software builds across the logical environments of the NCSEAS project. Release management involves baselining CIs and building and deploying these CIs across various logical environments of the NCSEAS project. The environment landscape for the project consists of three distinct regions: development, test, and production.

By following the Release Management Plan, DWSS and Deloitte are able to validate that requirements have been met before releases are deployed into production. Also, the release

can be properly controlled as the sequence and schedule of the steps of the release are detailed in the Release Management Plan. We prepare and update as required a Release Management Plan for the project.

4.17.2 Activities

4.17 RELEASE MANAGEMENT PLAN	
4.17.1	Activities
4.17.1.1	Develop a Release Management Plan which will:
A.	Describe the procedures for ascertaining that the NCSEAS has met all requirements before its release into the production environment.
B.	Sequence and schedule the release of the various components of the NCSEAS. The release schedule must align with established DWSS monthly release schedule. Releases may occur less frequently than monthly.
C.	Describe the procedures for controlling the release of the NCSEAS into the production environment. Procedures shall comply with established DWSS release practices.
4.17.1.2	Execute the approved Release Management Plan successfully.

4.17.2.1 Develop Release Management Plan

Confirm that Requirements are Met Before Production Release

The Release Management Plan documents a detailed process for DWSS and Deloitte to adhere to as we prepare to release builds into production. By adhering to the documented plan, requirements are accurately reflected in test scripts which are reviewed and tested in each logical environment. The Release Management Plan identifies how requirements are tied to each build and test scripts. It continues to identify how defects should be addressed and fixed so the fixes may ultimately be included in future builds.

Sequence and Schedule the Production Release

When planning for a release, DWSS and Deloitte must collaborate to properly schedule each part of the release. With any release, there are dependencies and conditions that must be handled appropriately in order for the release to be successful. Deloitte works to document known dependencies and other necessary factors as part of each build and release. For example, through the PMO we coordinate with other ongoing DWSS projects as represented in the DWSS monthly release schedule to minimize as much as possible conflicts with other key project milestones. This allows stakeholders to understand how the release is managed and the reasoning behind the release sequence. There may be situations where an emergency release is required outside of the monthly scheduled releases.

Manage and Control Production Release

The release management process consists of several repeatable steps taken by the Release Manager, developers, development track leads, environment owners, and the testing team to migrate CIs across various environments. Accordingly, the release must be carefully managed and controlled by the parties involved through automated controls implemented across the environments, with progressively more stringent security requirements progressing from development through production. This includes items such as code version control that requires checking code in and out, migrating the code and validating it in each lower environment before progressing to a higher environment, following a defined schedule, validating the builds, and performing health checks of the application code after it gets released. Deloitte and DWSS work together to validate these processes are strictly followed to reduce risk for NCSEAS. The following figure provides an overview of the release management process.

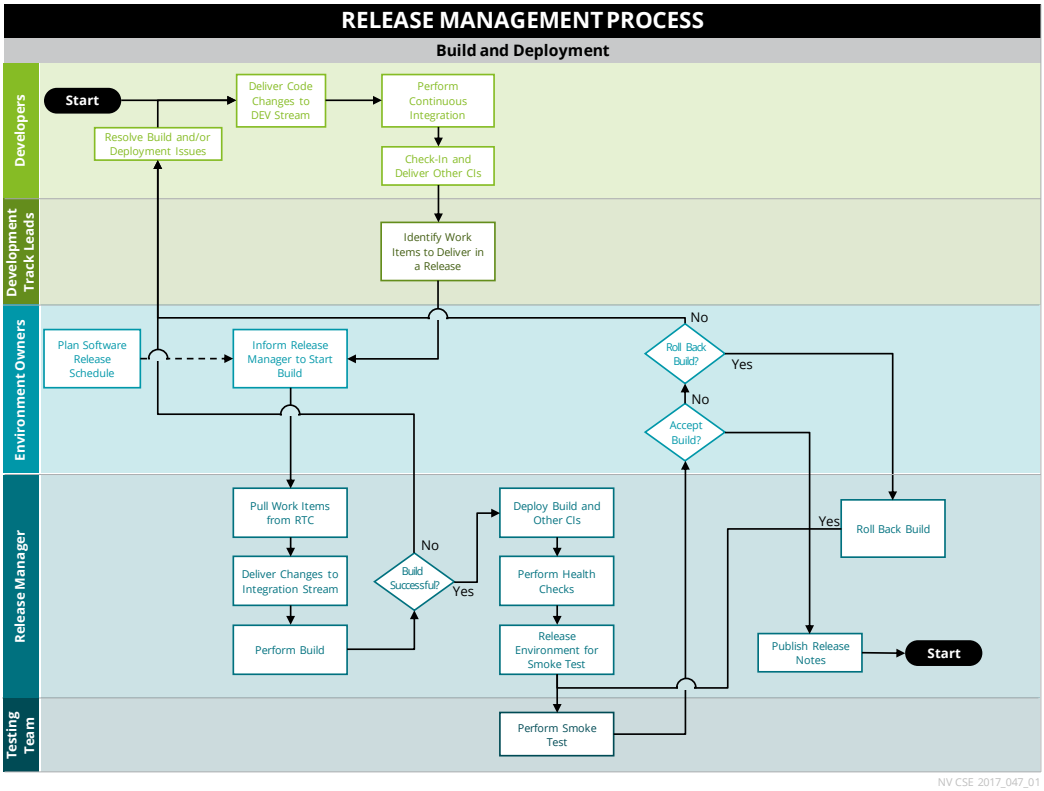


Figure 4-24. Release management process.

Because the release management process includes multiple steps and many stakeholders, the Release Management Plan is essential to provide control for the process. The Release Management Plan is used to document the steps, dependencies, stakeholders involved and other necessary items for each part of the process. For each of the stakeholders, the plan provides their contact information and the high-level communication plan and schedule to be executed during a release. Communication across the stakeholders is a critical component of a rigorous release management plan. The plan is also used to identify how releases are planned from the scoping of a release, defining a schedule, to ultimate migrating through each environment to Production. By doing this, Deloitte and DWSS can effectively release builds into production that follows a repeatable process that reduces risk and results in successful implementations.

4.17.2.2 Execute the Approved Release Management Plan

Once approved by DWSS and the designated stakeholders, the Release Management Plan establishes the baseline for each testing and production release of the NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, testing, and implementation activities. Successful execution and completion of the Release Management Plan occurs in conjunction with the production implementation of the new NCSEAS solution.

4.17.3 Deliverables

4.17 RELEASE MANAGEMENT PLAN

4.17.2 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.17.3.1	Release Management Plan	4.17.2.1	5
4.17.3.2	Successful Execution of the Release Management Plan	4.17.2.2	10

Deliverables	*Confirmation of review time*
Release Management Plan	***5 days***
Successful Execution of the Release Management Plan	***10 days***

4.18 Data Conversion Management Plan

4.18.1 Objective

4.18 DATA CONVERSION MANAGEMENT PLAN

4.18.1 Objective

The Implementation Contractor will prepare and update as required a data conversion management plan for the project.

A child support system can become paralyzed when the underlying data is incomplete, missing, or incorrect. Resulting problems may include duplicate cases, duplicate participants due to inefficient matching of members during case creation, delays in receiving payments due to incorrect and inefficient employment and employer data conversion, incorrect financial distribution of payments due to incorrect conversion of obligations and balances, incorrect allocation of payments due to incorrect conversion of public assistance history, and life-threatening situations due to incorrect conversion of Family Violence data and indicators. By implementing an effective Data Conversion Management Plan, Deloitte and DWSS can avoid these problems and successfully convert the necessary data for the NCSEAS project.

- ***We have successfully converted the data in Florida CAMS which is composed of over 1 million cases, 2 million case members, and 700 thousand Support Orders***
- ***We are leveraging resources with "hands-on" experience in the CA CSE conversion on our proposed team***
- ***We are using enterprise ETL tools to enable accurate and complete data***

The Data Conversion Management Plan defines the approach and processes used to convert data from NOMADS to the new NCSEAS solution. The data conversion strategy includes the activities required to plan, design, develop, test, validate, and implement data conversion. The migration strategy within the deliverable covers a phased conversion approach to support the implementation rollout approach. The overall strategy also includes an approach to data cleanup in order to assist DWSS identify and apply manual changes that may be necessary to successfully converts legacy case information to the new solution. The purpose of the Data Conversion Management Plan is to:

- ***Describe the methodology used for data conversion activities and how it aligns with the overall project SDLC methodology and timelines***
- ***Describe the relationship between the implementation rollout and the corresponding data conversion and migration activities***
- ***Establish a roadmap and a set of guidelines for DWSS and Deloitte to follow when extracting data from NOMADS, performing data cleanup activities, and when excuting the final conversion of data to NCSEAS***
- ***Define the respective roles and responsibilities of DWSS and Deloitte for data conversion related activities***
- ***Provide guidelines and the approach and process for DWSS to own and perform the following activities:***
  - ***Manual data cleanup***
  - ***Manual data entry if needed***
  - ***Manual client merges***

4.18.2 Activities

4.18 DATA CONVERSION MANAGEMENT PLAN	
4.18.2	Activities
4.18.2.1	Develop a Data Conversion Management Plan which will:
A.	Identify the data sources for conversion efforts, including but not limited to the IV A, IV E, and Title XIX systems.
B.	Specify the standards and the methodology for extracting, data and deriving or otherwise obtaining missing or incomplete data.
C.	Define, in cooperation with Program, the tolerance level for nonconvertible cases and the plan to manage to that conversion rate.
4.18.2.2	Execute the approved data Conversion Management Plan successfully.

4.18.2.1 Develop a Data Conversion Plan

Identify Data Sources for Conversion

As part of data conversion, it is essential to effectively identify and manage data sources for conversion. The Data Conversion Management Plan provides a series of sessions for DWSS and Deloitte to collaborate and understand NOMADS source data elements, associated entities, relationships between entities, dependencies, and attributes of source data elements. These sessions also provide an understanding of NOMADS data structures including current usage, policy, and administrative guidelines. Our conversion team lead works with SMEs from DWSS to conduct these sessions.

Deloitte groups topics by child support business entities such as case, participant, and disbursement. Data entities and attributes associated with each of these subtopics are aligned as part of these source data sessions. DWSS SMEs use the NOMADS data model, data dictionary, and supporting documentation as tools during the source data sessions. Provided is a partial list of high-level source data groupings which may be discussed in the sessions and documented in the conversion plan:

- ***Case Entities***
- ***Participant Entities***
- ***Establishment***
- ***Financials***
- ***IV-A / IV-E Referrals***
- ***Title XIX Referrals***
- ***Enforcement***
- ***Supporting Data Entities***

Deloitte uses the NOMADS data dictionary, information on data elements provided during the source data sessions, and additional input from DWSS to identify source data entities and key attributes required to convert into the NCSEAS solution. Examples of these attributes include:

- ***Data type***
- ***Enumeration of the code type values***
- ***Optional and not null attributes***
- ***Key business rule(s)***

Our team brings a deep understanding of the current NOMADS system and the DWSS ZOS and UDB databases and their dependencies, including replicated databases. This provides us with insight into the conversion requirements, potential issues to be addressed, and familiarity with current data quality that also serves as input to the source data sessions. The following is a list of DWSS databases for which we can provide operational knowledge as input to the Data Conversion Management Plan:

- ***NOMADS ZOS***
- ***NOMADS ZOS replicated***
- ***ACCESS NV***
- ***AMPS***
- ***NSWD***
- ***PDS & Security***
- ***NCCS***
- ***OASIS***
- ***EAP***
- ***I&R***

Our team collaborates with DWSS to identify the full list of source systems in scope for NCSEAS data conversion. These may include other IV A, IV E, and Title XIX systems with which the child support program interfaces and which therefore may require reconciliation to the final set of converted NCSEAS cases.

Document Standards for Data Conversion

The Data Conversion Management Plan describes the methodology used for data conversion activities. This includes the overall conversion timeline, activities, and milestones that occur in each conversion phase when moving data from the NOMADS source system(s) to the NCSEAS solution.

There are seven distinct conversion phases aligned with the overall project SDLC phases and timelines. The design, development and testing activities for the NCSEAS solution itself and the design, development and testing of the conversion programs run in parallel. This alignment allows the converted data to be available in time for system testing and UAT. These phases and the alignment to the project timeline are documented in the Data Conversion Management Plan. For example, the following are activities associated with the design conversion phase:

- ***Conduct conversion JRP/JAD sessions***
- ***Define data mapping specifications***
- ***Define data extract specifications***
- ***Complete conversion design***

Each one of these activities is detailed in the Data Conversion Management Plan, including associated dependencies and roles and responsibilities for these activities.

As part of this effort we also conduct a data quality assessment in order to identify potential risk areas. Due to our intimate knowledge of the current NOMADS database, we bring potential data quality items on day 1 and do further analysis while executing the project to be fully prepared for the conversion effort. An example of a data quality issue currently present in NOMADS IE and CSE is data corruption due to split record issues.

Deloitte recognizes the severity of split record issues in NOMADS and addresses it by developing a standardized split logic algorithm that can be used by the IE modules. We have proven success in conducting these data quality assessments as part of data conversion planning activities, and similar activities were successfully executed as part of our data conversion preparations for the transfer of CA CSE to Oregon.

Manage Conversion and Associated Conversion Rate

A focus on data quality in the context of data conversion is necessary to deliver complete and accurate data from the source system(s) to NCSEAS. The Data Conversion Management Plan defines an approach to define and implement data quality checks and reconciliations to be executed before and after data conversion. To validate the correctness of converted data, there are multiple processes which must be defined in the Data Conversion Management Plan such as:

- ***Validation of whether data extracted is converted in its entirety and is accounted for (i.e., confirming the conversion rate and completion of conversion for expected data volumes)***
- ***Validation of the correctness of data to verify business integrity (i.e., alignment of converted data with conversion requirements provided by DWSS SMEs during the source data sessions)***
- ***Identification and handling of non-converted data (i.e., either data unnecessary for the target system or specific data that is not to be converted)***

The Data Conversion Management Plan outlines the timeline, volumes, and expected conversion rate for data conversion, along with the identification of tolerance levels for data that is not to be converted.

4.18.2.2 Execute the Data Conversion Plan

Once approved by DWSS and the designated stakeholders, the Data Conversion Plan establishes the baseline for the successful conversion and transition of legacy NOMADS data into the new NCSEAS solution. This plan is leveraged, updated and confirmed throughout the design, development, testing and implementation activities. Successful execution and completion of the Data Conversion Plan occurs in conjunction with the production implementation of the new NCSEAS solution.

4.18.3 Deliverables

4.18 DATA CONVERSION MANAGEMENT PLAN

4.18.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.18.3.1	Data Conversion Management Plan	4.18.2.1	20
4.18.3.2	Successful Execution of the Data Conversion Management Plan	4.18.2.2	10

Deliverables	*Confirmation of review time*
Data Conversion Management Plan	***20 days***
Successful Execution of the Data Conversion Management Plan	***10 days***

4.19 Test Management Plan

4.19.1 Objective

4.19 TEST MANAGEMENT PLAN

4.19.1 Objective

The Implementation Contractor will prepare and update as required a test management plan for the project.

We are ready to be effective on day 1 with more than 5,000 Deloitte-developed testing scenarios designed and used successfully for the CA CSE solution that can be leveraged to jump-start the NCSEAS project testing process. We also know the set of interfaces required for child support solutions, such as interfaces with the existing IV-A and IV-E systems as well as external agencies such as transportation, labor, revenue, and Federal OCSE, that are necessary to implement as part of the NCSEAS solution. Consequently, we can expedite coordination and execution of that testing. Our hands-on experience with testing the component systems that form the baseline for the NCSEAS project translates to thorough preparation to accelerate the timeline. We document and deliver this as part of the Testing Management Plan.

The Deloitte testing approach aims to identify and resolve software deficiencies early in the process. We create awareness among the NCSEAS project team that software quality is achieved by the application of sound software engineering methodologies applied throughout the life cycle of application development. Conducting quality-assurance reviews and testing throughout the project life cycle is an excellent way to deliver a high-quality application to best serve end-users.

The Testing Management Plan is essential to drive the application development through established protocols for each logical environment into production. Standards are established and documented for the hardware and infrastructure of each logical environment. Test cases are prepared and documented so defects can be effectively identified and handled during testing of the application. In order to efficiently implement these testing processes, Deloitte uses software to track testing results. We prepare and update as required a Testing Management Plan to effectively guide testing for the project. A sample Test Management Plan is shown in the following figure.

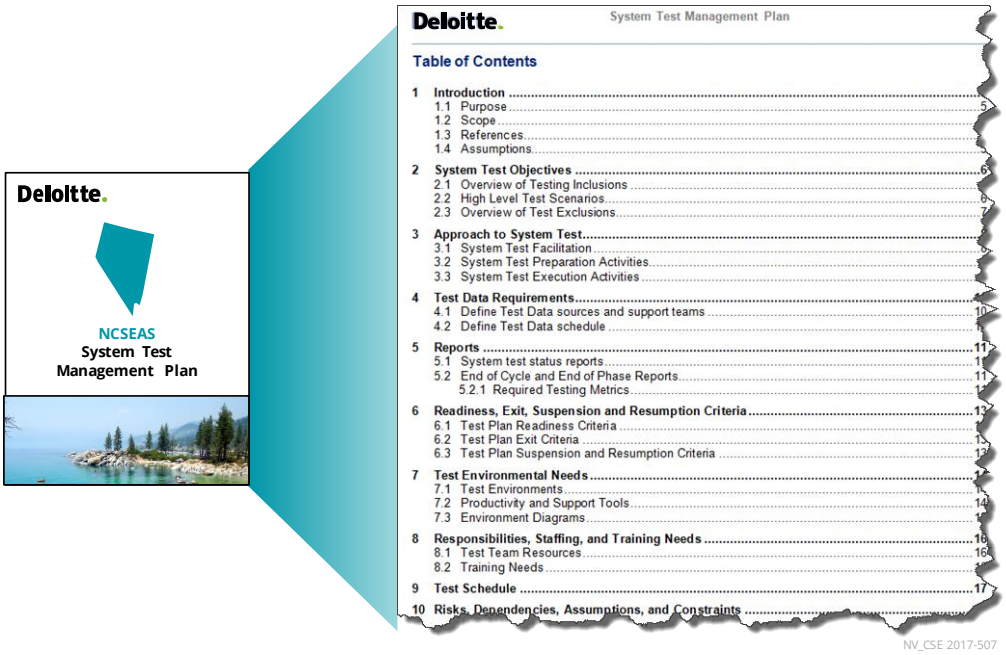


Figure 4-25. System Test portions of our Sample Test Management Plan.

The plan also identifies the solution features to be tested, the types of testing to be completed, specific testing tasks, resources assigned to perform each task, and any risks requiring contingency planning. The Test Management Plan is established to provide foundational documents that feed the test strategy and testing approach. Our approach to creating a sound strategy and management plan for testing the NCSEAS solution involves the following steps:

- ***Understand the program vision***
- ***Review system requirements and design artifacts***
- ***Review application interfaces, data conversion approach, and batch execution cycles***
- ***Identify testing types that apply and are to be conducted along with the necessary resources***
- ***Determine overall test schedule***
- ***Identify testing dependencies, including those on external agencies, constraints, and assumptions***
- ***Determine testing governance, roles, and responsibilities for DWSS stakeholders involved in testing***
- ***Document entry and exit criteria for each testing phase***
- ***Document test reporting approach, frequency, and testing metrics***
- ***Establish criteria and procedure to close out the system testing phase***

4.19.2 Activities

4.19 TEST MANAGEMENT PLAN	
4.19.2	Activities
4.19.2.1	Develop a Test Management Plan which will:

A. Identify the protocols to perform unit, integration, performance, regression, and user acceptance testing.

B. Establish the standards for test case preparation, for performing and documenting testing activities, for identifying and tracking application defects, for prioritizing defects as critical, major, or minor, and for reporting on the number and types of defects and their correction.

C. Identify tasks to establish a test environment and scripts for the distribution test deck cases and provide for regression testing against the distribution test deck cases.

D. Identify software to assist in the testing and test result tracking process.

E. Identify the protocols to test the hardware and infrastructure configuration.

4.19.2.2 Execute the approved Test Management Plan successfully.

4.19.2.1 Develop Test Management Plan

Identify Testing Protocols

We bring an industry-standard testing and quality management methodology to the NCSEAS project, embedded within our Enterprise Value Delivery (EVD) methodology. We rely on reusable processes and assets from our successful testing efforts on prior projects, as well as our team's collective experience with testing child support solutions across multiple states and lessons learned testing a broad spectrum of applications similar to the NCSEAS solution. The Testing Management Plan documents this integrated set of processes, assets, tools, and frameworks for developing and implementing high-quality software solutions. It also documents the different phases of testing that will be executed and the protocols that are common across the phases as well as protocols that differ by phase.

Establish Standards for Test Case Preparation, Execution, and Defect Handling

The Testing Management Plan outlines the outputs from the requirements and design activities (e.g., process flows, use cases, business rule definitions, requirements traceability) that are used to define the NCSEAS project test scripts, scenarios, and detailed test cases. Specifically for the NCSEAS project, we can also add a strong baseline of more than 5,000 test scripts from the CA CSE solution.

EXPERIENCE TRANSFERRING CALIFORNIA

We leverage our experience from the Oregon CSEAS 2.0 project to address the requirements for the Test Management Plan:

- ***Related to our work for both California and Oregon, we have established a baseline set of over 5,000 test scripts that can be leveraged to support testing requirements for NCSEAS***
- ***These test scripts address key CSE functionality to be delivered but are customized to align to specific functionality delivered within the CA CSE system***
- ***In addition to input for the Test Management Plan, our team can also deliver test cases specific to the Federal Test Deck for OCSE certification of the solution, which can be incorporated into the Test Management Plan so as to begin confirmation of Federal requirements earlier in the test cycle***

The Test Management Plan outlines the procedures for conducting tests, documenting results, logging, tracking, prioritizing, and reporting on defects and their status toward correction. NCSEAS test cases are created in Selenium and JMETER and the Test Management Plan contains step-by-step instructions on how to execute a test, capture the observable result, and compare it to an expected result. We evaluate each child support business function and define the associated test case coverage that is necessary to fully test that function. As the test cases are executed, results and any defects or issues reported by the team are logged in JIRA and reviewed at the defect triage discussions. These tools

allow the testers to link defects to impacted test cases for ease of tracking. The Testing Management Plan defines Deloitte's approach to defect management which is grounded in a well-defined process that provides DWSS with transparency and accountability for managing and resolving defects at each phase of the testing cycle.

Establish Test Environment and Scripts for Distribution Test Deck Cases

To support the testing and demonstrations required for the Federal Test Deck, the Deloitte Team creates a separate NCSEAS test environment. This separate environment mirrors the Production region and provides a realistic environment for demonstrating the Test Deck.

The Federal Financial Test Deck issued by OCSE consists of 25 case scenarios. We create the test scenarios to be used for the NCSEAS Test Deck. We have developed test scenarios for the mandatory case scenarios which we used in other states. We use these previously developed scenarios as a basis for this effort and modify as needed the optional scenarios to meet the distribution options selected for NCSEAS. We request that you review and approve the test scenarios before we create the cases within the Test Deck environment. Once approved, we create the necessary cases in the environment created for the execution of the Test Deck. In our experience, this will be between 25 and 30 cases, depending on the PRWORA distribution options selected by DWSS.

Identify Software for Testing Management

As part of the Testing Management Plan, software is identified and planned to be used in the project life cycle. The functional use of Jira, Selenium, and JMeter is documented in detail for the team members to follow in the plan.

Establish Protocols to Test Hardware and Infrastructure Configuration

The Testing Management Plan defines the necessary tools and processes to perform load and performance testing for the NCSEAS infrastructure and hardware (e.g., application and batch servers, network devices, and firewalls) as part of the overall test approach. It is critical to confirm the adequacy of the NCSEAS infrastructure prior to the start of production implementation of any NCSEAS components. The deliverable also defines the corresponding database components (e.g., data storage) to be used to support infrastructure testing, which for the logical testing environment primarily stores sanitized test data from the production environment.

4.19.2.2 Execute the Approved Test Management Plan

Once approved by DWSS and the designated stakeholders, the Test Management Plan establishes the baseline for testing activities required for the new NCSEAS solution, from unit testing through performance, system and user acceptance testing. This plan is leveraged, updated and confirmed throughout the development, testing and implementation activities. Successful execution and completion of the Test Management Plan occurs in conjunction with the conclusion of user acceptance testing for the new NCSEAS solution prior to production implementation.

4.19.3 Deliverables

4.19 TEST MANAGEMENT PLAN

4.19.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.19.3.1	Test Management Plan	4.19.2.1	10
4.19.3.2	Successful Execution of the Test Management Plan	4.19.2.2	10

Deliverables	*Confirmation of review time*
Testing Management Plan	***10 days***
Successful Execution of the Test Management Plan	***10 days***

4.20 Training Management Plan

4.20.1 Objective

4.20 TRAINING MANAGEMENT PLAN

4.20.1 Objective

The Implementation Contractor will prepare and update as required a training management plan for the project.

The Training Management Plan includes the following components:

- ***Guiding Principles***
- ***Organizational Assumptions***
- ***Training Scope***
- ***Training Objectives and Expected Benefits***
- ***Key Stakeholders and End User Groups***
- ***General Training Approach and Modalities***
- ***Training Timeline***
- ***Training Staff***
- ***Training Logistics***
- ***Documentation and Training Materials***
- ***Course Assessments and Training Metrics***

It provides a roadmap for the development and execution of the training program for NCSEAS, which includes end user training for the pilot, and a train-the-trainer (TTT) program for the remaining rollout. We use a proven methodology built upon the industry-standard ADDIE approach: Analyze, Design, Develop, Implement, and Evaluate to develop the plan. This process supports the right training method and materials reaching the right end-users at the right time. This approach and methodology has proven successful in similar CSE projects we have conducted in Florida and Kentucky. In addition, we have used the same approach and method to train more than 100,000 Health and Human Services Staff in other state government projects across the United States.

Deloitte's training is an important differentiator among systems implementation firms. We know that:

- ***Training and adoption of the new NCSEAS is a measure of our success***
- ***Hands-on training accelerates end-user adoption***
- ***The NCSEAS training plan must take into account when, where and how DWSS and CSEP staff learn best***
- ***Training is not a one-time event, but a continual process, requiring thorough monitoring and measuring of training effectiveness***

We prepare and update the Training Management Plan based on specific needs of your end user groups and site support staff by connecting directly with staff who use the system on a daily basis. CSE experts distill information and create a "plan of attack" that easily adapts to the development schedule and advances your users to capability through a proven training approach and process.

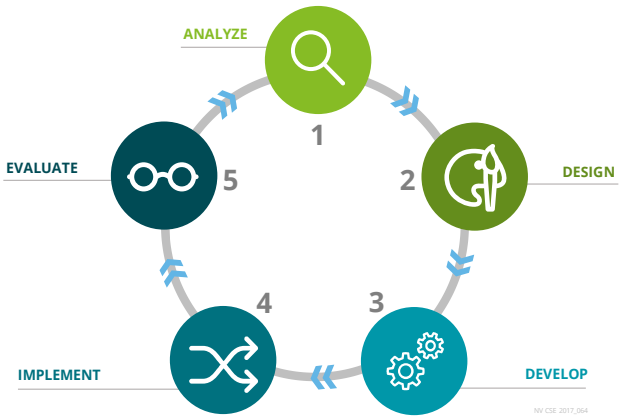


Figure 4-26. The ADDIE approach to training.

The Training Management Plan does not include the development and updating of DWSS policies and procedures. However, we work closely with DWSS to incorporate references to new policies created where applicable, and to integrate new procedures created to facilitate NCSEAS functionality.

4.20.2 Activities

4.20 TRAINING MANAGEMENT PLAN	
4.20.2	Activities
4.20.2.1	Develop a Training Management Plan which will:
A.	Set the training objectives and describe the requisite training activities, schedule for the activities, and resources assigned to the activities.
B.	Indicate who the Implementation Contractor will train in various system components, what the training scripts will contain, and what format the Implementation Contractor will use.
C.	Describe how the Implementation Contractor will use computer-based training, what the Implementation Contractor will cover, and how the Implementation Contractor will use classroom training in combination with computer-based training.
D.	Address the logistics of where and when the training sessions will take place, include a section relating to ongoing training as well as training for new users, and document the information needed for users to attain full use of system functionality.
4.20.2.2	Execute the approved Training Management Plan successfully.

Training Objectives, Activities, Schedule and Resources

Our primary objective is to develop a comprehensive Training Management Plan that supports DWSS staff learning, transfer of knowledge, and development of new system-related skills so that users are prepared and confident in their abilities to serve the citizens of Nevada without interruption, slowdown or negative impacts. To achieve this terminal objective, we have established a series of enabling objectives including:

- ***Create a collaborative environment to establish training requirements and measures of success***
- ***Identify and confirm end user groups and their specific training needs, i.e., which system components and processes they need to learn, and how and when they will be trained to complete their job responsibilities within the new system***
- ***Design a portfolio of effective tools to transfer the right knowledge to the right groups***
- ***Create a training design, development, and delivery schedule that aligns and adapts to the system development timeline to provide a series of training courses and experiences for end users as various components of the system become available***

- ***Establish testing criteria and analytical metrics to measure, review, and assess transfer of knowledge and skills during and following the training to confirm successful completion of training requirements***

Activities

Building on the ADDIE approach, we complete the initial Training Management Plan during the early phases of the project and later refresh the plan and documentation as system testing progresses toward completion. Our team matches the pace of the system iterations that must occur during planning, development, testing, and beyond.

ADDIE Training Phase	*Sample Activities Completed*
Analysis	• ***Assess and document functionality and processes that are completed within the NCSEAS solution and map them to specific job roles and users performing those functions*** • ***Create a training profile for each job role documenting required knowledge, skills, and readiness for NCSEAS training*** • ***Develop the NCSEAS User Training Management Plan and training schedule*** • ***Confirm delivery method for training content (e.g., Web-based vs. classroom)***
Design	• ***Establish objectives for each training course*** • ***Create course outlines*** • ***Design course evaluations and learning assessments*** • ***Develop web-based training storyboards***
Development	• ***Develop web-based training (WBT) and Instructor-led training (ILT) courses*** • ***Develop course evaluations and learning assessments*** • ***Prepare online training environment for web-based courses*** • ***Upload WBT courses to learning management system (LMS)*** • ***Test effectiveness of training content through dry run and review sessions, making revisions as required***
Implementation	• ***Deliver the Train-the-Trainer program*** • ***Deliver Web-based and classroom training*** • ***Deliver post-classroom follow-up webinars***
Evaluation	• ***Evaluate training course effectiveness*** • ***Conduct course assessments to measure increase in student knowledge*** • ***Transition responsibility for NCSEAS training materials development and training delivery to the Agency***

Table 4-15. Activities completed during each of the ADDIE Training Phases for the NCSEAS Project.

Schedule

The high-level schedule for the NCSEAS training activities coincides with the completion of system testing and ends when the new system rollout is completed.

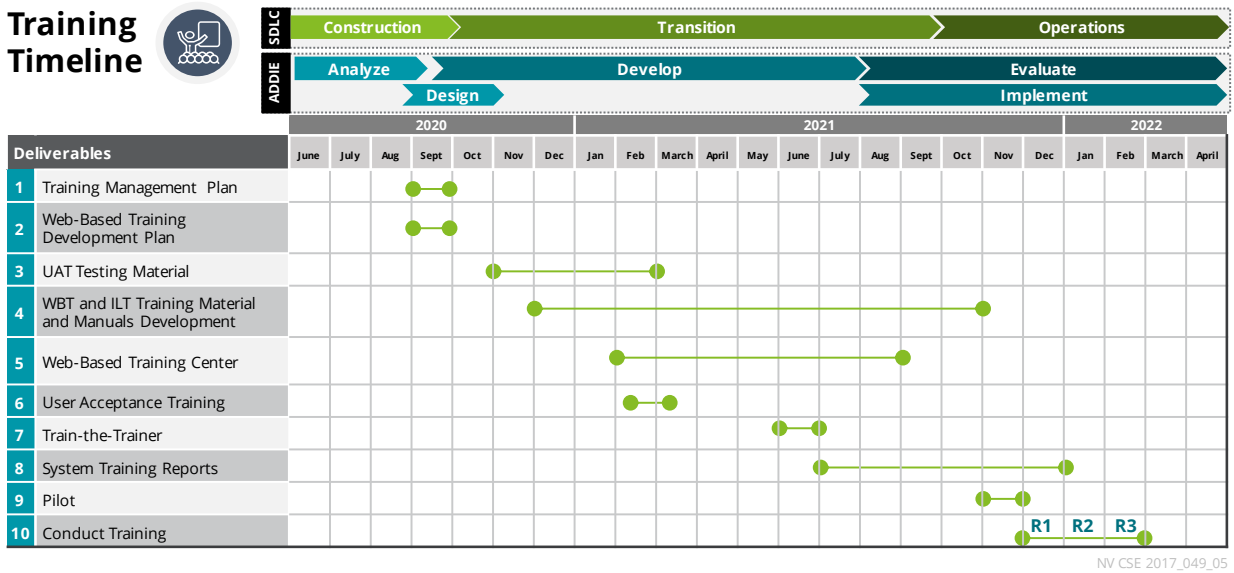


Figure 4-27. Proposed Training Timeline for the NCSEAS Project.

We leverage a variety of resources including a team of subject matter experts (SMEs) in CSE, experts in large-scale training transformations, and training team members to design, develop, implement, and evaluate training. Our portfolio of technologies includes:

- ***Adobe RoboHelp: Creates customized online help***
- ***Articulate 360: Used to develop web-based training courses***
- ***Training Environments: Allows for trainers to develop curriculum and provide hands-on practice during instructor-led courses***
- ***Skype or equivalent web-delivery tool: hosts learning events in real-time enabling learning and collaboration among users***
- ***WebSurveyor: Allows trainers to capture feedback for the trainings administered***
- ***Training Assets from CA CSE: Gives Deloitte trainers a baseline for materials and leverages leading practices and lessons learned***
- ***Microsoft Office Products: Various Microsoft Office products are used to convey information including Word, PowerPoint, Project, and more***

Training Groups, Scripts, and Format

Training Groups, Courses, and Format

We conduct a comprehensive analysis to capture the positions requiring training for the new NCSEAS solution. We work with DWSS to develop specific learning paths for each of the following groups of positions: Case managers, Clerical staff, Supervisors, Attorneys, Financial support, IT, Quality control, and other Managerial and Support positions. Learning paths consist of a combination of one or more of the following proposed courses. The proposed format for each course is also included.

Proposed Course Titles	*Proposed Format*
Overview, Introduction, and Commonly Used Functions	• ***Self-paced, web-based course*** • ***Quick Reference Guide***

Proposed Course Titles	*Proposed Format*
Case Intake	• ***Self-paced, web-based course for basics*** • ***ILT course for practice and problem solving*** • ***Quick Reference Guide***
Locate	• ***Self-paced, web-based course*** • ***Quick Reference Guide***
Establishment	• ***ILT course for practice and problem solving***
Intergovernmental	• ***ILT course for practice and problem solving***
Enforcement	• ***Self-paced, web-based course for basics*** • ***ILT course for practice and problem solving***
Financials	• ***Self-paced, web-based course for basics*** • ***ILT course for practice and problem solving***
Reports	• ***Self-paced, web-based course*** • ***Quick Reference Guide***

Table 4-16. Proposed format.

Scripts

We create training scripts using resources from the CA CSE system and our experience working with other states to support instructor-led training. Training scripts include tips and notes provided in the instructor guides, which offer expert advice to help instructors elaborate and offer greater insight during training. Training scripts also include exercises and scenarios to reinforce classroom learning. The following chart includes sample topics we will use to develop training scripts for NCSEAS.

Proposed course titles	*Sample topics covered*	
Overview, Introduction, and Commonly Used Functions	• ***Basic Navigation*** • ***Adjustment Detail*** • ***Case Balance, Log, Maintenance, Summary*** • ***Change Password*** • ***Employer Search*** • ***Forms*** • ***Login***	• ***Maintain Employer*** • ***Maintain Member: Address, Assets, Employment, Medical Insurance*** • ***Monthly Financial Case Summary*** • ***Reports*** • ***Search***
Case Intake	• ***Add Dependent*** • ***Case Match Resolution*** • ***Case Merge, Setup, Application, Referral*** • ***IV-D Application*** • ***Foster Care Referral*** • ***Interstate Transaction Search***	• ***Maintain Employer Medicaid Referral*** • ***Maintain Member*** • ***Member Match Resolution, Merge*** • ***Referral Management*** • ***TANF Referral*** • ***UIFSA***
Locate	• ***Locate Log*** • ***Locate Search***	• ***Manual Locate Result*** • ***Member Locate Summary***
Establishment	• ***Case Closure, Maintenance, Summary*** • ***Docket*** • ***Event Scheduling, Search*** • ***Genetic Test*** • ***Guideline Calculator*** • ***Maintain Interstate Case*** • ***Member Locate Summary*** • ***Order, Obligation Summary***	• ***Paternity Information*** • ***Review and Adjustment*** • ***Schedule Administrative Conference, Judicial Hearing*** • ***Service of Process*** • ***UIFSA*** • ***Voluntary Paternity Acknowledgement***

Proposed course titles	*Sample topics covered*	
Enforcement	• ***Administrative Liens*** • ***Bankruptcy*** • ***Docket*** • ***Emancipation*** • ***Federal Prosecutions*** • ***Locate*** • ***Maintain Interstate Case*** • ***NMSN Response***	• ***Case Transfer*** • ***Order*** • ***Outgoing Interstate Cases*** • ***Rule to Show Cause*** • ***Schedule Judicial Hearing*** • ***Service of Process*** • ***Wage Withholding*** • ***Warrant***
Financials	• ***Accrual Suspension*** • ***Adjustment Detail*** • ***Alternate Payee Maintenance*** • ***System Balance*** • ***Batch Control, Search*** • ***Benefit History*** • ***Case Balance, Log, Payment Hold*** • ***Chart of Accounts Maintenance, Mapping***	• ***Collection Search*** • ***Disbursements*** • ***Financial Log, Codes*** • ***Holds*** • ***Public Assistance History*** • ***Receipt Adjustment*** • ***Refund Request***
Reports	• ***Overview of Reporting in NCSEAS*** • ***Contents of Reports***	• ***Ad-hoc vs. System Generated Reports***

Table 4-17. Sample Topics for Training Scripts Development.

Format

Training format is determined based on the topic, audience, and requirements to support optimal transfer of knowledge and skill building. The modalities we will use for training delivery include:

Web-based Training:

- ***Self-paced Sequential Modules: These Articulate 360 sequenced training courses enable users to learn the simple functions of the system at their own pace and to refer back to training as needed. Please reference Section VI: 4.21 Web-Based Training Development Plan for more information about our WBT approach.***

Classroom Training:

- ***Presentations: PowerPoint presentations address complex system topics and introduce participants to the goals of each course***
- ***Instructor Led Hands on Learning through Case Scenarios: Exercises help users experience dealing with specific tasks as they walk through scenarios with trainers***
- ***Interactive Exercises: Participants practice solving problems in small group settings or within a training environment***
- ***Supported "Try Your Own" Exercises: Similar to case scenarios, participants attempt to solve a problem on their own; if guidance is needed trainers can provide assistance***
- ***Written Evaluations: Participants check their knowledge and trainers assess transfer of knowledge and skills through written evaluations***
- ***Surveys: Surveys allow the Training team to incorporate participant feedback into the training***

Training Follow-up and Support including:

- ***Webinars: These instructor and SME–led interactive sessions provide an opportunity for users to ask clarifying questions and learn from others in a group setting***
- ***On Call Support Staff: These staff are available to assist users during implementation by providing an extra level of personalized support to address user questions***
- ***Built In Help: Adobe RoboHelp is available to users who seek specific instructions to complete specific tasks***

Training Delivery Methods of the NCSEAS Training Program

We leverage a variety of training delivery methods to provide audiences with an engaging, blended, and interactive training experience. The NCSEAS training delivery approach primarily utilizes Classroom Instructor-Led and Computer-based training to optimize end user operational readiness post-go live.

How We Use Blended Learning: Classroom Training, Web-Based Training, and Training Support

We determine the appropriate blend of classroom instructor-led and web-based training considering the complexity of the information and the current knowledge of the workforce. For example, basic navigation courses are often taught using a self-paced computer/web-based format. In contrast, a complex topic such as troubleshooting and reporting often requires an instructor to tailor the lesson to the users' skills and requirements.

- ***Computer-based Training allows targeted staff to complete training at their convenience, providing flexibility to accommodate individual work schedules. Learners practice standardized tasks via web-based courses as pre-work, post-work, and refresher training. Please reference Section VI: 4.21 Web-Based Training Development Plan for additional details.***
- ***Classroom-based Training: The focus of instructor-led training is "show me, try me, and ask me." Instructor-led training accommodates different learning styles, i.e., hearing learning content (for auditory learners), seeing learning content (for visual learners), and practicing new skills (for Kinesthetic & Tactile learners). Classroom-based course materials will utilize content from the system for training materials. We work with DWSS on classroom-based training assessments. However, if DWSS elects to institute a mandatory passing score, DWSS will be responsible for training remediation activities to support students who have trouble with attainment.***
- ***All courses have facilitated dry runs and reviews of proposed course content prior to release. Train-the-Trainer sessions occur prior to classroom-based course deployment.***

Evaluation of classroom instructor-led and web-based trainings from trainees and trainers support ongoing updates to the material and confirm end users are gaining the skills necessary to carry out their job functions successfully.

Training Deployment for the NCSEAS Training Program

Following acceptance of NCSEAS testing and the completion of the training materials, we initiate the six-month training and rollout phase of the NCSEAS solution. The deployment

plan outlines the schedule, logistics, ongoing training support post-go live and includes documentation of the NCSEAS functionality for training new staff.

Training Schedule & Logistics

The NCSEAS training schedule guides the timing and delivery of courses during training deployment. Training logistics require consideration of the number of courses, course durations, availability and size of training rooms, number and qualifications of trainers, geographic dispersion of end users, prerequisites, and CSEP workload patterns. Our team advises and collaborates with DWSS to define the parameters for training delivery for the greatest efficiency possible while accounting for optimal learning experiences.

We recommend just-in-time training, providing end user training as close to their corresponding go-live date as possible to maximize retention of knowledge and skills.

The following table is an example of how we collaborate with DWSS to determine training sessions based on available office locations.

Project Locations	*Projected Delivery*
Southern CSE Office sites (Clark County)	***October 2021 (Pilot Training)*** • ***Classroom*** • ***Web based***
Northern CSE Office sites (Washoe and Northern Counties)	***December 2021 (R1 Training)*** • ***Classroom*** • ***Web based***
West-Central CSE Office sites (Carson City)	***January 2022 (R2 Training)*** • ***Classroom*** • ***Web based***
Eastern CSE Office sites	***February 2022 (R3 Training)*** • ***Classroom*** • ***Web based***

Table 4-18. Example Training Schedule and Logistics.

Training Follow-up and Support

Post training webinar sessions are essential to support and reinforce learning after students have spent time using the system live in their offices. We facilitate sessions with participants via teleconference, videoconference, or computer-conference (e.g., GoToMeeting or Skype) to provide information about system updates, allow staff to ask complex questions, and provide feedback to the training team. These sessions also prove useful to identify additional training needs, including development and use of quick reference guides, and other self-help resources that may be available.

Training New Staff and Supporting Documentation

The NCSEAS Training Management Plan includes a strategy and plan for training new staff and addressing refinements to services, new services, and development. It also documents, recommended training activities and supporting materials needed for staff to become fully fluent in NCSEAS functionality. These supporting materials may include:

- ***Technical and User Training Materials such as the Instructor User Guide and Student User Guide***

- ***Quick Reference Guide and Online Help***
- ***Test/training scenarios and scripts for web-based training***
- ***Other documentation necessary to use and operate the System, as needed***

Please reference Section VI: 4.31 Training for further details.

Successful Execution of the Training Management Plan

We collaborate with the State to develop an approved, comprehensive Training Management Plan with key milestones and metrics to measure the effective rollout of training. These metrics provide actionable feedback to course correct and confirm achievement of intended training outcomes according to project timelines.

4.20.3 Deliverables

4.20 TRAINING MANAGEMENT PLAN

4.20.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.20.3.1	Training Management Plan	4.20.2.1	10
4.20.3.2	Successful Execution of the Training Management Plan	4.20.2.2	10

Deliverable	*Confirmation of Review Time*
Training Management Plan	***10 Days***
Successful Execution of the Training Management Plan	***10 days***

4.21 Web-Based Training Development Plan

4.21.1 Objective

4.21 WEB-BASED TRAINING DEVELOPMENT PLAN

4.21.1 Objective

The Implementation Contractor will prepare and update as required a Web-Based Training Development Plan for the project.

Deloitte collaborates with DWSS to prepare and update a Web-Based Training (WBT) Development Plan for the NCSEAS project. WBT is a valuable form of training delivery that allows staff to complete training at any time, providing the flexibility required to accommodate their demanding work schedules. For example, standardized features, most common system activities, and system navigation can be in the form of a WBT as pre-work, post-work, and refresher training for learners.

We believe that an effective WBT program must resonate with CSE staff and teach skills that are applicable to day-to-day activities. WBTs are foundational in nature and can serve as either prerequisites for those audiences attending instructor-led classroom training, or as the primary method of training for specific types of audiences; for example, those end users who only need inquiry access to NCSEAS to complete their jobs. To the extent possible, Deloitte uses existing training accelerators that can be transferred from the base system in California. Our team works with the DWSS to tailor these accelerators and derive additional training content appropriate for NCSEAS. We also partner with the DWSS Web-based Training Center to house the NCSEAS WBT series. The Center provides easy access to the WBTs for DWSS employees, as well as local CSE Program Offices. This partnership provides ease of transition and ownership of materials during the rollout of NCSEAS, and provides a WBT training program that gives your staff the knowledge to be successful.

DEMONSTRATED ABILITY

For the State of New Mexico:

- ***Deloitte developed and implemented five web-based training modules to support more than 1,000 state employees in over 34 offices across the state***
- ***The WBT courses successfully augmented the overall training program***
- ***After completion of the statewide rollout, the project recorded over 6,500 successful WBT course completions***

4.21.2 Activities

4.21 WEB-BASED TRAINING DEVELOPMENT PLAN	
4.21.2	Activities
4.21.2.1	Develop a Training Management Plan which will:
A.	Describe the steps for the development of a web-based training component to augment classroom training sessions.
B.	Utilize the existing platform, tools, etc. where possible. This plan will also establish the basis for initial and ongoing use of computer and / or web-based training.
4.21.2.2	Execute the approved Web-Based Training Management Plan successfully

Our Approach for the Web-Based Training Development Plan

The Web-Based Training Development Plan defines and addresses the activities needed to augment classroom training sessions with a web-based training component.

Figure 4-28. Web-Based Training Component. Deloitte develops a Web-Based Training component that augments the overall training program for the NCSEAS project.

Similar to developing other training materials, Deloitte's process for developing web-based training follows the ADDIE methodology. ADDIE is an industry standard methodology for instructional design consisting of five phases: 1) Analyze, 2) Design, 3) Develop, 4)

Implement, and 5) Evaluate. Please reference Section VI: 4.20 Training Management Plan for additional descriptions of the ADDIE phases.

WBT Course Development

We use a systematic ADDIE-based approach for designing and developing the NCSEAS WBT program that is outlined in the following figure:

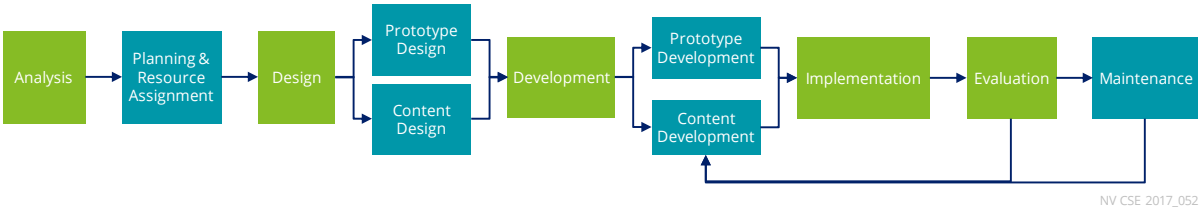


Figure 4-29. WBT Course Development Approach.

4. ***<u>Planning and Resource Assignment</u>: During the analysis phase, the scope of the WBT development effort is determined and the appropriate resources begin work on the project.***
5. ***<u>Prototype Design</u>: The user interface for the WBT is designed and made available for DWSS approval. Navigation paths are developed along with the color palette and overall look and feel of the WBT interface itself. Coordination with the DWSS Web-based Training Center begins during this phase to meet development requirements, confirm SCORM compliance (Shareable Content Object Reference Model – an e-learning standard), and verify compatibility with the Center's Learning Management System (LMS).***
6. ***<u>Prototype Development</u>: A sample WBT module using representative content and including the various course components to be utilized (e.g., explanations, demonstrations, simulations) is developed based on preliminary storyboards. The development team tests the prototype at this point for compatibility with the LMS and for usability by targeted end users.***
7. ***<u>Content Design and Development</u>: During design and initial development, storyboards become available for DWSS review. Note that while steps two through four basically occur in parallel, there are some interdependencies within the three steps. For example, the storyboards cannot be started until the user interface has been designed and approved. These interdependencies are noted within the WBT Development Plan and the project work plan accommodates these dependencies.***
8. ***<u>Testing and Revisions</u>: Upon completion of steps two through four, a trial version (referred to as the Beta version) of the WBT course is delivered and made available for client review and testing in the DWSS Web-based Training Center's LMS. Course tracking, reporting, assessment scoring, and launching functions are tested to confirm that the course works properly when launched to the target audience.***
9. ***<u>Development</u>: With the results of step five and any changes or improvements noted, full development begins on the final version (referred to as the Alpha version) of the course.***
10. ***<u>Implementation</u>: The Alpha version of the course is loaded into the DWSS Web-based Training Center LMS and made available to end users.***

WBT Development Schedule

The Web-based training development schedule positions the phases of the ADDIE methodology within the overall System Development Life Cycle and the detailed NCSEAS project plan. It highlights the key milestones detailed in the Web-based Training Development Plan and the coordination activities with the DWSS Web-based Training Center to implement the WBTs on the state's LMS. Please reference Section VI: 4.20 Training Management Plan for the overall training development schedule including WBT.

WBT Curriculum

We propose developing up to eight WBT courses (30 to 45 minutes in length each). These WBTs are foundational in nature, and can serve as either prerequisites for those audiences attending additional instructor-led classroom training or as the primary method of training for specific users. These WBTs are intended to cover training for the following DWSS core functions: Introduction to NCSEAS (including navigation of the system), Case Intake, Locate, Establishment, Case Management, Enforcement, Financials, Reporting, and Customer Service.

For this effort we coordinate with the DWSS Web-based Training Center. Exact content of the WBTs vary depending upon the specific roles and responsibilities of the targeted DWSS audience, and is confirmed during the End User Training Assessment. The following table provides a sample of WBT courses from some of our previous CSE projects. Other WBT topics may also include Tasks, Activity Logs, Reports, Case and Participant Maintenance, Case Initiation, Locate, Obligations Management, Collections, Customer Service, and Self-Service Website/Customer Inquiries.

Sample WBT Course	*Sample WBT Topics Covered*	
Introduction	• ***Introduction*** • ***System Overview*** • ***Getting Started*** • ***Training Strategy*** • ***Key Functional Areas***	• ***General Page Types*** • ***Navigating the System*** • ***Managing Tasks*** • ***Search Capabilities*** • ***Document Storage and Generation***
Forms and Reporting	• ***Introduction to Forms and Reports*** • ***Generating Forms*** • ***Document Imaging and Retention*** • ***Searching Document Images***	• ***Types of Reports*** • ***Accessing Reports*** • ***Customizing Reports*** • ***FTI and Other Security Issues***
Lifecycle of a Case	• ***Intro to Lifecycle of a Case*** • ***Methods of Case Initiation*** • ***Types of Activities Carried Out*** • ***Case Assignment***	• ***Case & Participant Overview Pages*** • ***Related Forms*** • ***Review Activities Related to Closing a Case***
Case Management	• ***Overall Process Flow of Case Management Activities*** • ***Case Type, Status, Function, and Category*** • ***Data Exchange Partners*** • ***Types of Communication***	• ***Establishment Related Activities*** • ***Locate Related Activities*** • ***Intergovernmental Related Activities***

Sample WBT Course	*Sample WBT Topics Covered*	
Enforcement	• ***Automated and Manual Enforcement Activities*** • ***Enforcement Related Tasks*** • ***Immediate, Non-Discretionary, Special, and Extraordinary Enforcement Actions*** • ***Reviewing/Managing Enforcement Related Activities***	• ***Enforcement Related Batch Interfaces*** • ***State and Federal Timelines*** • ***Role-Based Access***

Table 4-19. Sample Web-based Training Courses Developed by Deloitte on Previous CSE Projects. Deloitte's experience developing and delivering Web-based training on similar projects directly benefits development efforts on the NCSEAS project.

WBT Instructional Methods

WBT instructional methods describe the types of strategies to be employed to deliver content in support of the WBT learning outcomes. While there are a variety of instructional methods that can be used in a WBT component, we have selected the methods that have proved to be most effective for delivering system-related, technical learning to end-users. WBT courses utilize the following instructional methods:

- ***Explanations. End-users are led through brief presentations on key topics through description, with visual depictions where appropriate.***
- ***Demonstrations. End-users view demonstrations of actions they may complete in NCSEAS, in many cases delivered using screen shots of the corresponding functions taken directly within the solution.***
- ***Interactive Exercises. End-users complete actions based on given instructions that simulate the end-user experience within NCSEAS.***
- ***Evaluations and Quizzes. End-users take a course-end quiz or provide an evaluation to determine minimum competence and check for foundational understanding of the topic area covered by the WBT.***

Tools and Technology

We leverage an array of training tools and technologies to accelerate the training process. Based on preliminary assessments, a proposed option for WBT development is Articulate™ 360, which incorporates software simulations and demonstrations into the WBTs. Articulate™ 360 is considered a leading training industry tool for quickly developing eLearning content that is easily maintained by non-technical staff. The DWSS Web-Based Training Center staff may already use this tool (or similar version Storyline 2), which eases transition and further WBT development and maintenance after Deloitte's engagement ends. Articulate™ 360 WBTs can be easily deployed and tracked through an LMS. Articulate™ supports the inclusion of software simulations, quizzes, and other engaging experiences into the training curriculum. Articulate also supports closed captioning and voice, making it easy to create training that complies with Section 508 of the Rehabilitation Act.

Deloitte has experience working with a comprehensive collection of the best WBT and LMS tools and technologies on the market. We propose an assessment of the current Nevada LMS to ensure its ability to support a statewide execution of the NCSEAS training program,

including hosting WBTs, scheduling, registration, and hosting course assessments. Based on the assessment of the current LMS, Deloitte works with Nevada to confirm the complete use of the LMS, or to suggest alternative or hybrid methods to accomplish similar results (e.g., use of other tools including Microsoft Office Products).

Material Maintenance

After initial development of the WBTs and delivery as part of the Pilot implementation, we develop and subsequently provide updates and revisions to Web-based training materials for each of the three implementation Regions over the six month roll out period, as needed. Beyond this timeframe, DWSS completes web-based training updates.

Successful WBT Execution

We monitor WBT launch dates, completion records and pass rates, employee surveys on WBT effectiveness, and key metrics useful for evaluating the success of the WBT execution. These metrics provide actionable feedback to tailor the WBT execution efforts appropriately and confirm achievement of intended training outcomes according to project timelines.

4.21.3 Deliverables

4.21 WEB-BASED TRAINING DEVELOPMENT PLAN

4.21.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.21.3.1	Web-Based Training Development Plan	4.21.2.1	10
4.21.3.2	Successful Execution of the Web-Based Training Management Plan	4.21.2.2	10

Deliverables	*Confirmation of review time*
Web-Based Training Development Plan	***10 days***
Successful Execution of the Web-Based Training Management Plan	***10 days***

4.22 Security Management Plan

4.22.1 Objective

4.22 SECURITY MANAGEMENT PLAN

4.22.1 Objective

The Implementation Contractor will prepare and update as required a security management plan for the project.

The increased sophistication of cyber-attacks and publicized data breaches that have occurred in the state sector is concerning. This knowledge underscores the importance of a stringent security management approach to prevent a breach and unwittingly disclose sensitive information or become a cyber-attack victim.

Deloitte's dedicated Cyber Risk Services practice has over 12 years of state government experience. Our team of security professionals has extensive understanding and experience with the preparation of Security Management Plans (SMP), System Security Plans (SSPs) and IRS Safeguard Security Reports (SSR). Our security resources have worked on our CSE projects in California, Pennsylvania, Kentucky, Florida, Wisconsin, Texas, and Indiana. They have demonstrated security and technical expertise in establishing and implementing industry-leading standards for security safeguards, data protection, and regulatory compliance. Our teams have prepared our clients for IRS Audits with respect to the protection of Federal Tax Information (FTI) and helped to remediate findings from periodic on-site audit visits that have been conducted.

- ***Leading IT research firms have recognized Deloitte as the leader in the Information Security consulting space based on our client qualifications, experience, thought leadership, and vendor relationships***
- ***Deloitte was recognized by Gartner as a leading global risk management consulting service provider***

Deloitte is uniquely positioned to understand the requirements of the DWSS program. With security experience combined with extensive CSE experience, we recognize specific vulnerabilities and weaknesses that may exist in CSE systems and can collaboratively work with DWSS to develop the security management plan for the NCSEAS project.

4.22.2 Activities

4.22 SECURITY MANAGEMENT PLAN	
4.22.2	Activities
4.22.2.1	Develop a Security Management Plan which will:
A.	Provide a comprehensive overview of the approach to system and data security.
B.	Specify the standards and methodology for securing access to the system, the software, and the data.
C.	Establish the standards for the security component deliverables.
4.22.2.2	Execute the approved Security Management Plan successfully

Overview of System and Data Security

We bring to DWSS a detailed understanding of the sensitive nature of the data available in a CSE system, and recognize the criticality of safeguarding both the system and the data from unauthorized disclosure. The Security Management Plan that our team produces provides an overview of the specific security requirements for the NCSEAS and further describes the operational, technical, and management controls which must be in place to address the compliance requirements from federal and state standards. Automated Systems for Child Support Enhancement: A Guide for States (OCSE guidelines updated 2009), herein referred to as OCSE Guidelines and Internal Revenue Services (IRS) Pub 1075 (Published in September 2016) form the basis for these Security Requirements and require adherence to the National Institute of Standards and Technology (NIST-800-53 rev 4) security techniques and standards of practice for information security.

Security Management Plan (SMP)

Our team assists DWSS in maintaining a detailed Security Management Plan (SMP) for the boundaries of the proposed NCSEAS solution in accordance with identified security and privacy controls requirements. The SMP is an important compliance artifact for an effective

security audit or assessment. It documents the current level of technical security and privacy controls implemented for the solution, as well as procedural controls in place at DWSS. These security and privacy controls are incorporated in our solution to protect the confidentiality, integrity, and availability of the sensitive information.

The purpose of the SMP is to:

- ***Provide a clear and consistent view of the system architecture and how security has been designed within and around the NCSEAS***
- ***Explicitly define the authorization boundary for the NCSEAS***
- ***Describe the operational context of the NCSEAS in terms of mission and business processes***
- ***Describe the operational environment for the NCSEAS and relationships with or connections to other DWSS information systems***
- ***Provide an overview of the security requirements for the NCSEAS***
- ***Describe the security and privacy controls in place or planned for addressing those requirements including a rationale for tailoring select controls***

The following figure provides an example of some of the management, technical, and operational control families that the SMP addresses to meet the security requirements for the proposed NCSEAS solution.

Figure 4-30. Management, Operational, and Technical Controls for Security Requirements.

Where applicable, we provide a rationalized set of relevant controls based on the DWSS regulatory landscape that are then reflected within the SMP.

Having a Security Management Plan is a critical element of the NCSEAS project and a key component of a successful NCSEAS implementation. We leverage our security experience and knowledge to collaboratively work with DWSS to identify the appropriate controls to be in scope for the NCSEAS solution. The SMP is a dynamic document that is updated throughout the project lifecycle.

Prior to the Design phase, our team reviews with DWSS the applicable controls based on relevant business practices and regulatory standards (e.g., IRS Pub 1075). The initial SMP is then created during that phase and controls are evaluated to assess their effectiveness.

During the Development phase of the project, the SMP is refreshed to include the specific processes, and technologies used by the solution. A final evaluation of the controls is performed during the Testing phase and final updates to the SMP are delivered to DWSS before Go-Live.

Standards and Methodologies to Secure Access to System, Software and Data

The NCSEAS project is a transferred CA CSE solution which is already compliant with IRS PUB 1075 and National Institute of Standards and Technology (NIST) applicable standards. The updates to the transferred CA CSE solution to meet the goals and objectives specific to DWSS, require a comprehensive approach to documenting the standards and methodologies that are needed to secure access to the system, software, and available data. Our Security Management Plan and accompanying processes leverage the CSE solution security as a baseline and augment it, where required, to meet the specific requirements of DWSS.

Our focus is on providing a security solution that addresses IRS Pub 1075 (Published in September 2016), NIST 80-53 Rev 4, and OCSE Guidelines to enable a solution that also addresses security agreements between application and partner agencies. To achieve this, our team addresses the following areas in the Security Management Plan:

- ***Securing sensitive data, including Personally Identifiable Information (PII) and FTI, and protecting the larger set of CSE information from unauthorized access***
- ***Providing single sign-on (SSO) and authentication against a unified user repository for core system users***
- ***Providing audit trails with information required to uniquely associate a transaction to an account/user***
- ***Providing secure mechanisms for data validation, transfer and storage to maintain integrity***
- ***Addressing physical security, infrastructure security, data security, personnel security, access controls, network security and application security***
- ***Providing a holistic, defense in-depth strategy to mitigate the risks to establishing a secure, vigilant and resilient solution***

Security Component Deliverables

Our EVD methodology contains a variety of deliverable artifacts that are specific to system and data security. These artifacts can be leveraged to define consistent standards and requirements for the security component deliverables for the NCSEAS project. Some examples of the available security templates in our EVD methodology are provided in the following table.

EVD Artifact Name	*Purpose and Benefit to DWSS*
Security Architecture	***Defines the high-level security architecture for the core application solution. Security Architecture identifies and mitigates potential threats and vulnerabilities early in the project lifecycle. Our approach integrates security components from the start of the project rather than needing to retrofit security capabilities during downstream activities.***

EVD Artifact Name	*Purpose and Benefit to DWSS*
Security Architecture Checklist	***Helps practitioners execute a self-check in defining the Security Architecture and verifies that the captured Security Architecture is complete and correct.***
Security Requirements Checklist	***Assists practitioners in developing and confirming security requirements during the requirements validation process.***
Security Vulnerability Test Approach	***Outlines the objectives, responsibilities, and testing timeline for security testing. This document also includes details of the security vulnerability testing process from test and facilities preparation to documentation of the identified security vulnerability test scenarios.***
Security Threat Model	***Helps practitioners with identifying and documenting various security threats, threat agents and mitigation controls while defining the Security Architecture.***

Table 4-20. Examples of security deliverable templates available in Deloitte's EVD methodology.

Our team uses these templates and artifacts provide a starting point for the creation of the required security component deliverables for the NCSEAS project. These templates, along with the experience and knowledge of our testing team, provide a solid foundation to establish the standards for the Security Management Plan deliverable.

Security Architecture

The Security Architecture identifies security gaps and issues in various security layers and addresses them layer by layer. Deloitte proposes a logical architecture gap identification and security enhancement approach for the NCSEAS solution. Our security and audit protocols span across the architecture. One of the prime goals of our solution is to safeguard CSE case information and to grant access only to authorized personnel. An enhanced persistence layer also allows audit history for records in the database that acts as an auditing mechanism and also satisfies the DWSS requirement to track transactions performed by users.

4.22.3 Deliverables

4.22 SECURITY MANAGEMENT PLAN

4.22.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.22.3.1	Security Management Plan	4.22.2.1	10
4.22.3.2	Successful Execution of the Security Management Plan	4.22.2.2	10

Deliverable	*Review Time*
Security Management Plan	***10 days***
Successful Execution of the Security Management Plan	***10 days***

4.23 Operations Support Plan

4.23.1 Objective

4.23 OPERATIONS SUPPORT PLAN

4.23.1 Objective

The Implementation Contractor will prepare and update as required an operations support plan for the project.

After devoting the time and effort to implement the new NCSEAS, DWSS needs assurance that the system is fully operational on day one and remains that way every day after that. With several decades of experience in operations support, Deloitte brings a refined approach focused on operational stability, system reliability, continuous improvement, and mutual understanding. Our proposed team, who have extensive experience with the CA CSE solution (having maintained the system in production support and assisting in the build out of many enhancements) work with DWSS to make sure that DWSS gets the most out of the new NCSEAS for the end users and the customers they serve.

SECTION HIGHLIGHTS

Collaboration with Deloitte brings unique value to DWSS for Operations Support:

- ***Extensive operations and support experience with CSE and broader State government HHS systems of similar size and scope***
- ***Deloitte's EVD methodology, developed from best practices of hundreds of client engagements***
- ***Deployment and provisioning of IT services using ITIL standards***

The operations support activities for the NCSEAS solution are based upon the Enterprise Value Delivery (EVD) methodology used by our team during the Transition Phase where the implementation of the system occurs. This creates synergy as we transition from implementation to warranty and operations support. The operations support processes of our methodology define the activities for designing, implementing, and operating a world-class application management operation that is focused on driving sustained value.

Our EVD methodology and specific operations support processes are based on common-sense tactics to institutionalize a value-based service model and deliver on-target business outcomes. Based on IT Infrastructure Library (ITIL) concepts, our methodology delivers repeatable, consistent quality throughout the operations support life cycle. ITIL is the recognized standard for comprehensive best practices for IT service and support. Our ITIL-based EVD approach aligns ongoing operations efforts with production application management efforts. We establish an operations "service" catalog and a set of processes for continuous service improvement and potential service expansion when needed.

4.23.2 Activities

4.23 OPERATIONS SUPPORT PLAN	
4.23.2	Activities
4.23.2.1	Develop an Operations Support Plan:
A.	Specify the processes and procedures needed for day-to-day system operations.
B.	Establish batch job standards and online technical support standards.
C.	Identify the tasks necessary to establish the technical support team for equipment and data communications problem solving.
D.	Identify the tasks necessary to establish the customer support staff needed to triage application problems, manage data correction issues, and prioritize those issues needing immediate attention, in accordance with State policies and procedures.
4.23.2.2	Execute the approved Operations Support Plan successfully

While the goal of operations support and maintenance is just that—to keep the solution operating efficiently —we view it as another phase of continued improvement. We have developed our approach from this viewpoint, defining processes, standards, and tools that not only allow us to keep NCSEAS up and running, but also to fine-tune and optimize it for the best results. Utilizing our deep knowledge, experience, and proven processes from the operations support portions of our EVD methodology, we prepare a comprehensive operations support plan for the NCSEAS project.

Procedures for Day-to-Day System Operations

Operations support facilitates system availability and performance in accordance with established service-level agreements. Our support and continuous improvement activities leverage relevant tools, technology, and metrics-based feedback. The processes and procedures necessary to support day-to-day operations of the production NCSEAS and defined the Operations Support Plan are broken out into seven specific areas as reflected in the following figure.

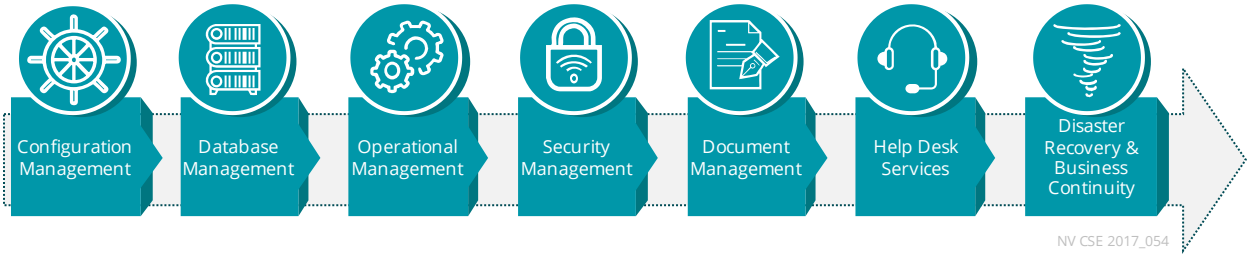


Figure 4-31. Seven Key Focus Areas for NCSEAS Operations Support.

Configuration Management

Our approach to configuration management support encompasses a set of activities that deliver improved functionality and reliable technologies to end users, meet performance expectations, and address ongoing operational needs in the field. Our Operations Support Plan provides a structured process to plan, test, and support configuration of new releases and upgrades to software, COTS components, technology platforms, and infrastructure with strict version control.

During the initial Inception Phase of the project, our team configures the tools needed to support the configuration management process during development, implementation and ultimately through ongoing support of the NCSEAS solution. The following table summarizes the configuration management processes we use to support maintenance activities which are reflected within the Operations Support Plan.

Configuration Management Activities	*Description and Outcomes*
Migration support	• ***Support software and technical platform migrations***
Release support	• ***Coordinate software release management and emergency implementation*** • ***Maintain application environments and version control***
Environment coordination support	• ***Coordinate operating systems and patches or upgrades of other COTS products and technologies*** • ***Document business systems blueprints***
Capacity planning support	• ***Provide system resource monitoring and forecasting*** • ***Perform database capacity planning***
Performance support	• ***Provide response time monitoring and problem resolution*** • ***Conduct load and performance testing and monitoring***

Table 4-21. Configuration management activities.

Database Management

Our database management activities for operations support focus on database administration and production support processes to optimize application and database server performance and availability. Database support is core to the operational platform and a critical aspect of our support for NCSEAS. The following table summarizes database management processes for operations support.

Database Management Activities	*Description and Outcomes*
Database coordination support	• ***Coordinate and consult with application teams for coordination of planned and unplanned database activities***
Database release support	• ***Test and migrate database code and structure changes to the development, integration, systems acceptance test, training, and load test environments*** • ***Provide database deployment scripts and playbooks for production migrations***
Database operations support	• ***Provide input into database standards identification and perform compliance monitoring*** • ***Develop database maintenance and reorganization scripts*** • ***Develop application data fixes*** • ***Develop scripts or utilities and accompanying documentation for refreshing lower environments*** • ***Monitor the database for performance and efficiency***
Performance support	• ***Provide database administration and performance tuning*** • ***Review database query performance and make recommendations for improvement***
Batch job support	• ***Create new jobs and coordinate with operations staff to schedule production batch cycles*** • ***Run the system testing environment daily*** • ***Work with the agency to transition batch support early in the first year of the O&M phase***

Table 4-22. Configuration management activities.

Operational Support

Our operational support approach facilitates systems availability and performance in accordance with service-level agreements. The Operations Support Plan addresses Operational Support activities including batch schedule management, batch performance analysis, and the successful integration of new batches and interoperability between

platforms. It also specifies an ITIL-based incident and problem management and resolution processes through a systematic framework that:

- ***Maintains normal operations as much as possible***
- ***Minimizes adverse impacts on business operations***
- ***Conducts root-cause analysis and promotes problem prevention***

We work with DWSS to correct production defects and coordinate migration of the fix into the production environment. Please reference Section VI: 4.33 Warranty Period (Initial Maintenance and Operation) for additional information about our proposed maintenance and operational support activities.

Security Management

Security management is a key component of operations support, encompassing security management, privacy and data protection, application security, identity and access management, vulnerability management, operations security, and business continuity management. In this case, the broad spectrum of security management processes addressing both NCSEAS and the ongoing operational support of the solution is addressed through the Security Management Plan. Please reference Section VI: 4.22 Security Management Plan for more details of how security requirements are addressed for the NCSEAS solution.

Document Management

We adhere to ongoing documentation management processes associated with operations support that maintains required system and operations documentation in synch with the production solution. As part of Operations Support plan we provide procedures the maintenance, review and storage of documentation related to the day-to-day operations of NCSEAS. This may include documents related to operations/run books as well as system documentation evolving from the design and development documentation created for each of the NCSEAS components. This documentation is kept current, stored, and maintained to be readily accessible and available as needed.

Version Control is Strictly Enforced

We plan to maintain the system documentation in the source repository in parallel with the NCSEAS technology components. Final versions of documents that have been reviewed and accepted are identified in the repository as "production" documents. Similar to technology components, documentation to be updated as part of NCSEAS maintenance activities must be "checked out" of the repository to apply required updates on the given document. Use of a document repository capability also allows us to print specific versions of system documents when needed and support the reporting of a component change history.

Tools to Enable Documentation

Program specifications and other documents are supported using Microsoft Office products. Our team brings extensive experience using Microsoft SharePoint as a collaborative workspace to manage system documentation internally. We utilize the State's repository, whether it is Vibe or another tool, to maintain the current inventory of documentation and deliverables. This experience provides enhanced collaboration and improved accountability for document control, creating a document management approach that avoids surprises and

lost updates. We have used the SharePoint tool to manage and control collaborative workspaces on projects such as the Pennsylvania CSE program, the Florida CSE solution, and the Texas integrated eligibility system.

Help Desk Services

An integrated help desk facilitates the flow of reported issues, incidents, and requests for rapid and effective resolution. The functionality of the help desk provides the foundation for the overall operational support framework as shown in the following figure.

Figure 4-32. Help desk support framework provides the point of entry for end users to receive support.

We plan the integrated help desk capability as a stack of services that together provide end-to-end support for DWSS and system users. The first line of entry into the process is generally through "super users" for the NCSEAS solution. Resolving issues and incidents at this level allows many questions and minor problems to be resolved immediately, which promotes efficient use of resources at the other levels and avoids overloading the modifications and maintenance teams.

Another entry point into the support process is through the Level 1 Service Desk. The Level 1 Help Desk is provided by the existing DWSS help desk resources using the in-place HEAT software. At this level the help desk receives calls from users, attempts to resolve minor issues or questions, or opens tickets to route issues for further triage and resolution. If a problem is not resolved at Level 1, the service desk escalates the ticket to the Level 2 maintenance support team for further action.

For Level 2 Help Desk support, our team addresses break-fix activities, batch resolutions, functional support, resolution of systems performance issues, and other problem tickets. The team performs the defect resolution activities while also escalating any incidents that

are modifications to the next level. Level 2 may also cover minor changes such as reference table updates, minor database updates, and minimal changes to screens. These minor enhancements do not require significant time commitment on the part of the maintenance team and do not materially influence the prioritization of issue resolution.

Help desk activities	*Deloitte help desk processes*
24x7 emergency telephone support access to technical staff	• ***Normal help desk support is provided on State business days from 8 AM to 5 PM PST, Monday through Friday.*** • ***Our team provides on call 24x7 resources in case of emergencies*** • ***Deloitte supports Level 2 issues while DWSS is responsible for Level 1. Level 3 and 4 required application changes are passed to the modifications team.***
Web-based technical and customer support resources	• ***Develop technical and customer support resources to be posted online*** • ***Possibly implement a live chat feature for customer support***
Single point of contact assigned to the agency for problem tracking and resolution	• ***Assign a single point of contact for problem tracking and resolution*** • ***Provide and implement problem tracking and resolution best practices***
Technical and customer support response time	• ***Agree on appropriate response times during contract negotiations*** • ***Monitor response times over the course of the contract*** • ***Provide and implement best practices in meeting response time targets***

Table 4-23. Deloitte help desk processes.

Disaster Recovery and Business Continuity

NCSEAS supports critical business processes that the citizens of Nevada depend on for CSE benefits. While it is difficult to imagine a scenario where the technology that supports NCSEAS is not operational, DWSS must have processes in place to support disaster recovery activities. Doing so creates as little interruption as possible to NCSEAS business processes and the citizens who rely on these applications.

Deloitte, in collaboration with the CSE Program, implements a structured contingency and escalation process in the event of system outage. We also help DWSS define a business continuity plan that covers business operational considerations such as communication needs, the availability of remote support, and backup procedures for staff. Please reference Section VI: 4.8 Business Continuity and Disaster Recovery Plan for more details of how the BC/DR plan is created and maintained for the NCSEAS solution.

Batch Job and Online Technical Support Standards

We have a sound understanding of the CA CSE batch architecture and operational intricacies of the many jobs that run each evening and form the baseline for corresponding batch processing in support of the NCSEAS solution. As part of the Operations Support Plan we establish an effective framework and standards for the successful integration of new batches specific to NCSEAS requirements as well as the resolution of issues with existing jobs and interoperability between platforms and NCSEAS components.

Through our Operations Support Plan we provide a structured and timely response to batch job failures and major system issues that are affecting an end user's ability to operate NCSEAS. Because of the vital and strategic functionality NCSEAS provides, we develop and follow structured procedures to resolve critical problems affecting production operations

quickly and efficiently. We evaluate the processes in place for the existing system and make improvements based on prior CS operations experience and the needs of the modernized NCSEAS system.

In the event of an unexpected issue, the plan provides an escalation process that includes contact with the appropriate on-call support staff from our team and, if necessary, designated DWSS staff. For example, if a batch job fails, the appropriate team member are notified and we communicate the following to appropriate team members or DWSS stakeholders:

- ***A statement of the problem***
- ***The batch job identifier, the program name, and the error return code***
- ***An estimate of the time to rectify the situation***
- ***If required, a proposed emergency schedule change to complete critical batch cycles in the specified batch window***
- ***Possible data corruption or inaccuracies***
- ***Recommended corrective actions***

Technical Support for Equipment and Data Communications

Support for production hardware and data communications is the responsibility of DWSS infrastructure resources but is a critical element of operations support, in particular for the resolution of reported production issues from end users. Our Operations Support Plan includes procedures for the engagement of hardware technical support resources as needed for problem resolution and to meet other support requirements such as hardware upgrades.

Staffing Plan

The Operations Support Plan includes a proposed staffing plan with detailed roles and responsibilities for the personnel required to operate, maintain and support NCSEAS in accordance with State policies and procedures. The following matrix provides a sample of roles on an Operations Support team including responsibilities, knowledge and skills, and recommended experience for each role. The specific inventory of roles included within the Operations Support Plan allows DWSS to plan for and provide the necessary training to corresponding staff members prior to the transition.

Role	Responsibility	Knowledge and skills	Recommended experience
Operations staff	• Maintain on-going operations • Participate in scheduled production meetings • Support daily, weekly and monthly production status reporting • Schedule and assist in monitoring batch production runs and in resolving issues	• Understanding of system architecture • Knowledge of system functionality and how it supports execution of business processes	1-2 years
Database administrators	• Plan, execute, test and implement database changes • Model new system changes in the database • Install and upgrade database server and application tools	• Knowledge of structured query language (SQL) • Understanding of storage technologies, memory management, disk arrays, NAS/SAN, networking	5-7 years

Role	*Responsibility*	*Knowledge and skills*	*Recommended experience*
	• ***Modify the database structure, as necessary, from information given by application developers*** • ***Tune the database and support other performance monitoring activities***	• ***Understanding of routine maintenance, recovery and handling failover of databases***	

Table 4-24. Sample maintenance roles to be transitioned to DWSS and included within the scope of the Operations Support Plan.

Execute the Approved Operations Support Plan

Once approved by DWSS and the designated stakeholders, the Operations Support Plan establishes the baseline for the operational support activities required for the new NCSEAS solution. This plan is developed and confirmed throughout the development phase. Successful execution and completion of the Operations Support Plan occurs in conjunction with the conclusion of the Warranty phase of the project.

4.23.3 Deliverables

4.23 OPERATIONS SUPPORT PLAN

4.23.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.23.3.1	Operations Support Plan	4.23.2.1	10
4.23.3.2	Successful Execution of the Operations Support Plan	4.23.2.2	10

Deliverable	*Confirmation of Review Tim*
Operations Support Plan	***10 days***
Successful Execution of the Operations Support Plan	***10 days***

4.24 Maintenance Transition Plan

4.24.1 Objective

4.24 MAINTENANCE TRANSITION PLAN

4.24.1 Objective

The Implementation Contractor will prepare and update as required a maintenance transition plan for the project.

Our experience has shown us that a well-orchestrated and structured program that provides opportunities for team members to work together and collaborate on a broad base of project tasks, together with formal learning and knowledge transfer, best prepares your staff to take over the management and support of the system at the conclusion of the maintenance period.

Deloitte has experience transitioning large system maintenance efforts to state and other vendor support staff. Our past service experiences with the Florida CAMS CSE system and other health and human services projects across the country provide leading practices that help us to reduce DWSS risk during the critical phase of transition while also continuing to maintain system availability and service levels. Our approach to maintenance transition includes the commitment to do what it takes to manage a smooth transition to full ownership of the new solution by DWSS staff.

It is the responsibility of our team to prepare DWSS to independently operate and maintain the new NCSEAS. Your staff must be well-trained and knowledgeable in each aspect of the new system across DWSS and partner agencies. We have proven techniques to confirm that knowledge transfer occurs throughout the contract period and in particular during the transition period. We conduct a transition assessment upon project completion in order to validate that the necessary level of knowledge transfer was achieved and to provide your team with lessons learned, leading practices, and other recommendations for efficient and effective ongoing operations and maintenance of the system.

SECTION HIGHLIGHTS

- ***To enable transition excellence of the new NCSEAS, our team builds upon our extensive CSE system maintenance and operations experience from California, Pennsylvania, and Florida***
- ***We are committed to engaging with and transitioning to DWSS an application maintenance methodology for ongoing maintenance support after the project concludes***
- ***We provide a maintenance transition and knowledge transfer approach that builds over time and leaves DWSS prepared for long term success***

Our established maintenance transition approach, based upon elements of our EVD methodology, reduces risk and promotes successful transfer of NCSEAS operations so that DWSS can continue to support end users as well as DWSS case workers, case participants, and other NCSEAS users and stakeholders to whom they deliver services. Our Maintenance Transition Plan covers three phases of activities to facilitate seamless system transition and enable DWSS to continue to meet their business obligations during the system transition process:

- ***Maintenance Transition Planning. Develop the detailed Maintenance Transition Plan that drives the knowledge transfer effort to DWSS staff.***
- ***Maintenance Transition Execution. Execute and monitor the approved Maintenance Transition Plan.***
- ***Maintenance Transition Closeout. Consolidate observations and findings from the transition execution phase and provide DWSS with an assessment of whether the transition process met/exceeded the defined acceptance criteria.***

These three phases provide an in-depth approach to realize a successful transition of maintenance support for a new system. The following figure provides an overview of our approach. The Maintenance Transition Plan deliverable is a direct outcome of the Transition Planning phase.

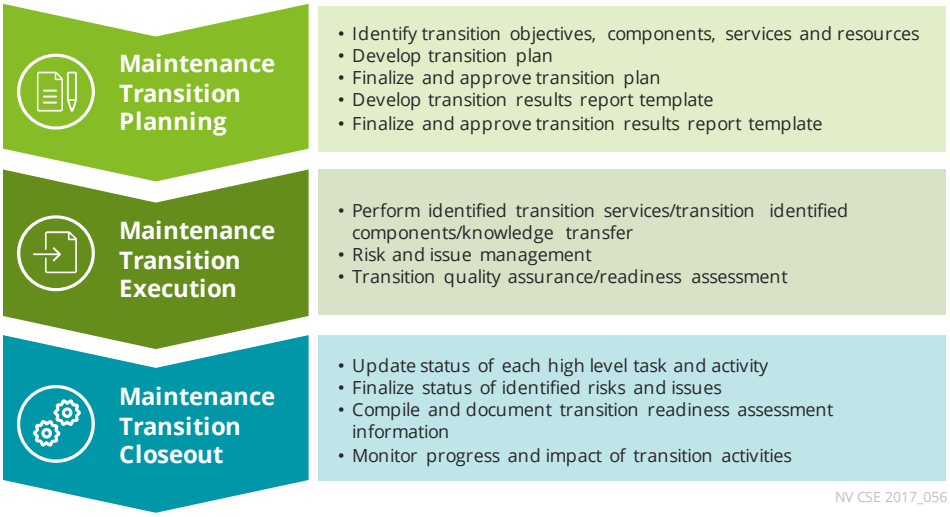


Figure 4-33. NCSEAS operations and maintenance transition phases. Transition is comprised of three phases: planning, execution, and reporting/closeout that provide an in-depth approach to realize a successful transition.

Our maintenance transition processes represent a well-defined, repeatable approach, and is a core component of our EVD methodology.

4.24.2 Activities

4.24 MAINTENANCE TRANSITION PLAN	
4.24.2	Activities
4.24.2.1	Develop a Maintenance Transition Plan which will:
A.	Specify the tasks necessary to turn over system maintenance to the state's application maintenance team, identifying all the routine tasks and procedures associated with system maintenance.
B.	At a minimum, this plan shall include transitioning of version control, source code contained within.
4.24.2.2	Execute the approved Maintenance Transition Plan successfully.

Deloitte supports an effective transition of knowledge and procedures necessary for DWSS to perform system operations and maintenance, as well as documentation for data, hardware, software, system and security. The following table provides a summary of NCSEAS support areas to be included within the scope of the Maintenance Transition Plan.

Tasks Necessary for Transition to DWSS

The following table lists specific areas transitioned to the state's application maintenance team as outlined in the Maintenance Transition Plan:

Areas to be transitioned to DWSS	
Application maintenance	***Methods, tools, and templates used in each Software Development Life Cycle phase supporting application maintenance, including requirements gathering/confirmation, design, development, test, and deployment. This also includes components used for Training of the NCSEAS system.***
Project management/ governance	***Activities that include project planning, project scheduling and estimation, project monitoring, tracking mechanisms, Earned Value Management, status reporting, and work order governance.***
System operations	***This includes batch operations, external and internal interfaces, performance management, system monitoring, and product licensing and upgrades.***

Areas to be transitioned to DWSS	
Technical architecture and solution	***The hardware and software components of NCSEAS, including prebuilt functionality, framework components, COTS products and custom modules; this also includes understanding the various components from the California source solution and the existing DWSS infrastructure and how they have been integrated to form the complete NCSEAS solution.***
Functional application	***Components of each CSE functional area of NCSEAS (e.g., Case Intake, Locate, Establishment, Case Management, Enforcement, Financials, Reporting) including corresponding code, data, and interface objects.***
Security	***Technology assets and products used to support the security of the solution, as well as documentation that defines security policies, information on the security organization, asset management and human resource security, physical and environment security, key procedures, and access control policies.***

Table 4-25. Areas of application maintenance support to be addressed by the Maintenance Transition Plan.

Stakeholder collaboration is essential in creating a transition plan that works. Throughout the project our team operates as an integrated project team to gradually transition DWSS resources into an ownership role for the tasks associated with maintaining the NCSEAS solution. Through this integrated team approach we enable NCSEAS project staff to independently execute day to day operations of the NCSEAS solution.

We establish the contents of the Maintenance Transition Plan deliverable at the beginning of the maintenance and warranty period using the established Deliverable Submission and Review Process described in Section VI: 4.38. The Maintenance Transition Plan deliverable includes our approach and methodology for transition as described earlier in this section. It includes activities covering the three transition phases (i.e., Planning, Execution and Closeout), subtasks, activities, and a proposed schedule for maintenance transition.

Documentation Update Procedures During Maintenance Transition

Embedded in the Maintenance Transition Plan, we provide a comprehensive document maintenance plan by first establishing and maintaining an inventory of relevant project documents and then assigning document owners for each. Each owner is responsible for identifying and coordinating updates that are needed to such documents after each new maintenance release. The documents are stored in a central repository to which stakeholders have appropriate access. The transition manager oversees document maintenance activities – confirming with each document owner that appropriate updates have been completed and provided in the centralized repository. These documents serve as the as the blueprint and reference documents for knowledge transfer and transition activities performed with NCSEAS project team members. This approach to document management provides DWSS team members the opportunity to continuously validate the tools and techniques being used to complete the transfer of knowledge, skills, abilities, and lessons learned to the right staff at the right time. The Maintenance Transition plan includes information, goals, and activities relating to:

- ***Management documentation. This documentation includes standards documents, technical bulletins, and management control procedures. These documents assist DWSS team members in subsequent management and enforcement of standards and best practices.***

- ***Configuration management information. This includes locations of files, source code, screens, databases, reports, forms, utilities, and parameters. In addition, it identifies files received by or submitted from NCSEAS.***
- ***System utilities documentation. This includes documentation for utilities that are developed during the system development life cycle that improve the team's ability to deploy, deliver, and maintain NCSEAS.***
- ***System documentation. This includes the location of current system functional documentation, operations guides, and development documentation.***

Staffing Plan

The Maintenance Transition Plan includes a proposed staffing plan with detailed roles and responsibilities for the personnel required to operate, maintain and support NCSEAS. The following matrix provides a sample of counterpart maintenance roles from our team including responsibilities, knowledge and skills, and recommended experience for each role. The specific inventory of roles included within the transition plan allows DWSS to plan for and provide the necessary training to corresponding staff members prior to the transition.

Role	Responsibility	Knowledge and skills	Recommended experience
Application manager	• ***Day-to-day support, development, implementation, and maintenance activities*** • ***Report Application Development Status with the monthly Maintenance Report*** • ***Provide impact assessment for each reported defect or change request and a schedule for completion, to be approved by DWSS***	• ***Overall knowledge of CSE*** • ***SDLC*** • ***Communications and presentation***	***7-10 years***
Programmer / analysts	• ***Understand and execute development activities*** • ***Create and execute unit testing*** • ***Fix defects and incorporate change requests*** • ***Application monitoring*** • ***On-call support*** • ***Data conversion and archival support for NCSEAS***	• ***Programming skills*** • ***Understanding of system architecture*** • ***Analyzing business requirements, generating project specifications and converting them into code, and applying knowledge of computer programming techniques and computer languages***	***5-7 years***
Help desk/ call center support analysts	• ***Receive application tickets and provide feedback to users*** • ***Document reported application deficiencies to maintenance team for resolution***	• ***Experience performing initial investigation, impact assessment, and prioritization of requests*** • ***Strong analytical skills***	***1-2 years***
Quality assurance analyst(s)	• ***Identify, document, and execute testing scenarios*** • ***Document any deficiencies identified during testing***	• ***Prior experience in writing, executing and validating a Quality Assurance Test Plan*** • ***Basic understanding of the structure of applications***	***2-4 years***

Role	*Responsibility*	*Knowledge and skills*	*Recommended experience*
Project management	• ***Manage and use resources for overall project delivery*** • ***Coordinate each aspect of SDLC based system development and maintenance*** • ***Leverage and employ application development leading practices from similar CS systems and processes***	• ***Understand project management methods and tools for planning, organizing and coordinating project activities*** • ***Knowledge of program management processes surrounding scope, issue and risk (QA) management, and the tools supporting these processes***	***5-7 years***
Data modeler/ reports	• ***Develop data models and reports to meet DWSS needs*** • ***Maintain data integrity by working to eliminate redundancy*** • ***Build and manage reports*** • ***Understand DWSS requirements for design of data models and reports***	• ***Understanding of system architecture*** • ***Knowledge of data dictionaries and other data-related artifacts*** • ***Experience with implementing data strategy policies*** • ***Experience with report design and development from user requirements***	***2-4 years***
Functional/ business analysts	• ***Understand CSE policies*** • ***Interact with DWSS staff to understand new requirements*** • ***Create requirements and design artifacts*** • ***Help troubleshoot production issues***	• ***Knowledge of business process design approaches and related activities and tools*** • ***Understand system functionality and how it supports execution of business processes*** • ***Understand forms, reports, interfaces and configuration elements***	***3-5 years***

Table 4-26. Sample maintenance roles to be transitioned to DWSS and included within the scope of the Maintenance Transition Plan.

Other Items to be Transferred to DWSS

The Maintenance Transition Plan also provides details around other items to be transferred to DWSS, including those items identified within the RFP:

- ***Contents of Collaborative Workspace. As part of the transition, we transfer the details and contents of the established project repository workspace for the NCSEAS project in a format that is agreed to by DWSS.***
- ***Help Desk tickets and Electronic Problem Log Reports. As part of the transition, we transfer help desk tickets and electronic problem log reports dating from the start of the project.***
- ***Help Desk tickets, change orders, and other System Changes. As part of the transition, we transfer help desk tickets, change orders, and other system change requests that are "works in progress," and the work needed to complete these items.***

- ***Security Processes and Framework. As part of the transition, we transfer security processes and framework, including security and password controls.***

Transition of Source Code

Finally, we also transfer, as part of transition and as specified in the Maintenance Transition Plan, full version control and source code for the application to the State. In addition to the version control and source code, we provide support and corrections for defects that may exist in NCSEAS prior to the final transition date or that were reported late in the transition period. We do this by providing a detailed inventory of existing defects prior to the final transition – including a description, final disposition and resolution for each item. We review this inventory with DWSS to confirm understanding and any follow-up actions or next steps required.

Execute the Approved Maintenance Transition Plan

Once approved by DWSS and the designated stakeholders, the Maintenance Transition Plan establishes the baseline for the Maintenance Transition activities required for the new NCSEAS solution. This plan is developed and confirmed throughout the Construction and Transition phases. Successful execution and completion of the Maintenance Transition Plan occurs in conjunction with the conclusion of the Warranty phase of the project once full project transition is complete.

4.24.3 Deliverables

4.24 MAINTENANCE TRANSITION PLAN

4.24.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.24.3.1	Maintenance Transition Plan	4.24.2.1	20
4.24.3.2	Successful Execution of the Maintenance Transition Plan	4.24.2.2	10

Deliverables	*Confirmation of review time*
Maintenance Transition Plan	***20 days***
Successful Execution of the Maintenance Transition Plan	***10 days***

4.25 Warranty Support Plan

4.25.1 Objective

4.25 WARRANTY SUPPORT PLAN

4.25.1 Objective

The Implementation Contractor will prepare and update as required a warranty support plan for the project.

Deloitte has experience in managing and meeting warranty requirements based upon our work as part of other state government contracts, including DWSS projects. Our disciplined defect resolution process allows us to track warranty defects to resolution during the warranty support period. In addition to warranty experience, Deloitte brings maintenance and operation experience from our work with DWSS as well as other states, including Pennsylvania, Wisconsin, Indiana, California, Texas, Michigan, Florida and West Virginia. Our warranty services support plan includes the use of experienced professionals who were involved in design and development phases of the NCSEA project.

We provide post-implementation maintenance and warranty support for a period of 24 months after the completion of the statewide rollout of the new NCSEAS solution.

The warranty support period provides for correcting defects resulting in a system malfunction due to nonconformance of the system against the applicable technical and/or functional specifications. The Requirements Traceability Matrix (RTM) in place at the completion of the Implementation phase, as well as the approved functional and technical design specifications, are used as the baseline to determine whether a reported system issue represents an actual defect.

The Post-Implementation Warranty Support Plan addresses defect correction, help desk support, system operations and maintenance, and ongoing knowledge transfer to DWSS staff during the warranty period. The maintenance and support of a system with the scope and scale of NCSEAS requires careful planning and proven processes. Our post-implementation support approach utilizes our Enterprise Value Delivery (EVD) methodology, includes continuous improvement strategies and provides support for complex operating models for systems such as NCSEAS. Our EVD methodology also incorporates the core principles of Software Engineering Institute's (SEI) CMMI, Information Technology Information Library (ITIL) and Project Management Body of Knowledge (PMBOK) that support the activities completed during the project life cycle. Section VI: 4.33 Warranty Period (Initial Maintenance and Operation) provides additional on the Warranty Period phase.

SECTION HIGHLIGHTS

Our post-implementation warranty and maintenance and operation support approach is built on:

- ***Methodology. Our solution is based on decades of continuous active participation in providing maintenance and operations for public sector systems similar in size and complexity to NCSEAS***
- ***Trusted and Collaborative Partnership. A common vision to help the State of Nevada and a structured production proven approach to post implementation support.***
- ***In-depth Knowledge. Deep understanding of the CSE systems federal certification requirements.***

4.25.2 Activities

4.25 WARRANTY SUPPORT PLAN
4.25.2 Activities
4.25.2.1 Develop a Warranty Support Plan which identifies the Implementation Contractor's approach to providing warranty support for the NCSEAS after statewide implementation.
4.25.2.2 Execute the approved Warranty Support Plan successfully.

The development of the Warranty Support Plan focuses on documenting the requirements and the plan for delivering the 24-month post implementation warranty support for the NCSEAS solution. Activities to be encompassed within this period, and to be addressed by the Warranty Support Plan, are described in the following.

Warranty Support

Proactive Defect Management

Even with prior planning and preparation, issues and defects are bound to arise during any project implementation. The post-implementation and warranty period can be particularly challenging as the users are learning a new system and/or new technology while still being required to serve CSE customers. The key to minimizing this challenge is to develop and deploy well defined mechanisms for defect reporting, tracking, and rapid resolution.

We structure defect reporting and resolution procedures by documenting the type of defect reported, assessing the impact and severity level, resolving the defect, and finally reporting the resolution. We expect that end users of NCSEAS report issues via the NCSEAS Help Desk. Our team is responsible for triaging and, when necessary, fixing and testing reported defects. Our post-implementation support team keeps NCSEAS and other stakeholders appropriately informed of the defect status as it goes through the resolution process.

Our team responds to logged service requests based on an assigned Severity level. Please refer to Section VI: 4.33 Warranty Period for details on severity level and incident reviews.

Defect management is focused on restoring service to DWSS through NCSEAS. Defect management seeks to determine the root cause and fix the problem so that it does not happen again. Our defect management approach is closely aligned with our incident and release management processes and seeks to continually improve our overall service, and in this case, NCSEAS availability. Release management is the process that controls how/when fixes are made and keeps the application stable and available to the end user while fixes or permanent solutions are implemented.

A key part of defect management is the recording of an incident resolution. This information is used to improve the time to resolution if future incidents of the same type occur, and also assists in the identification of permanent solutions. The following benefits are at the heart of our approach to defect management:

- ***More effective and efficient incident handling***
- ***Increased service quality***
- ***Reduction in the number of incidents and problems***
- ***The development of permanent solutions***

Proactive Defect Management attempts to identify and control known defects or problems before they occur through the evaluation of trend data. This process allows future incidents

to be minimized by conducting trend analysis and targeting and implementing preventive actions. Proactive Defect Management includes communicating system information to DWSS without the need to report an incident or ask for future assistance.

Execute the Approved Warranty Support Plan

Once approved by DWSS and the designated stakeholders, the Warranty Support Plan establishes the baseline for the Warranty Support activities required for the new NCSEAS solution. This plan is developed and confirmed throughout the Construction and Transition phases. Successful execution and completion of the Warranty Support Plan occurs in conjunction with the conclusion of the Warranty phase of the project.

4.25.3 Deliverables

4.25 WARRANTY SUPPORT PLAN

4.25.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.25.3.1	Warranty Support Plan	4.25.2.1	5
4.25.3.2	Successful Execution of the Warranty Support Plan	4.25.2.2	10

Deliverables	*Confirmation of review time*
Warranty Support Plan	***5 days***
Successful Execution of the Warranty Support Plan	***10 days***

4.26 Development and Operations Hardware and Software

4.26.1 Objective

4.26 DEVELOPMENT AND OPERATIONS HARDWARE AND SOFTWARE

4.26.1 Objective

The purchase of development hardware and software will take place through the Implementation Contractor's agreement with the Program. While the State requires each vendor to include their costs for all base components and third party equipment in Attachment I, Project Costs, the State, at its sole option, reserves the right to procure any or all of the required components and equipment from another source, based upon specifications provided by the successful vendor.

We propose environments in support of the NCSEAS project that meet RFP requirements and provide a controlled migration path for the solution from development and test environments through to the production environment, supporting initial implementation and allowing for continual maintenance and enhancement of the proposed solution.

We recognize that DWSS has full discretion in determining if it is in the interest of the NCSEAS project to purchase any or all of the hardware or software proposed by our team. If the choice to purchase is made, the purchase of the hardware or software follows the established procurement process of the State, and DWSS pursues a sourcing strategy that results in the best value acquisition of the needed technology that meets the recommended purchase schedule. The decision making and procurement process approach is clearly

outlined in the Development Hardware and Software Plan and is consistent with other DWSS projects.

Alternately, as indicated in the RFP the State may require the implementation contractor to procure and provide (i.e., resell) to the State the required software and hardware for the proposed solution. Deloitte Consulting Product Services LLC, a subsidiary of Deloitte Consulting, can provide hardware and software licenses, to the extent indicated in our proposal, as a reseller with the exception of certain products as indicated following sections. The actual software licenses, warranty agreements and maintenance agreements will be executed between the State and the applicable vendor. This is standard practice and provides the State with a direct relationship with the vendor for more effective long term support. In this case, each obligation, if any, to purchase and deliver hardware, software and other tangible products shall be assigned by us to Deloitte Consulting Product Services LLC (DCPS). DCPS will perform the activities contemplated by the Statement of Work that are or may be deemed to be a resale of tangible products for any purpose, although Deloitte Consulting may serve as an agent for DCPS solely for the purposes of invoicing, and collecting payment, with respect thereto. Hardware, software and other tangible products will be provided to the Client under the third-party vendor's agreement accompanying such hardware, software or product, and its use will be governed by the terms thereof. In addition, the warranty and support offered by the third party manufacturer or software developer will be as set forth in such agreement, and the Client shall look directly to such third party manufacturer or software developer with respect to such warranty and support obligations. The Client shall permit Deloitte Consulting to access and use such hardware, software, and other tangible products as necessary for purposes of Deloitte Consulting's performance of the Services.

SECTION HIGHLIGHTS

- ***NCSEAS Development Environment is implemented according to the detailed Hardware and Software Configuration Plan.***
- ***Our plan for the development environment addresses key requirements such as configuration management, developer security, and alignment with other environments.***

Audit Client Products

Some of the software components of our proposal for the NCSEAS solution, include products of Microsoft and Perforce Software (Summit Partners). The Microsoft products are Microsoft Office, Project, SharePoint, and Visio; the Perforce Software product is the Code Management software.

Microsoft Corporation is an audit client of Deloitte and Touche LLP ("Deloitte & Touche") and Summit Partners is a non-client venture capital firm that controls audit clients of Deloitte & Touche. Deloitte and Touche is an affiliate of Deloitte Consulting.

The Security and Exchange Commission (SEC) and other public accounting regulatory and oversight groups require an auditor to remain independent of its audit clients. There are several financial and business activities affected by independence requirements. In particular, Rule 2-01 of SEC Regulation S-X (Rule 2-01) and the SEC's Codification of Financial Reporting Policies (Codification) describe restrictions that an auditor must observe with respect to clients in order to maintain independence.

The SEC has viewed an auditor reselling a client's products (such as hardware or software) as creating the appearance of a mutuality of interest that impairs independence. Such an activity could be construed as the auditor acting as an agent of the client and profiting from sales of the client's products. Other activities that could impair independence are for an auditor to assume responsibility for maintaining and supporting a client's products.

We therefore request that the State acquire any necessary Microsoft and Perforce products as well as any other products that may be those of audit clients of Deloitte & Touche directly or through alternative procurement channels and that any maintenance and support services for these products likewise be procured directly.

We also understand that DWSS provides infrastructure services and shared-services environment for NCSEAS out of the State Data Center, similar to other DWSS projects. Our team works collaboratively with DWSS to support the infrastructure for the system and the adherence to these items is documented in the Hardware and Software Plan.

We create a Hardware and Software Plan that includes details regarding the environment used to support development team efforts through the development, implementation, and maintenance of the new NCSEAS. Our lead technical architect and lead developer use established coding standards, proposed hardware and software, and their extensive technical knowledge and experience to provide a development environment that is stand-alone. It does not disrupt other system activities or environments, and manages our development team's need for code development and testing.

4.26.2 Activities

4.26 DEVELOPMENT AND OPERATIONS HARDWARE AND SOFTWARE

4.26.2 Activities

4.26.2.1 The vendor must include within their cost proposal all server, data storage, virtualization, cables, cards, connectors and other hosting, imaging and server related equipment necessary to fully satisfy the State's RFP requirements and properly operate the vendor's proposed solution. This includes equipment necessary for proof-of-concept, development, test, user acceptance, training, and final UI production processing environments (refer to Section 4, Scope of Work for additional information).

A. Equipment proposed by the vendor must be all new mainstream computing equipment offered by leading computing equipment manufacturers.

B. The State reserves the right to purchase equipment through the vendor as part of the RFP and/or through other available resources approved by the State.

C. If the vendor's proposed solution requires PC and/or printer equipment of higher performance, capacity, and/or technical capability than the State's current configurations described in Section 2, Background, then the vendor must propose necessary PC, printer and related network connectivity equipment, as well as related costs, required to properly operate the proposed solution.

D. Up to 500 end-users may require new or upgraded equipment depending on the proposed solution's operational needs.

E. Development, Testing and Training Environments

F. The State envisions using pre-production environments to facilitate design, development, test, conversion, user acceptance, and training project tasks. Each environment, either physical or virtual, must use mainstream industry-standard hardware, software and relational database management products. Security and network communication protocols must be compatible with existing State LAN and WAN specifications.

G. While the State requires each vendor to include their costs for all base components and third party equipment in Attachment I, Project Costs, the State, at its sole option, reserves the right to procure any or all of the required components and equipment from another source, based upon specifications provided by the successful vendor.

H. Within Attachment I, Project Costs, vendors must provide a comprehensive equipment list including equipment make, model and primary configuration.

An understanding of the NCSEAS architecture is integral to understanding design, development, and implementation of the solution, and how the application environments support the vision of being able to respond quickly to changes in business requirements. We plan to leverage EIT's existing infrastructure for this project. However, please refer to Section VII: 5.14 Project Software Tools, where we cover the server, data storage,

virtualization, cables, cards, connectors, and other equipment necessary to satisfy the State's requirements.

System Development Environment Approach

NCSEAS is proposed to be supported across two physical environments consisting of 9 logical environments to support the development, data-conversion, testing, training, implementation, maintenance and operation needs of the system. The term "physical environment" refers to the installation of server hardware, peripherals, and network components as required for implementing the application and supporting processes. Each environment is an integrated environment that is used for the duration of the contract. The two physical environments and 9 logical environments to be utilized for the development and implementation of NCSEAS are:

- ***Non-Production: Development, System Testing, Conversion, Performance Testing, User Acceptance Testing, Training, and Certification***
- ***Production: Production – Staging, Production***

A logical development environment is established that fully supports code development and unit testing. A separate logical test environment is established to support initial integration testing (and ultimately follow-on system and user acceptance testing as well). The first two logical environments are prepared in time to support system development activities.

Development Environment

This logical environment allows for the development and building of the transfer application, and contains the base system's application source code and the changed source code required for NCSEAS. Within the development environment, customization, coding, and unit-testing activities are performed on the system application software. Primary users of this environment include developers and engaged technical staff.

The development environment infrastructure includes the tools required for application developers to perform code and unit test activities. The development environment hosts the project and application development hardware and software, and includes configuration and version management tools. Each developer is provided with an instance of the Perforce tool, allowing developers to independently code, build, and unit test application modules without affecting other developers in this environment. This environment also contains the existing CA CSE code base as the starting point for development and modification of that transfer system software.

A Continuous Integration Environment (CIE) is used in the development environment to enforce check-in and check-out features so that incomplete code is not promoted to higher environments, while still offering the opportunity for the development team to test code in the development environment. The development environment details provided in the configuration management plan will be reviewed and edited regularly along with the coding standards to confirm that the latest available tools and technologies are utilized for NCSEAS development.

System Test Environment

The primary users of the system test environment include testers, technical developers, and other key NCSEAS stakeholders. This environment is configured with infrastructure required to deploy various application components, particularly to link these components with various external and internal interfaces.

The system test environment supports the following testing activities:

- ***Integration Testing. End-to-end string testing with interfacing partners and systems prior to formalize system testing.***
- ***System Testing. Validation of system functionality to maintain conformity to functionality specifications. This confirms that approved modifications do not have an undesirable effect or an unintended consequence on the system itself.***
- ***Performance Testing. Testing of the performance of the system under estimated production load volumes***
- ***User Acceptance Testing. Final testing on approved system changes before these changes are migrated to the Staging environment***

The proposed solution supports real-time or near real-time interfacing with a number of systems including IV-A, IV-E, Title XIX, and Department of Justice, dependent on when data is sent and received. The integration environment mimics the production environment in that it can properly process and interface in real-time with other systems. While the development environment supports building and testing the multiple development efforts concurrently, once the pieces built by different developers are completed they are integrated and tested to deploy the final solution. The integrated solution is not typically tested in the development environment; the proposed solution utilizes a dedicated integration test environment.

Staging, Training, Certification, and Production Environments

The remaining environments include the staging, training, certification, and production environments. These are set up during development activities to support the migrations necessary for staging for production, training of the users, certification activities, and ultimately the production environment.

Hardware and Software Plan

In the Hardware and Software Plan, we identify the hardware and software required for the solution along with the proposed procurement schedule for each item. We work with DWSS to determine the procurement schedule based on the NCSEAS project milestones, and assign the procurement dates to allow for technologies to be available only as early as required to avoid software maintenance agreements starting earlier than needed.

For the Development and Test environments in place to support the successful implementation of NCSEAS, it is critical that environments be set up similarly to what exists in the production environment. This approach reduces the risk of the system code working differently across environments due to pieces of hardware, software, or certain other technology components not being in place during development or testing. It may be necessary for hardware, software, or other related components be purchased or made

available in multiple environments to support this approach. Within the Hardware and Software Plan, our team documents, in detail, the needs of each environment as well as a Hardware and Software Procurement Plan as outlined in 4.10 Development Hardware and Software Purchase Plan.

Proposed Hardware/Software

The proposed hardware/software lists the capabilities associated with each tier of our NCSEAS solution architecture and identifies the Deloitte proposed component for each portion of the solution. In addition to the re-use of components where feasible, our approach is designed to leverage other proven, open standards-based products from leading vendors in order to reduce implementation risk and lower the cost of ongoing support. Please refer to Section VII: 5.14 Project Software Tools for the full list of proposed hardware/software.

4.26.3 Deliverables

4.26 DEVELOPMENT AND OPERATIONS HARDWARE AND SOFTWARE

4.26.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.26.3.1	Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software.	4.26.2.1 A ~ H	5

Deliverables	*Confirmation of review time*
Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software	***5 days***

4.27 System Requirements and Design

4.27.1 Objective

4.27 SYSTEM REQUIREMENTS AND DESIGN

4.27.1 Objective

The system requirements and design objective is to represent the documentation of key system planning and implementation events. The review and approval of the functional and technical designs will establish that the Implementation Contractor is building the system to conform to the requirements.

System requirements and design requires proper planning, development, management, and traceability in order to achieve success on a large implementation project. A missed requirement or false assumption can have significant impacts on whether DWSS is able to achieve federal certification of the CSE system. Effective requirements planning activities are as much a business issue as a technology issue. That is why our approach combines equal parts business insight and technology know-how. Deloitte's Enterprise Value Delivery (EVD) methodology provides the necessary structure, along

Deloitte has conducted more than 220 requirement/JAD sessions for CSE in Indiana, over 120 in Texas, and over 250 in Florida, the latter resulting in a successful, federally certified CSE solution. In Oregon we recently conducted over 40 requirements elaboration JRP meetings and over 150 JAD sessions.

with the flexibility to apply a comprehensive set of tools and templates tailored to the particular demands of the NCSEAS project.

Our proven approach to requirements management provides industry-leading requirements planning, validation, and management of the requirements in a CSE system. Our team has developed the requirements for 5 of the 7 new CSE systems across the country. The approach we take integrates our management and traceability processes, methods, and tools. Both functional and technical requirements are validated, confirming the business and technical aspects of the solution. Incorporating our deep knowledge and experience of the subsystems that make up CSE, Deloitte provides a comprehensive understanding of the necessary requirements for subsystems from case intake through financials and reporting. We have a proven record of requirements validation and system design that fit the needs of our clients. Our success stems from our approach to performing requirements elicitation/confirmation by CSE subsystem with a focus on determining any gaps with the transfer solution using our proven EVD methodology. For example, Deloitte recently went through a very similar Requirement and JAD process for transferring the same CA CSE solution to Oregon. This included conducting over 40 requirements validation meetings and over 150 JAD sessions. This recent experience with the same system being transferred to DWSS has Deloitte best positioned to work with DWSS in conducting successful requirements elaboration and design meetings.

The following provides a high level schedule view of the System Requirements and Design scope of work for the NCSEAS project.

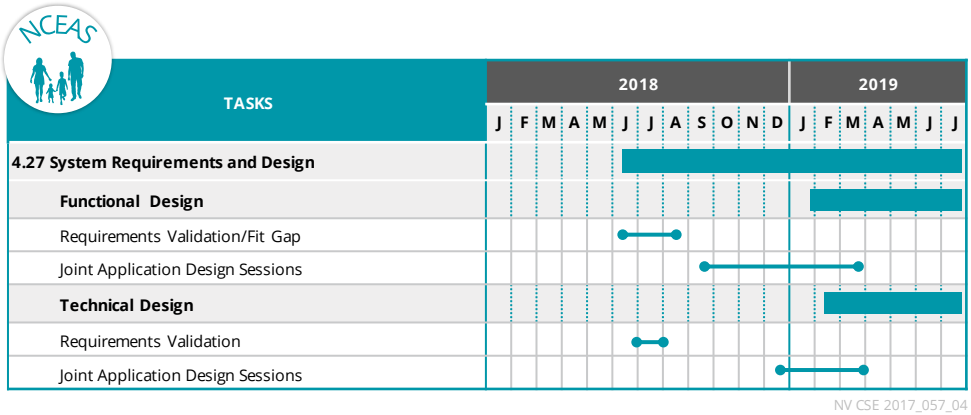


Figure 4-34. System requirements and design timeline.

4.27.2 Activities

4.27 SYSTEM REQUIREMENTS AND DESIGN	
4.27.2	Activities
4.27.2.1	The Program has grouped all requirements into either Functional Requirements or Technical Requirements. Within these requirement groupings are the following categories:
A.	Functional Requirements
1.	Case Initiation;
2.	Locate;
3.	Establishment;
4.	Case Management;
5.	Enforcement;
6.	Financial Management;

7. Reporting;
8. Customer Service; and
9. Ease of Use.

B. Technical Requirements

1. Core Architecture;
2. Archive and Purge;
3. Tiered and Modular Architecture;
4. Languages;
5. Performance;
6. Communications;
7. System Backup and Recovery;
8. Database;
9. Security;
10. Interfaces;
11. User Interfaces;
12. Document Generation and Document Management;
13. Data Warehouse and Business Intelligence;
14. Code Quality and Maintainability;
15. Development Tools;
16. Automated Referral Processing;
17. Calendar Management;
18. Alerts Management; and
19. Custom Service.

4.27.2.2 Although the Program has developed an initial set of requirements within these categories, the Implementation Contractor must further specify requirements to a sufficient level of detail to provide the basis for each functional and technical feature of the NCSEAS. It will not be sufficient to simply document the current functionality of the California transfer system. The Implementation Contractor shall not conduct Joint Application Design (JAD) Sessions without the participation of subject matter experts from the Program. Additional requirements may be discovered in this process and must be addressed in the functional and technical designs and the implemented the NCSEAS system. Requirements not reasonably anticipated by the Implementation Contractor will be subject to the change control process as applicable.

4.27.2.3 Requirements Traceability Matrix

A. The Implementation Contractor will prepare the RTM deliverable to document each of the baseline requirements, the changes that adjusted or expanded the requirements, the system components that implemented each requirement and the tests that verified them.

B. The Implementation Contractor will maintain the RTM on an ongoing basis. The QA contractor will review the RTM on a periodic basis to ensure that all entries conform to project requirements.

C. The Implementation Contractor will purchase the RTM software tool, subject to the Program's approval of the tool. The Program's staff, the PMO contractor, and the QA contractor will have copies of this tool so they can read and review the RTM. Functional designs, technical designs, test case development, code construction and unit testing, test execution, and training materials will address all requirements.

4.27.2.4 Functional Design

A. The Implementation Contractor will present the functional design for the NCSEAS to the Program's staff for review. The Implementation Contractor will revise the design with the advice and consent of the Program's staff before submission of the final deliverable.

B. The Implementation Contractor's functional design responsibilities include:

1. Provide proposed schedule and locations for JAD sessions.
2. Ensure that the contractor's functional experts are on-site during the JAD sessions.
3. Conduct JAD sessions and document functional aspects of the design.
4. Using the baseline requirements as a starting point, specify the functional requirements to a greater level of detail such that the functional requirements provide the basis for each functional feature of the NCSEAS; update the RTM accordingly.
5. Provide a draft report of each JAD session, including issues addressed and decisions made, to the Project Management Team.
6. Provide a final report to Project Management Team of each JAD session, incorporating comments and revisions provided by the Program.
7. Gain the necessary understanding of state processes, requirements, and data.
8. Define ease of use standards.
9. Describe the business processes that will exist as a result of the NCSEAS implementation.
10. Identify any gaps between current and future business processes.
11. Validate needs through prototyping of forms / screens, menu navigation, and business functions.
12. Prepare the functional design deliverable(s).
13. Document issues and decisions in the functional design deliverable(s).
14. Conduct walk-through of deliverable(s).
15. Revise deliverable(s) as a result of the review and approval process.

C. A functional design document will address each of the requirements grouped within the component. The Implementation Contractor may combine some requirements into a single design in order to reduce repetition. Each functional design will identify the requirement addressed and articulate the goal and objectives of the requirement. The functional design will identify and cite the relevant policy and statutory constraints. The functional design will describe known assumptions and identify issues. As issues relevant to the requirement are resolved, the Implementation Contractor will document the resolution in the design document.

D. The functional design will identify the staff roles of system component users and describe the security controls necessary to enable access to authorized users. The functional design will define the method for documentation of user actions. The functional design will describe the standard usage of the functions and the interaction between staff and system. The functional design will provide an overview flow of the usage of the component and will provide a layout for screens, forms, reports, and input and / or output files.

E. The functional design documents will include sections providing details about the general system design, the detailed system design, system specification, software requirements, the database model, the data dictionary, and use cases. JAD sessions will provide input for the functional design documents. The Program's Project Management Team will schedule JAD sessions as often as needed to ensure that the functional design is well understood and specified. The Implementation Contractor will update the documents as the participants of the JAD sessions unravel complicated functions to maintain the accuracy of the design.

F. The functional design will specify at a minimum:

1. Data derivation formulas for complex operations
2. Edit criteria
3. User alerts
4. Workflow events and algorithms
5. Entries to chronology files
6. Documents to be generated
7. Screen navigation options
8. User responses to error messages and alerts
9. The functional design will identify data initialization and operations necessary at the time of implementation.
10. Each description of a functional design element will reference the requirement that it implements. This cross-reference to objectives will establish traceability for development, testing, and training staff.
11. The Implementation Contractor will present functional design components to the Program's staff for review. The Implementation Contractor will revise each section with the advice and consent of the Program's staff before submission of the full deliverable. The Implementation Contractor may group functional design presentations in a logical manner for clarity of presentation.

G. The Implementation Contractor must update the functional design documentation to reflect any functional design changes for Program's approval prior to deployment of the changes. Functional design documentation must be maintained through completion of the warranty period.

4.27.2.5 Technical Design

A. The Implementation Contractor will present technical design sections to the Program staff for review. The Implementation Contractor will revise each section with the advice and consent of state staff before submission of the full deliverable. The Implementation Contractor may group technical design presentations in a logical manner for clarity of presentation.

B. The Implementation Contractor's technical design responsibilities include:

1. Provide proposed schedule and locations for technical JAD sessions.
2. Ensure that the contractor's functional and technical experts are on-site during the JAD sessions
3. Conduct technical JAD sessions as necessary and document technical aspects of the design.
4. Using the baseline technical requirements as a starting point, specify the technical requirements to a greater level of detail such that the technical requirements provide the basis for each technical feature of the NCSEAS; update the RTM accordingly.
5. Provide a draft report of each technical JAD session, including issues addressed and decisions made, to the Project Management Team.
6. Provide a final report to the Project Management Team of each technical JAD session, incorporating comments and revisions provided by the State and Program.
7. Gain the necessary understanding of state processes, requirements, and data.
8. Analyze and refine the database design.
9. Validate needs through prototyping of forms / screens, menu navigation, and business functions.
10. Prepare the technical design deliverable.
11. Document issues and decisions in the technical design deliverable.
12. Conduct walk-through of deliverable.
13. Revise deliverable as a result of the review and approval process.

C. A technical design document will address the means for implementing the functional design. The technical design will identify all the system components necessary for software development and operation. The technical design will address database components including an entity relationship diagram of the pertinent database tables together with detailed documentation of all system tables and columns. The technical design will identify and specify all system objects. The technical design will identify and specify all job control as well as restart and recovery provisions.

1. The technical design will address, as a minimum, the following aspects of the NCSEAS system:
2. System architecture, addressing the distinct tiers and major integration points that define the system.
3. Major subsystems and details about each major subsystem's internal design.

4. Database design, including an entity relationship diagram of the database tables together with descriptions of all tables and columns.

5. Security architecture, including how the system will implement roles-based security, ensure both at-rest and in-transit data security, and if and how the system will segregate and protect more sensitive data (e.g., Personally Identifiable Information (PII), Protected Health Information (PHI), and Federal Tax Information (FTI)).

6. Key application patterns and technical solutions to implementing those patterns.

7. Key system objects and services and their responsibilities in the architecture.

8. Sufficient information to convey the coding specifications to the implementation developer(s).

D. The Implementation Contractor will present technical design sections to the Program's technical staff for review. The Implementation Contractor will revise each section with the advice and consent of Program's staff before submission of the full deliverable. The Implementation Contractor may group technical design presentations in a logical manner for clarity of presentation.

E. The Implementation Contractor must update the technical design documentation to reflect any technical design changes for Program's approval prior to deployment of the changes. Technical design documentation must be maintained through completion of the warranty period.

4.27.2.6 Detailed Requirements

A. Within the functional and technical groupings are a number of requirements. The Implementation Contractor will review the requirements and ensure their understanding of these requirements.

B. Additional detail may be added to these requirements when necessary for clarity.

C. The functional and technical designs will address all requirements.

D. The Implementation Contractor may combine logical groupings of requirements into a single design deliverable series for clarity and to minimize redundancy.

E. The Implementation Contractor must update the detailed requirements documentation to reflect any detailed requirements changes for Program's approval prior to deployment of the changes. Detailed requirements documentation must be maintained through completion of the warranty period.

Requirements Validation

Once the project is initiated, Deloitte works closely with DWSS to clarify any requirements, make adjustments due to changed circumstances, and enable a common understanding. Deloitte collaborates with DWSS to fully understand the scope, purpose, and implications of each requirement. We conduct Requirements Validation sessions with the Subject Matter Experts and application team to confirm the understanding of the requirements and to develop detailed functional and technical requirements.

Deloitte has made a significant investment in creating complete business process models that encompass a full CSE system, using our IndustryPrint modeling tool. These models incorporate our extensive CSE experience in multiple states and cover every process in CSE to identify any gaps in the baseline requirements laid out in the RFP. We bring these models to the Requirement Validation sessions to identify or clarify requirements and business processes. The process models are interactive, allowing Deloitte and DWSS to drill through the various subsystems, processes, models, and, ultimately, requirements mappings.

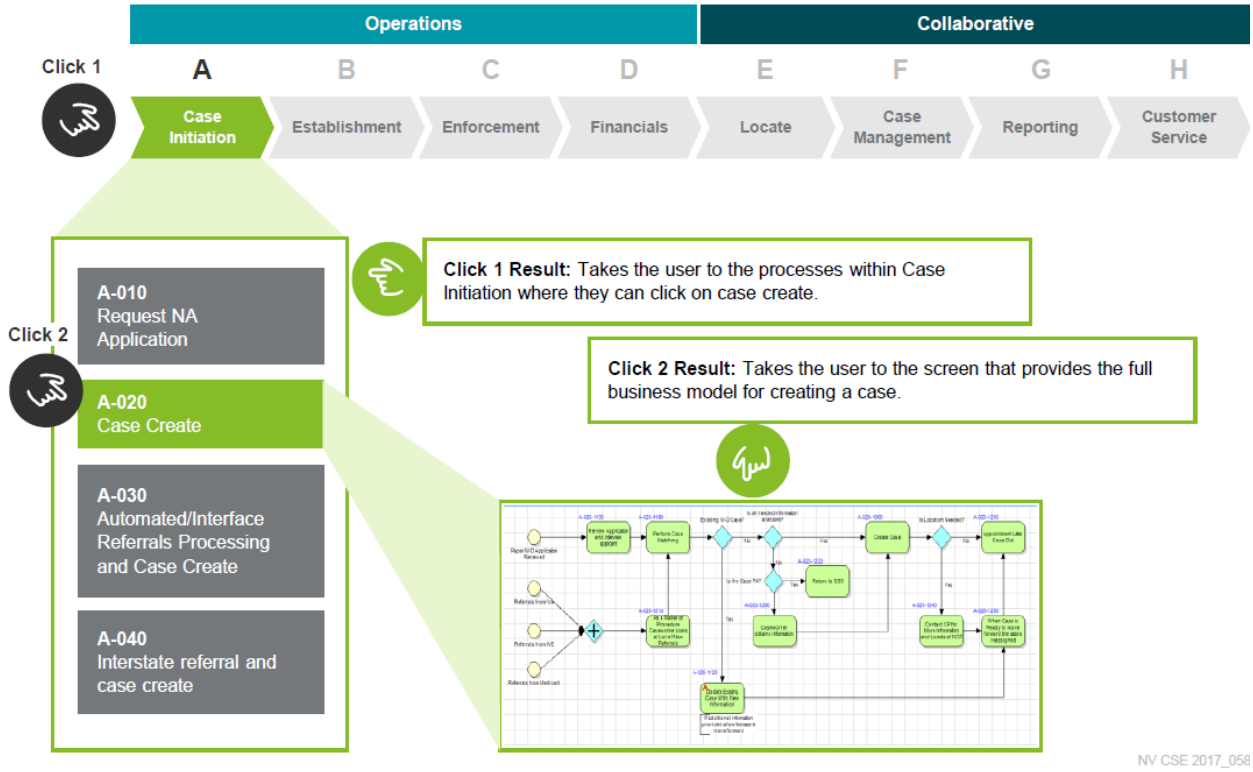


Figure 4-35. IndustryPrint Models. Deloitte's fully developed business process models detail functions of CSE for use on NCSEAS.

These process models are useful resources throughout the life cycle of the project as they enhance the requirements validation sessions and provide clearer documentation for user training, testing, and transition. Deloitte brings this to DWSS on Day 1 as a tool to enhance both of our common understanding of subsystems and processes required for each area of the system. This accelerator improves the quality and productivity of the requirements validation sessions. In addition to the IndustryPrint models, Deloitte collaborates with DWSS to get the MOU completed and transfer the system code from California. Once the transfer activity is completed, we work to set up the CA CSE system in order to bring the functional system to the JAD sessions. Having the functional system available and accessible allows Deloitte and DWSS to have more focused and beneficial design sessions.

The requirements validation phase is an opportunity to take these requirement inputs and review and confirm requirements. Our team works with DWSS, as well as other stakeholders including the Quality Assurance contractor, to review and understand each requirement based on functional area, the identified gaps to the transfer solution based on our initial Fit Gap Analysis, and the reasoning for that requirement being fully met, partially met, or not met at all with the transfer solution. Based on these discussions, requirements are agreed to or modified/refined as necessary to meet the business goals. For example, during a requirements validation session on Intake, identified requirements from the RFP regarding a FCR interface, along with our Fit Gap assessment of those requirements and why we believe the California solution does or does not meet the requirements, are reviewed. These gap assessments are confirmed with DWSS before moving on to the next

topic. Any changes that are not reasonably anticipated are subject to the change control process for the project.

Functional and Technical Requirements

Our process for the functional and technical requirements for the project supports the planning and reviewing of the detailed requirements from the RFP functional and technical requirements for NCSEAS. These detailed requirements stand as the baseline for NCSEAS. Deloitte is positioned to bring our experience with the requirements validation process that we have been responsible for in five of the last seven major CSE replacements: Oregon, Florida, Texas, Massachusetts, and Indiana and the very relevant experience we have currently transferring the CA CSE solution to Oregon.

We bring a refined set of detailed system requirements from California that are traced to the Nevada requirements and Federal certification requirements. This helps identify areas of modifications and customization required to transfer CA CSE. We utilized this when transferring CA CSE to Oregon and achieved tremendous benefits in execution of the requirements phase.

By leveraging these experiences and leading practices, we work with DWSS to provide the complete list of detailed requirements necessary to design and construct a fully functional, federally certified system and determine if there are any gaps across the subsystems from Case Initiation through Financials and Reporting. We have proven that we are the vendor of choice when it comes to understanding complete functionality and requirements that need to be defined for a successful, high-quality CSE solution.

The requirements are refined to indicate an updated percentage match for the California solution as necessary and whether it is deemed a Federal certification requirement. Based on our experience, we find it is crucial to spend time during requirements to map or identify the detailed requirements that are Federal Certification requirements. By incorporating this process into the beginning of the project, the success of the project and overall goal of Federal Certification is much more likely to be achieved. We anticipate conducting 44 total requirement validation sessions across the subsystems and the technical components, in order for the requirements to be properly validated and confirmed with DWSS. The technical requirements sessions are primarily focused on architecture, database, performance, security, and so on.

The following table shows the estimated breakdown of these sessions across functional area.

Technical area	*Number of requirement validation sessions*
Case Management/Locate	***9***
Data Warehouse/Reporting	***3***
Enforcement	***4***
Establishment/Interstate	***6***
Financials	***7***
Intake/Self Service	***7***
Integration	***3***

Technical area	*Number of requirement validation sessions*
Technical/Non-Functional	***5***

Table 4-27. Number of Requirement Validation Sessions. The breakdown of requirement validation sessions across functional area, based on complexity and number of requirements to review.

Detailed Requirements

The detailed requirements are documented in the Functional and Technical Requirements deliverable and Detailed Requirements deliverable to capture the system's functional and technical requirements and serve as the agreement between the project team and DWSS regarding the solution being built. Requirements are documented using the JAMA software suite which also allows for export of the requirements into an agreed upon format for formal submission. The software allows requirement history and traceability after the approval of the functional and technical requirement deliverables. Functional requirements are classified logically by functional subsystem to allow additional insight to their purpose. The detailed requirements are maintained through completion of the warranty/maintenance and operation period. Any changes to the baselined detailed requirements must go through the appropriate change control and approval process to accurately trace the requirements.

Functional and Technical Design

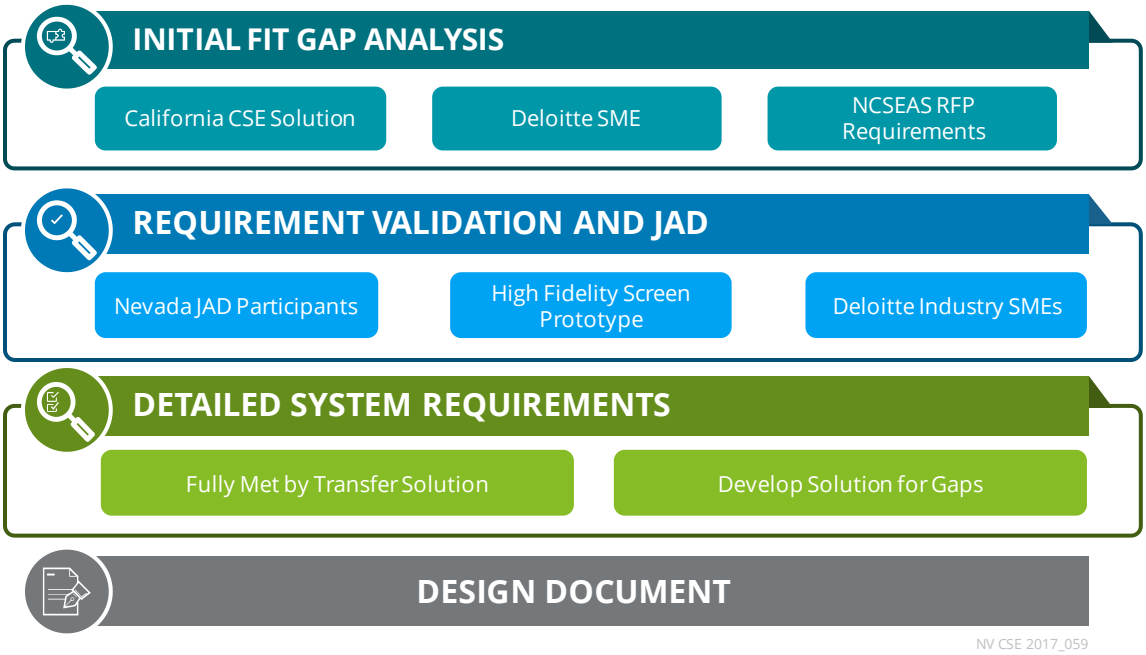
The functional and technical requirements are used as inputs to the design process which elaborate the details of modifications to the transferred CA CSE solution. The requirements described above are expanded into a functional and technical design of the system through JAD sessions. These sessions are broken up into functional and technical areas and the results from the JAD sessions are used in establishing the functional and technical design of NCSEAS. The design functional areas are categorized based on subsystem (i.e., the subsystems from Case Intake through Financials and Reporting). The technical design is determined concurrently with the functional design as different resources are utilized that are more technically focused and the sessions are spread out over a longer period of time. Topics discussed and decisions reached in the functional design are incorporated into the technical design.

EXPERIENCE TRANSFERRING CALIFORNIA

We conducted a boot camp where our Subject Matter Specialists in California, who have extensive working knowledge of CA CSE, built a knowledge base of use cases and module inventory which are then mapped to system requirements. This serves as an accelerator to validate requirements and conduct JAD sessions with the aid of a proof-of-concept in the design phase.

The purpose for holding JAD sessions is to provide a forum for refining design components. The discussions and outcomes of the JAD sessions are what drive the validation of existing design components and the creation of new screens, system process flows, and other artifacts. Deloitte's approach to JAD sessions creates an environment where design decisions support business processes and emphasize functional design. We bring many accelerators to the JAD sessions including CSE process flows, current CA artifacts, best practices, and more. The starting point for the design process is to analyze the design inputs, including understanding DWSS processes, requirements, and data, and planning a

structured JAD session calendar with DWSS. An understanding of the design inputs and sign off on the requirements validation process allows Deloitte and DWSS to focus the JAD sessions resulting in quality, useful outcomes and expedited timelines for designing the system. The main focus of these design sessions is to create designs for the identified gaps based on the Fit Gap Analysis. The design process culminates in the Functional Design and Technical Design deliverables which serve as a blueprint for development.



JAD sessions contribute to the Functional Design and Technical Design. The JAD sessions are two to four hour long activities around which the understanding and documentation of the design of NCSEAS takes place. Our knowledge of the fit/gap and current CA CSE functionality allows us to estimate the right amount of time for these sessions and make them effective meetings. A schedule of design sessions to be held with NCSEAS stakeholders is formulated and circulated during planning. It is important to plan for these sessions well in advance, including scheduling meeting rooms, sending out invites, and identifying attendees so the work can commence immediately after planning. The location of each session is included in the schedule as collaborated with DWSS and other vendor stakeholders. The schedule works within the framework provided by the approved requirements. The following is a sample JAD schedule for a particular module, Locate, that was used for delivering JAD sessions in Oregon.

February 2016 (Work Week)

Monday	Tuesday	Wednesday	Thursday	Friday
1	**2** **1 pm – 5 pm (Locate 1)** • Locate Case Monitoring	**3**	**4** **8 am – 12 pm (Locate 2)** • Locate Interfaces • Federal Parent Locator Services (FPLS)	**5**
8	**9** **1 pm – 5 pm (Locate 3)** • State Parent Location Unit (SPLU) • Quick Locate	**10**	**11** **8 am – 12 pm (Locate 4)** • National Directory of New Hires (NDNH) • Federal Case Registry (FCR) • Driver and Motor Vehicle Services Division (DMV)	**12**
15	**16** **8 am – 12 pm (Locate 5)** • Department of Fish and Wildlife • Employment Department • Workers' Compensation Division	**7**	**18** **8 am – 12 pm (Locate 6)** • Center for Health Statistics (Vital Records) • Department of Corrections	**19**
22	**23** **8 am – 12 pm (Locate 7)** • Credit Reporting Agencies • Postal Service	**24**	**25**	**26**

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Figure 4-36. Sample JAD session that was used in the Oregon CSE project.

Maintaining this schedule and identifying topics in advance is a way for both DWSS and Deloitte to validate that key stakeholders are available for design sessions. It is assumed that DWSS experts in each functional area attend the appropriate JAD sessions to provide insights into current business practices, current technical infrastructure, number of transactions, current interfaces, and other similar topics. We provide CA CSE screenshots and/or a working version of the solution as a part of the JAD process. DWSS experts are expected to review the appropriate screens/system modules ahead of the JAD session to become familiar with the system. This allows for the most productive design sessions and addresses any gaps to get to the future state design without delay. In some instances, we have found it beneficial to hold smaller, pre-JAD sessions to discuss options and approaches that can be validated with DWSS SMEs prior to the larger JAD session.

We anticipate holding a total of 155 JAD sessions across the functional and technical areas. The following is the JAD session schedule breakdown by functional area. When determining the JAD dates, we consider factors such as overlap of resources who need to be involved in the JADs, number of sessions that can be held in parallel, and availability of resources who are critical to a specific functional area. Once the schedule is finalized, the project work plan is also updated with these dates.

Functional/Technical Area	*Number of sessions*	*JAD Dates*
Group 1: Case Initiation, Self Service, and Ease of Use	***20 JAD***	***09/14/18 – 12/28/18***
Group 2: Case Management, Locate, and Customer Service	***30 JAD***	***09/24/18 – 01/11/19***
Group 3: Establishment, Interstate, and Enforcement	***30 JAD***	***09/14/18 – 01/11/19***
Group 4: Financial Management	***30 JAD***	***01/04/19 – 03/25/19***
Reporting/Data Warehouse & Integration	***20 JAD***	***01/22/19 – 03/15/19***
Technical Sessions: Core Architecture, Database, Security, Interfaces, User Interface, Automated Workflow, and Document Generation & Management	***25 JAD***	***12/16/18 – 03/25/19***

Table 4-28. The breakdown of JAD sessions across functional area based on complexity and number of design elements to review and finalize.

An established and socialized schedule provides predictability which results in an increased likelihood of attendance by these key stakeholders. We break the processes into logical groups by creating design sprints focused on targeted functionality. For example, there may be a design sprint focused on the design of the Locate screens and functionality. The introduction of design sprints allows for sustained focus on functionality that is related. Sprints are ordered in logical progression of functionality to avoid dependencies on other sprints.

Prior to the first scheduled design sessions, an initial kickoff session is conducted. The purpose of the kickoff session is to give a high level overview of the items that are to be accomplished during the design phase. This provides a baseline understanding of the design approach to stakeholders which facilitates more meaningful discussions during the actual JAD sessions.

Outcomes from JAD sessions, including issues addressed and decisions made, are generated and shared as both a draft and final report to be reviewed by the Project Management Team and other stakeholders such as the QA contractor and PM contractor. Any updates to requirements and design items (screens, process flows) that are identified in the sessions are entered into the JAMA electronic repository so that they can be adequately documented and traced.

Meeting minutes are developed for each JAD session. Deloitte personnel are identified for every session to take down the pertinent information. The minutes are written on a formal template that remains the same for every session to make the dissemination of information uniform. At the conclusion of the JAD session, a draft version of the meeting minutes report is distributed to the DWSS stakeholders who were in attendance or requested a copy. An identified DWSS stakeholder is responsible for facilitating client review and providing any consolidated feedback on the minutes within two business days. Once the feedback is provided and addressed, the minutes are finalized and published to the SharePoint repository for future reference.

Any issues that arise during the JAD session that cannot be decided upon, or require additional clarification, are noted down as an action item and assigned a due date and an owner. The action items are entered into an electronic repository to be tracked and reviewed in appropriate forums. Action items have an owner assigned to them from both DWSS and Deloitte. It is the responsibility of both of these owners to see that the action item is addressed and resolved. The outcome or solution from the action item is noted in the body of the action item itself. Any requirement that is impacted by the action item is updated in the requirement repository once the action item has been closed.

The outcome of these JAD sessions is a fully designed and documented NCSEAS system that can be used to initiate and complete the development task. The functional design documentation results in detailed system design (including user interface mockups complete with GUI validations, user actions, and workflow events), system specifications, software requirements, database model, data dictionary, and system process models. We involve User Experience experts and best practices from both the commercial and public sector practices if there are any screen or usability changes that need to be customized for Nevada. The process models establish the design of the CSE business processes and lay the ground work for developing the system by illustrating a relationship between pieces of system functionality. These design documents also describe the business processes that exist as a result of the NCSEAS implementation and clearly identify the different user roles of the system and security mechanisms in place for different users based on role.

EXPERIENCE TRANSFERRING CALIFORNIA

Reverse engineering the CA CSE application code to develop design documentation is a complex process that takes time. We have already completed this process once for a CA CSE transfer and our knowledge and success in performing this complex task can be repeated in an efficient manner for Nevada. Deloitte refined our EVD methodology based on our CA CSE transfer to include steps to accurately reverse engineer the code base to produce design documents. We bring this accelerator that will help bridge the gaps that exist in California design documents.

Prototyping is used, as applicable, to demonstrate how components such as screens or menu navigation work while conducting the functional design sessions. We are able to bring and demonstrate these prototypes to our JAD sessions to help facilitate the conversation.

The technical design results in nonfunctional requirements and architecture documents/diagrams that describe the distinct tiers and major integration points. The nonfunctional requirements detail items such as performance requirements, the database entity relationship diagram with data dictionary, batch job requirements, capacity, and accessibility. The architecture documents/diagrams detail the assets of the California architecture being leveraged and the design principles surrounded this system. We have already completed the process of understanding this architecture and expanding on the design assets available based on our experience transferring the solution to Oregon. Security also plays a prominent role in the technical design, particularly around role based security and mechanisms to secure sensitive data to meet FTI and PII requirements.

Deloitte reviews deliverable documentation with DWSS through a deliverable walkthrough process to receive feedback prior to formal submission. The deliverables are updated accordingly and finalized for submission. The functional and technical design are maintained through completion of the warranty period. Any changes to the baselined functional or technical design must go through the appropriate change control and approval process.

DID YOU KNOW?

The Deloitte Digital practice combines leading digital and creative acumen with deep industry knowledge and experience. The practice:

- ***Includes 16 digital studios across the globe offering capabilities across User Experience, UI Design, Mobile, and more***
- ***Helps clients address their biggest challenges and bring a new business vision to life***
- ***Successfully delivered digital engagements with large state government clients such as Pennsylvania and Texas***

Requirements Traceability Matrix

The Requirements Traceability Matrix document serves as the repository for the requirements used to establish and manage traceability across the project life cycle. Deloitte emphasizes requirements definition, documentation, and validation early in the process, resulting in the team linking/mapping corresponding work products (system process models, test cases) with these requirements to create traceability from business process through testing. This approach allows reviewers to quickly find potential risk areas and resolve discrepancies. Moreover, agreed-upon business objectives and key stakeholder expectations are more likely to be met when traceability is established. Requirements Traceability is established and updated through the phases of the project, including design, development, testing, and implementation.

EXPERIENCE TRANSFERRING CALIFORNIA

As a part of our California transfer to Oregon, we engaged Deloitte's Consulting Methods and Tools division to customize our Enterprise Value Delivery Methodology to transfer California. The customization to our EVD has now been institutionalized as part of our feedback loop and the refined EVD methodology helps accelerate the design phase in Nevada.

Deloitte's JAD sessions establish the design artifacts including items such as system process models. As part of the EVD methodology, we use traceability to track each functional requirement to its corresponding system process model, testing for both forward and backward traceability. This creates a series of links among the business, functional, and technical requirements to the corresponding design artifacts, development components, test plan, and test cases. Each phase of the SDLC builds on the artifacts generated from the previous phase to create a traceability hierarchy. This approach is designed to limit missed requirements and test cases.

Understanding the importance of requirement traceability throughout the life of the project, Deloitte proposes the JAMA software for Requirements Management and Traceability on NCSEAS. It is extremely important and valuable to maintain the requirements in a tool like JAMA – it provides visibility, traceability, versioning, and mapping to SDLC phases at any point in time. Reports can be generated with the click of a button and both DWSS and our team are always aware of the current status of each requirement and the downstream mapping to design, development, and testing components. When the RTM deliverable is approved at the conclusion of the requirements elicitation and validation, the requirements are finalized as a baseline and additional updates follow the change management process. Subsequent changes that process through the change management process and are accepted are entered as new, updated, or removed requirements in JAMA. The Requirements Traceability Matrix is a living document that is updated and resubmitted after changes to the baseline as the project progresses through the lifecycle phases.

We bring accelerators and tools that have been proven on other CSE projects including:

- ***EVD Methodology***
- ***Requirements Repository***
- ***IndustryPrint Process Flows***
- ***Federal Certification Validation***
- ***JAMA***
- ***JIRA***

The JAMA tool allows DWSS immediate visibility into requirements and traceability, as well as the history of particular requirements. This industry-leading tool supports traceability with design and development items, as well as test cases. This allows for a more effective and efficient impact analysis when particular requirements are modified.

4.27.3 Deliverables

4.27 SYSTEM REQUIREMENTS AND DESIGN

4.27.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.27.3.1	Functional and Technical Requirements	4.27.2.1	15
4.27.3.2	Conduct JAD Sessions	4.27.2.2	15
4.27.3.3	Requirements Traceability Matrix	4.27.2.3	15
4.27.3.4	Functional Design	4.27.2.4	15
4.27.3.5	Technical Design	4.27.2.5	15
4.27.3.6	Detailed Requirements	4.27.2.6	15

Each activity in the Requirements and Design phase culminates in the creation of deliverables. Based on the structure and natural flow of requirements elaboration through detailed design, we agree to the following deliverables in order to get sign-off and acceptance before moving from one phase to the next: Functional Requirements, Technical Requirements, Detailed Design, and Requirements Traceability Matrix. The Functional and Technical Requirements and the Detailed Requirements deliverables are delivered at the conclusion of the Requirements Elaboration phase early on in the project. Once these deliverables are approved, we can move into conducting the JAD design sessions and begin developing the Functional Design, Technical Design, and Requirements Traceability Matrix.

Deliverables	*Confirmation of review time*
Functional and Technical Requirements	***15 days***
Conduct JAD Sessions	***15 days***
Requirements Traceability Matrix	***15 days***
Functional Design	***15 days***
Technical Design	***15 days***
Detailed Requirements	***15 days***

4.28 Development, Modification, and Conversion of System Software Code

4.28.1 Objective

4.28 DEVELOPMENT, MODIFICATION AND CONVERSION OF SYSTEM SOFTWARE CODE

4.28.1 Objective

The objective of this task is the development, modification and conversion of system software code.

The objective of the development task is to develop/modify/convert the system software code and integrate, unit test, and validate that the NCSEAS system meets the requirements and design, and performs as per the agreed-upon benchmarks. It includes activities that facilitate the NCSEAS system being customized to specifications, and represents the task during which the different components of the system, such as the user interface, database, and rule engines, are customized, developed, and integrated.

Our approach includes a number of activities that promote quality. This includes:

- ***Establishing consistent standards (i.e., coding convention, field naming convention)***
- ***Creating development tasks and having leads closely monitor them until completion***
- ***Developing and sharing with DWSS prototypes such as an intake or referral functional prototypes, financial batch processing prototype, architecture prototypes, and prototypes that can be used to verify performance early in the process***
- ***Creating and executing unit test cases***
- ***Conducting peer code reviews by senior developers/architect code reviews***
- ***Providing data quality standards and guidelines***

The outcome of the development phase is a complete solution ready to be put through rigorous system testing and, ultimately, into the hands of its end-users for user acceptance testing. As one team, Deloitte and DWSS technical staff collaborate through the development activities to develop, integrate, peer review, unit test, and validate the NCSEAS solution.

The following is a high-level schedule view of the activities for developing, modifying, or converting system software code across the various modules.

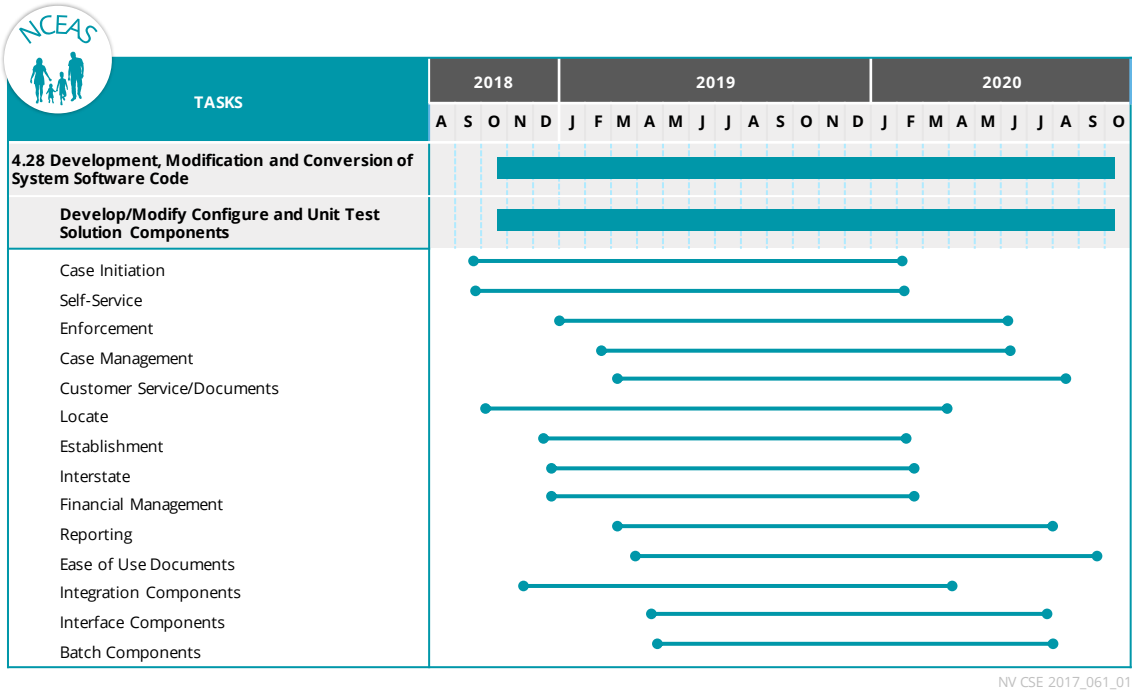

Figure 4-37. Development, modification, and conversion of system software code timeline.

4.28.2 Activities

4.28 DEVELOPMENT, MODIFICATION AND CONVERSION OF SYSTEM SOFTWARE CODE

4.28.2 Activities

4.28.2.1 During this activity, the software modules will be created or modified and prepared for system testing. The system testing activity is where the deliverables for accepting the development, modification, and conversion of the system code will be tracked and accepted. This is also the activity where the Implementation Contractor will install the purchased operations hardware and software.

4.28.2.2 The Implementation Contractor shall develop the software and perform unit testing in accordance with the approved Application Development Plan. The Implementation Contractor must maintain unit-testing results for quality assurance reviews by the Program.

4.28.2.3 Implementation Contractor's development responsibilities include:

A. Transfer from California, install, and customize Nevada's NCSEAS software components according to the defined requirements;

B. Code all new or modified program modules according to the defined requirements;

C. Create unit test data and test environment;

D. Design and perform unit testing;

E. Report unit test results as requested for QA review;

F. Provide the new NCSEAS components ready for integration and system and acceptance testing; and

G. Ensure application uses most current versions of programming languages and computing platforms.

4.28.2.4 Module Inventory

The module inventory will, at a minimum, detail the modules that will be added, those that will need to be modified, and those that meet requirements without being modified. Modules must conform to system naming standards, and the deliverable must list each module and include a brief description of purpose.

4.28.2.5 Environments

The necessary environments for development, testing, and training will be created as part of the construction phase of the project. The deliverable will include procedures for the creation, maintenance and rebuilds of the environments, and describe controls to maintain the integrity of the data and detail the procedures to recover each environment.

4.28.2.6 Unit Test Results

The unit test results will summarize the results of the unit testing. These results will also include, at a minimum:

A. The number of conditions tested per module;

B. Problems encountered and corrections made;

C. Any outstanding defects; and

D. An assessment of the defects' impact.

Development/Construction of Modules

The goal of the development phase is to move from design to actual module construction by developing and customizing software code, unit testing, integration testing, and quality assurance through a defined methodology. Deloitte's EVD methodology benefits DWSS with our knowledge repository of reusable assets, leading practices, and templates that structure our development processes. The combination of our solution, approach, and experience results in an adaptable, user-friendly system tailored to your specific requirements.

It takes an experienced team that follows a disciplined methodology in order to deliver quality and meet deadlines for a project of this size. Deloitte proposes to use EVD for our software development methodology to successfully transition the California system to DWSS as the foundation of NCSEAS. The most immediate and significant gains from this approach are lower risk, reduced defect count, closer adherence to project target dates and milestones, and a system that meets the requirements defined in the early stages of the project.

We propose utilizing an overall waterfall methodology for modifying the existing CA CSE code base with principles that allow for customization or new development to take place at the module level. Each functional module is customized or developed as needed and unit tested before moving onto the next phase. The functional modules are broken up in the same fashion as in the Design phase (i.e., Case Intake through Financials and Reporting). The module inventory response later in this section demonstrates the expected level of customization each module requires based on our Fit Gap analysis.

While we propose a waterfall methodology, we recommend combining iterative programming principles. DWSS benefits from iterative development principles as functionality is assembled in logical pieces to match the agreed-upon requirements and design. To achieve this, functional design specifications are reviewed and logical functional components are identified that can be built or integrated with existing California

components through a series of cumulative development cycles or sprints. The focus is on confirming and customizing the transferred code to be Nevada-specific, developing code for the functional gaps, and integrating and unit testing in the development environment.

Each cycle results in a software build that goes through the unit and integration testing process on its own, until the functional components of a particular area are completed. The system is ready for final, full-system testing at the conclusion of the development phase. This approach results in a lower risk to meeting the project timeline and objectives, defined by DWSS for its program groups, and allows Deloitte to identify software issues early during the project life cycle when the remediation has less of an impact to the overall project success.

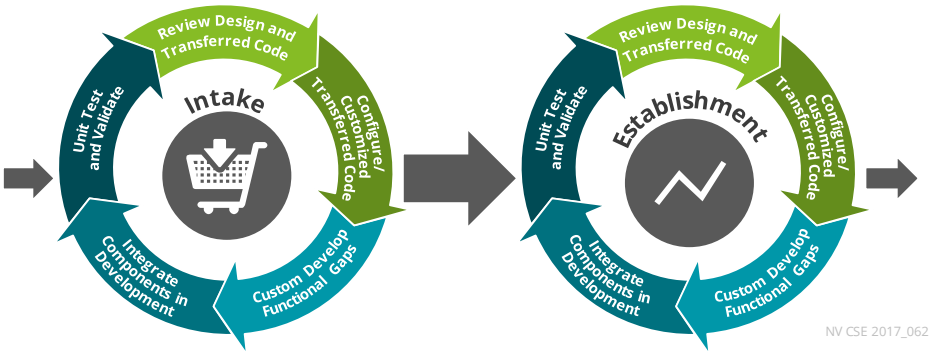

Figure 4-38. Example development cycle for various CSE subsystems.

At the start of the development phase, a logical development environment is already established and available for use that supports the configuration, construction, modification, and expansion of the NCSEAS system to not only meet requirements, but to also support future maintenance and enhancement activities.

Development Responsibilities

Our development responsibilities and approach includes the activities related to customizing the transferred California solution and developing for the identified gaps. Our approach provides frameworks for creating and executing unit test cases, integrating the various elements of the system, and conducting quality peer reviews. The approach integrates well with the other disciplines in the EVD methodology, using the outputs of Requirements and Design, and providing the input to Testing and Deployment activities.

After standing up the solution, customizing the user interface and code components, and making the necessary data model and integration updates for DWSS, the Deloitte team analyzes the gap fit analysis and requirements necessary for customizing the code. The components identified in the gap analysis are

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We engaged our systems integration experts to build an upgrade toolkit for the various framework level upgrades that we have performed when transferring California to Oregon. We also used this upgrade procedure toolkit to successfully upgrade the Nevada SNAP and TANF Modernization framework to Spring MVC. We use this experience and lessons learned to similarly upgrade the CA CSE solution to Spring MVC for NCSEAS, resulting in a smooth and efficient upgrade process.

developed based on the design components developed during JAD sessions with DWSS.

Development tasks are created in JAMA, assigned to a developer, and linked to requirements. This allows for clear visibility into who is working on which component. This process also provides a tool for managing software migrations and testing because the development team must link a change-set to their code check-ins. As development and unit tests are completed, the developers make additional updates to the task detailing the work completed, updating the status, and uploading the results. This approach lends itself to a collaborative development phase that promotes visibility, transparency, and collaboration among project teams.

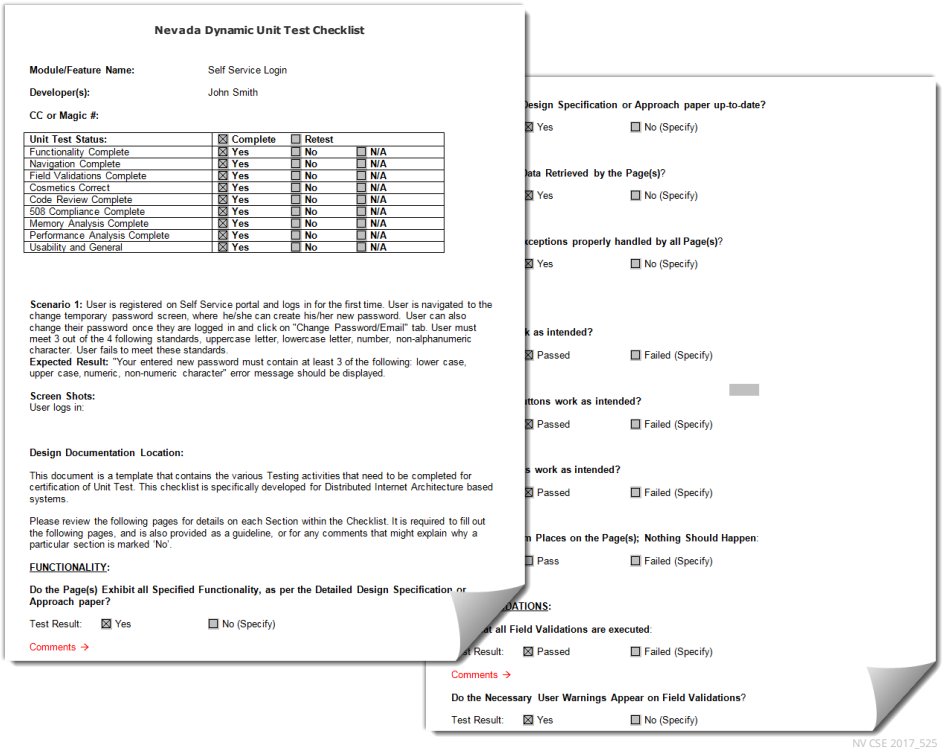
Application development is completed based upon the agreed to versioning of programming languages and computing platforms. We typically limit upgrades to major and emergency (security) level upgrades and baseline the software prior to beginning development. The Application Lifecycle Management tools and processes are established well in advance in order to begin construction on time and utilize and agreed upon set of tools and versions. Once the code is customized and developed, the team unit tests the code, tracks status in JIRA, and updates the system design documents, as necessary.

Unit Testing and Unit Test Results

Unit Testing occurs during the development phase and is specifically performed by application developers. The purpose of unit testing is to confirm that the expected results for each business validation or requirement are met for that component. Our testing tools, Selenium, JUnit, and JMeter, allows the NCSEAS team to efficiently monitor the success rate of unit tests and coverage of the NCSEAS code base. Performing unit testing throughout the development activities results in a complete and sound build for the migration to the System Test environment.

Unit testing begins with a plan that outlines the necessary cases or scenarios that need to be run to comprehensively test the system based on each function, or unit of code. A dynamic Unit test checklist is created for each module or feature component of a system. These documents typically begin with the module or feature name being tested, the name of the developer conducting the unit test, the individual reviewing the unit test results, and the solution's location in Perforce (code repository) for tracking and version control. The development team uses this as a basis for performing the unit testing of the overall system.

The team follows scripted scenarios with expected results to validate the functionality is working properly and as designed. In the instance of encountering an unexpected outcome, the problem is documented and refactoring or correction of the code is required and completed by the assigned developer. The module is subjected to retesting after updating the code, with the originating developer updating the screenshots and documentation as necessary. In order to verify quality code, after confirming the actual results align with expected outcomes, unit tests are typically handed to peer technical leads and functional analysts for comprehensive review and validation. The following figure shows an example of a Unit Test Checklist.



Nevada Dynamic Unit Test Checklist

Module/Feature Name: Self Service Login

Developer(s): John Smith

CC or Magic #:

Unit Test Status:	☒ **Complete**	☐ **Retest**	
Functionality Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Navigation Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Field Validations Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Cosmetics Correct	☒ **Yes**	☐ **No**	☐ **N/A**
Code Review Complete	☒ **Yes**	☐ **No**	☐ **N/A**
508 Compliance Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Memory Analysis Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Performance Analysis Complete	☒ **Yes**	☐ **No**	☐ **N/A**
Usability and General	☒ **Yes**	☐ **No**	☐ **N/A**

Scenario 1: User is registered on Self Service portal and logs in for the first time. User is navigated to the change temporary password screen, where he/she can create his/her new password. User can also change their password once they are logged in and click on "Change Password/Email" tab. User must meet 3 out of the 4 following standards, uppercase letter, lowercase letter, number, non-alphanumeric character. User fails to meet these standards.
Expected Result: "Your entered new password must contain at least 3 of the following: lower case, upper case, numeric, non-numeric character" error message should be displayed.

Screen Shots:
User logs in:

Design Documentation Location:

This document is a template that contains the various Testing activities that need to be completed for certification of Unit Test. This checklist is specifically developed for Distributed Internet Architecture based systems.

Please review the following pages for details on each Section within the Checklist. It is required to fill out the following pages, and is also provided as a guideline, or for any comments that might explain why a particular section is marked 'No'.

FUNCTIONALITY:

Do the Page(s) Exhibit all Specified Functionality, as per the Detailed Design Specification or Approach paper?

Test Result: ☒ Yes ☐ No (Specify)

Comments →

esign Specification or Approach paper up-to-date?

☒ Yes ☐ No (Specify)

ata Retrieved by the Page(s)?

☒ Yes ☐ No (Specify)

ceptions properly handled by all Page(s)?

☒ Yes ☐ No (Specify)

k as intended?

☒ Passed ☐ Failed (Specify)

ttons work as intended?

☒ Passed ☐ Failed (Specify)

s work as intended?

☒ Passed ☐ Failed (Specify)

n Places on the Page(s); Nothing Should Happen:

☐ Pass ☐ Failed (Specify)

DATIONS:

t all Field Validations are executed:

t Result: ☒ Passed ☐ Failed (Specify)

Comments →

Do the Necessary User Warnings Appear on Field Validations?

Test Result: ☒ Yes ☐ No (Specify)

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Figure 4-39. Sample Unit Test Checklist completed for each development unit.

The unit test cases are defined for the application components: rules engine, user interface, reports, alerts, notifications, and interfaces. Unit test data is designed to simulate the end conditions for unit testing. Stubs are created for unit testing interfaces that are still in development. The unit test summary result include a snapshot of the number of conditions tested per module, problems encountered and fixed, and any outstanding defects with an assessment of the impact. These results are documented and shared with the team.

Requirements traceability is also updated during this time within JAMA with any integration test scripts that have been created and documented in Selenium and JMeter. This provides visibility into the test scripts that will be executed for each functional requirement in the next phase.

Module Inventory

We have completed an updated analysis of the fit gap of the DWSS high-level requirements found in Attachment M Implementation Vendor Requirements and the CA CSE solution. We classified each requirement into one of three categories:

- ***The standard function is available without modification from the CA CSE system.***
- ***Modification of the CS CSE system is required and has been assigned anywhere from 1% to 99% fit depending upon the amount of modification needed.***
- ***Custom design and development is required and has been assigned 0% fit.***

Based on our analysis of Attachment M Implementation Vendor Requirements, 50 percent can be met as standard functions, 39 percent requires modification and 11 percent requires custom design and development.

The following table summarize the outcome of the fit gap analysis in more detail at the functional module level. For a detailed analysis of both functional and technical, please see Section VI: 4.3 Functional Requirements and Part 1B, Section II: 4.4 Technical Requirements.

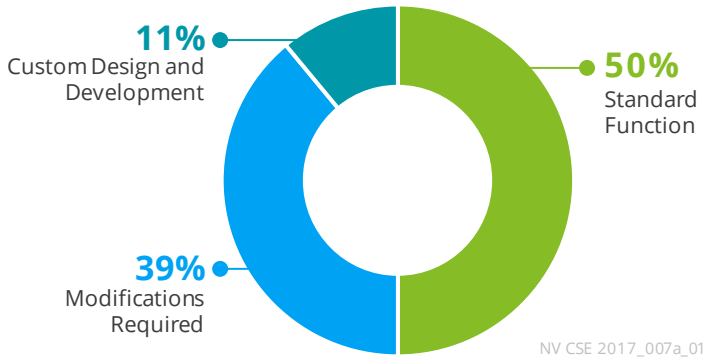

Figure 4-60. NCSEAS Functional Requirements Met Partially or Fully by the CA CSE Solution. The CA CSE solution provides significant leverage in terms of addressing the broad set of requirements defined for the NCSEAS solution.

Functional Area	Total Requirements	Standard Function	Modification Requirement	Custom Design & Development	Overall % Match to CA CSE System
Case Initiation	183	130	38	15	82.1
Locate	65	36	25	4	80.3
Establishment	36	11	21	4	61.7
Case Management	145	88	43	14	80.4
Enforcement	80	13	58	9	62.1
Financial Management	121	60	46	15	75.3
Reporting	52	1	39	12	52.3
Customer Service	47	20	21	6	63.1
Ease of Use	57	36	17	4	84.1

Table 4-29. Fit Gap of Functional Module Level.

Environments

Necessary environments for development, testing, and training are created as a part of the construction phase. There are two physical environments (Non-Production and Production) with 9 logical environments across the physical servers (Development, System Testing, Conversion, Performance Testing, User Acceptance Testing, Training, Certification, Production – Staging, and Production). Deliverables for the environments includes procedures for creating, maintaining, and rebuilding the environments. The documentation also discusses controls for maintaining the integrity of the data and details the procedures to recover each environment. The following table shows the breakdown of physical and logical environments.

Physical Environment	*Logical Environment*
Non-Production	***Development***
Non-Production	***System Testing***
Non-Production	***Conversion***
Non-Production	***Performance Testing***
Non-Production	***User Acceptance Testing***
Non-Production	***Training***
Non-Production	***Certification***
Production	***Production – Staging***
Production	***Production***

Table 4-30. Physical and Logical Environments.

The term 'physical environment' refers to the installation of server hardware, peripherals, and network components as required by implementing the application and supporting processes. Each environment is an integrated environment that is used for the duration of the contract. These environments are isolated which protects the Production Environment from activities occurring in lower environments. The non-production environments support the maintenance and enhancement of the system without disruption of any DWSS computing activities. The following section describes the logical environments that are associated to the Non-Production physical environment.

Development Environment

This logical environment allows for the development and building of the transfer application, and contains the base system's application source code and the changed source code required for NCSEAS. Within the development environment, customization, coding, and unit-testing activities are performed of the system application software. Primary users of this environment include developers and engaged technical staff.

The development environment infrastructure includes the tools required for application developers to perform code and unit test activities. The development environment hosts the project and application development hardware and software, and includes configuration and version management tools. Each developer is provided with an instance of the Perforce code repository tool, allowing developers to independently code, build, and unit test application modules without affecting other developers in this environment. This environment also contains the CA CSE code base and is the starting point for any development and modification of that transfer system software. This logical environment resides on the physical Development server.

Testing Environments

The logical Testing Environments includes the System Testing, Performance Testing, and User Acceptance logical environments that support the following activities:

- ***Integration Testing. End-to-end testing with interfacing partners and systems prior to formalize system testing. This testing is conducting in the System Testing logical environment.***
- ***System Testing. Validation of system functionality to maintain conformity to functionality specifications. This confirms that approved modifications do not have an undesirable***

effect or an unintended consequence on the system itself. This is conducted in the System Testing logical environment.

- ***Performance Testing. Testing of the performance of the system under estimated production load volumes. This is conducted in the Performance Testing logical environment.***
- ***User Acceptance Testing. Final testing on approved system changes before these changes are migrated to the Staging environment. This is conducted in the User Acceptance logical environment.***

The proposed solution supports interfaces with a number of systems including IV-A, IV-E, Title XIX, and DOJ. While the development environment supports building and testing the multiple development efforts concurrently, once the pieces built by different developers are completed, they are integrated and tested to deploy the final solution. The integrated solution is not typically tested in the development environment; the proposed solution utilizes the System Testing logical environment for both Integration Testing and System testing. Please refer to Section VI: 4.30 Testing and Accepting New System for additional details.

Conversion Environment

The purpose of the Conversion logical environment is to provide a standalone environment for executing the conversion activities. A standalone conversion environment provides the benefit of not impacting any ongoing or parallel system testing activities. Please refer to Section VI: 4.29 Legacy Data Conversion for additional details.

Training Environment

The purpose of the Training logical environment is to allow stakeholders to use and access the system prior to installation of the system software in the production environment. This allows for hands on use of the system and an environment where training materials can be generated and instructional training or web based classes can be conducted. Please refer to Section VI: 4.31 Training for additional details.

Certification Environment

The purpose of the Certification logical environment is to provide a separate logical environment for federal certification distribution testing that provides our team with the ability to conduct automated test scripting for regular regression testing repetition of the test deck conditions. This separate environment mirrors production and provides a realistic environment for demonstrating the test deck. Please refer to Section VI: 4.34 System Certification for additional details.

Code Migrations

Using the standards established in a configuration management plan, the code is migrated to the appropriate environment for testing after the exit- and entry-level criteria have been met. Deloitte completes detailed unit testing and code review before migrating from the development environment to higher environments. In the System Testing environment, the code is tested more thoroughly than unit testing by spanning more than one functional module of the system. Once the code has been properly tested in the System Testing environment, it is migrated to the User Acceptance environment where functional testing is performed by the users. Once completed, the code is migrated to the Training environment.

The details regarding the procedures for creating, maintaining, and rebuilding these environments are contained in the deliverables mentioned in the following table.

4.28.3 Deliverables

4.28 DEVELOPMENT, MODIFICATION AND CONVERSION OF SYSTEM SOFTWARE CODE

4.28.3 Deliverable

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.28.3.1	Development, Modification and Conversion of System Software	4.28.2.1 4.28.2.2 4.28.2.3	30
4.28.3.2	Module Inventory	4.28.2.4	10
4.28.3.3	Environments	4.28.2.5	30
4.28.3.4	Unit Test Results.	4.28.2.6	10

Each activity in the Development, Modification, and Conversion of System Software Code phase culminates in the creation of the following deliverables. These documents provide the mechanism for validating the development of the system is complete and is ready to move into the Testing phase. The following table lists out the Development, Modification, and Conversion of System Software Code deliverables and confirms the review time.

Deliverables	*Confirmation of review time*
Development, Modification and Conversion of System Software	***30 days***
Module Inventory	***10 days***
Environments	***30 days***
Unit Test Results	***10 days***

4.29 Legacy Data Conversion

4.29.1 Objective

4.29 LEGACY DATA CONVERSION

4.29.1 Objective

The objective of this task is for the Implementation Contractor to plan, coordinate and execute all conversion activities.

The quality and integrity of converted data provides the end users with the requisite confidence to fully use the new NCSEAS solution. In addition to our experienced child

support resources, our legacy data conversion team also includes Satish Mummalaneni, Surya Kandula, and Arun Gnanavel, who have in-depth understanding of NOMADS. Satish has extensive experience with DWSS including analyzing and converting Medicaid rules and SNAP/TANF rules from the legacy systems to ILOG rules engine. He also worked with DWSS in analyzing ACA change impacts on DWSS CSE and OASIS projects that resulted in a smoother implementation.

To establish credibility for both the projects and Deloitte, we deliver correct and clean data from NOMADS and other sources to the new NCSEAS system using an iterative approach documented within our Data Conversion Management Plan. Our iterative process has worked in California, Pennsylvania, and Florida. The following is a high-level schedule view of the activities for legacy data conversion.

DEMONSTRATED ABILITY

- ***We converted one million Cases, two million Case members, 700 thousand Support orders, and more than a million midstream activities as part of that conversion process for the Florida CAMS CSE system.***
- ***Our team architected, tested and scheduled the production conversion run to a point where the conversion did not disrupt even a single payment to custodial parent.***
- ***Our completed conversion effort achieved confirmed data accuracy of over 99 percent.***

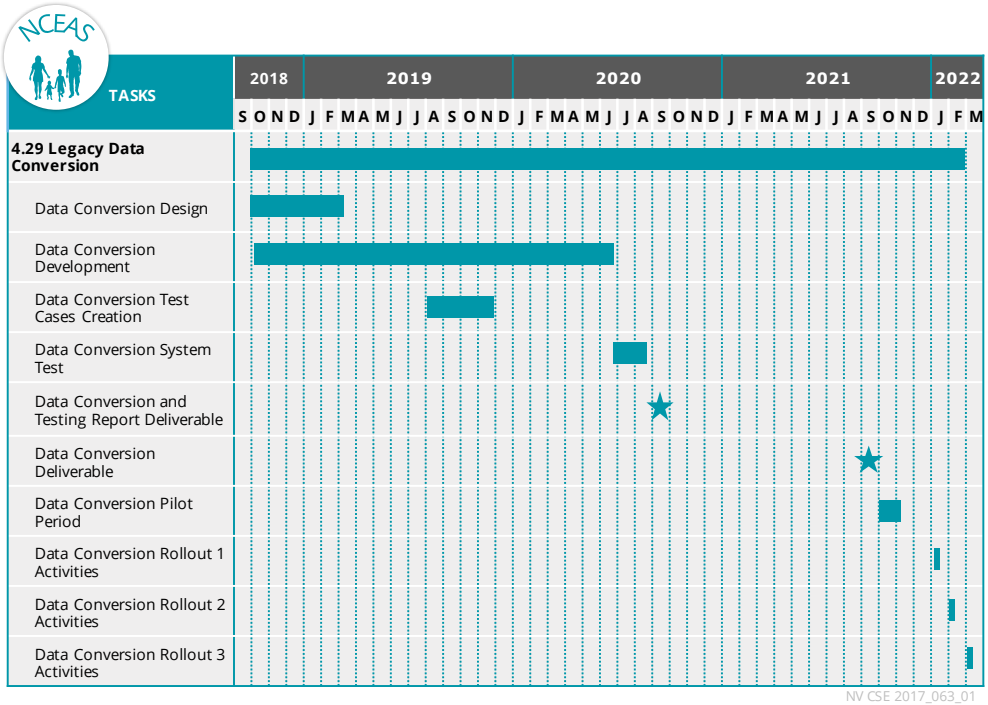

Figure 4-40. Legacy data conversion timeline.

The following figure provides a high-level roadmap for our proposed data conversion process.

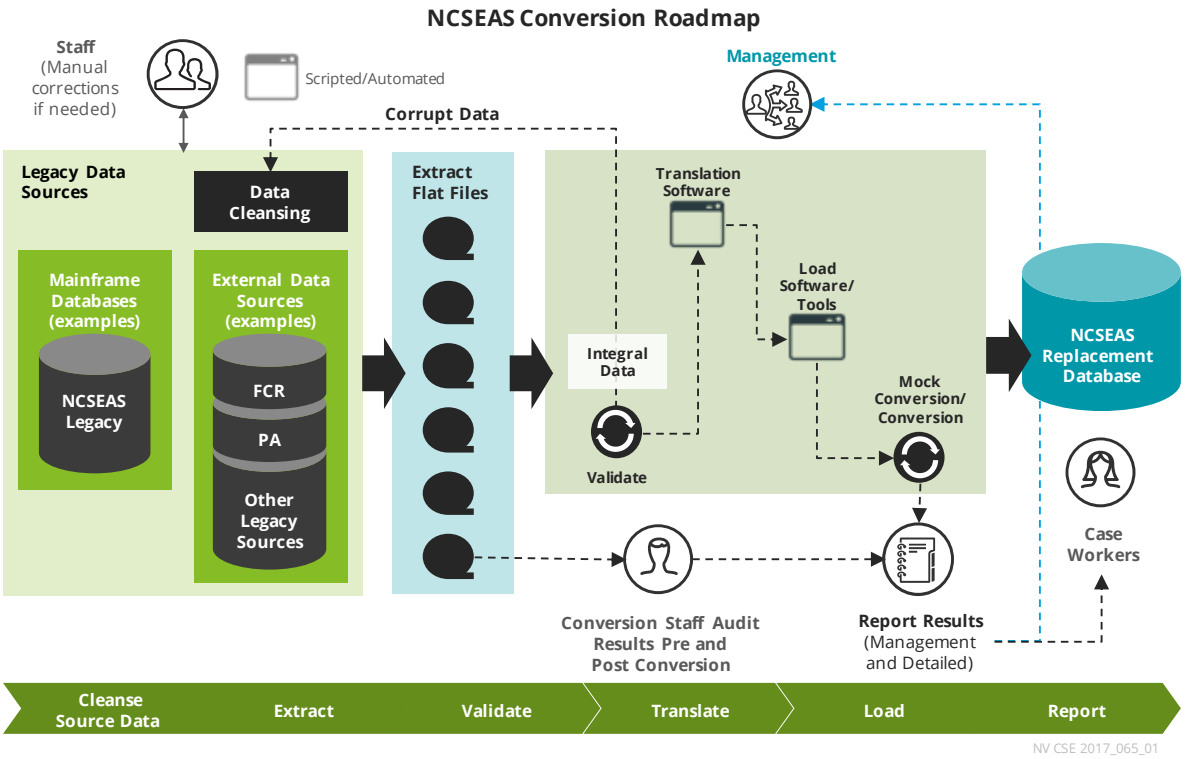

Figure 4-41. High-Level Roadmap of the Conversion Process.

We leverage the use of the SAP Data Services ETL tool to handle automated data conversion tasks. This product provides automated management capabilities for metadata during the data mapping effort through the profiling and analyzing of source data. By aiding to visually map and compare source and target data definitions; specify business rules, quickly develop, test, and validate data migration processes from source to target systems; and logically group batch migration components, the tool enables us to standardize our approach and promotes repeatability.

During each phase of the conversion effort, our approach provides steps to address data quality, data integrity and data timeliness. Initial activities focus on core business data, such as case, order and participant information, upon which other data is dependent. This allows data (referential) integrity to be preserved and validated throughout the conversion testing and implementation. Quality is designed into the conversion programs and validated through specific activities that are performed in testing and during go-live executions. Throughout both the conversion and implementation planning activities we focus on go-live timing with potential cut-off and/or freeze periods to confirm data is timely and no data is lost due to cutover activities. The following table summarizes key features of our approach, as documented within our Data Conversion Management Plan:

Features of Our Approach	*Benefits to NCSEAS*
Iterative conversion approach	***Our iterative conversion process delivers the cleanest data to DWSS for use in NCSEAS. Our team works with DWSS staff to map, extract, load and confirm the conversion results iteratively. We have the conversion design and development completed early in the process, and spend greater time on "mock conversions" with production data to optimize performance, staging, timing and quality enhancement of the data. The iterative approach builds confidence in conversion and minimizes manual conversions needed.***
Identification of data quality issues early	***Through the use of enterprise ETL tools, tailored to support CSE data conversion, we identify data quality issues early and minimize costly risks of bad data in production. Our iterative approach to proactive early detection through time-tested quality reports enables the team to work on solutions to these issues at an early stage in the process. We produce data quality reports for DWSS to resolve and cleanup prior to conversion.***
Data extraction	***Our data extraction effort targets source system data that is business relevant. We work with DWSS conversion staff to identify data required to support the new NCSEAS functionality. We provide DWSS the data extract formats and DWSS is responsible for providing the actual data extracts from legacy system and ancillary systems.***
Data cleansing	***Our iterative approach to data cleansing through customized exception and audit reports provides a cleaner data set to NCSEAS. This activity confirms that address normalization, standardizing names, and phone numbers are completed at conversion time through automated tools. Custom reports identifying possible duplicates, missing data such as CP address of a public assistance client, CP SSN or date of birth of a dependent, are generated so that many of these can be corrected and cleaned-up in the legacy system. Reports identifying potential member and case duplicates are produced for county staff to review and take action. This approach increases the quality of the data in the new system and sets a solid foundation for the new NCSEAS system.***
Knowledge of transfer data model	***Through our support of the CA CSE system, we have direct hands-on expertise with the donor/transfer system, its data model, functionality, key elements required for functionality to work, dependencies between processes and implications to data conversion. In addition, experienced testers in the team, tested conversion into these data structures for the California system. Our experience will reduce NCSEAS data conversion risks and help in proactive identification of potential problem areas and testing of data conversion software.***
Technical architecture	***Our technical architecture provides multiple threading and asynchronous processing to facilitate more efficient processing of the Agency data.***
Audit control process and support for manual conversion	***We convert the Agency data, especially pertaining to the OCSE 34A and OCSE 157 Federal reports, to match the financial records down to the penny.***

Table 4-31. Features and benefits of our approach.

4.29.2 Activities

4.29 LEGACY DATA CONVERSION
4.29.2 Activities
4.29.2.1 The Implementation Contractor must plan and coordinate all conversion activities, including all data currently in the DB2 database to include base, transactional, accounting, and reporting tables as well as all documents stored in the FileNet repository. The Implementation Contractor must work closely with the Program to formulate data conversion algorithms and develop a detailed data conversion plan to convert the existing computerized data from all legacy systems and subsystems.
4.29.2.2 The Implementation Contractor must analyze the impact the conversion will have on the existing State system infrastructure, and must include appropriate remediation in their recommendations and plans.
4.29.2.3 The Implementation Contractor must develop and test the data conversion and cleanup software. The State will oversee and validate the data conversion and cleanup software.

4.29.2.4 The Implementation Contractor will be responsible for any required manual data conversion efforts, although automated methods must be used unless otherwise agreed upon by the Program. Manual efforts are defined as single record efforts. Automated efforts are defined as the processing of groups of records.

4.29.2.5 The Implementation Contractor is responsible for developing a functional and technical design for the conversion software, designing and developing the overall conversion plan, including the manual conversion, developing and testing the conversion software, coordinating all conversion activities, developing the control processes to manage any manual conversion efforts, and performing the Program's manual conversion as necessary.

4.29.2.6 Sufficient converted data must be available for development, system test, and acceptance test.

4.29.2.7 Data conversion must be integrated with the phased rollout that is planned for the NCSEAS. Conversion processes and programs must support conversion cohorts that align with the rollout strategies (e.g., office, county), as well as account for just-in-time conversion both "in" and "out" to facilitate transmission of cases across converted-system / legacy-system boundaries.

4.29.2.8 Implementation Contractor's conversion responsibilities include:

A. Develop a comprehensive conversion plan, which must include but not be limited to:

1. Determine and document the expected conversion impact on existing State infrastructure, including mainframe and servers.

2. Develop and implement a remediation plan (including the acquisition, installation or implementation of associated hardware and software) to address any adverse impacts the conversion may create for the existing infrastructure. The estimated costs of such remediation software / hardware must be included in the Proposer's cost proposal.

3. Create, maintain, and update documentation associated with the conversion.

4. Develop Data Conversion specification documents for users and support staff.

5. Develop Data Conversion schedule.

6. Develop Data Conversion programs.

7. Develop Data Conversion materials.

8. Develop Data Conversion test plan.

B. Conduct mock production data conversion(s) to test for conversion duration and data accuracy as compared to legacy system(s).

C. Produce reports of likely duplicate cases and clients, error reports, and conversion efficiency reports for all conversion processes performed.

D. Develop and run legacy system downloads to feed to the data conversion software.

E. Develop and test the data conversion software.

F. Develop and test automated data cleanup software.

G. Run data conversion software for unit test, system test, acceptance test, and implementation. Ensure data is production quality in all environments. All production data must be masked and cleansed in non-production environments.

H. Determine, with Program assistance, the legacy Nevada Operations of Multi-Automated Data Systems (NOMADS) system source data fields, and the NCSEAS target data fields for all legacy system data elements.

I. Identify "missing" data (i.e., data needed by the NCSEAS but unavailable from existing systems).

J. Recommend procedures for handling missing data, data exceptions, and default values.

K. Perform manual data cleanup.

L. Perform any manual data entry.

M. Perform manual client merges.

N. Recommend the method to combine multiple client records into one record.

O. Develop data conversion verification with quantifiable results comparing target and source data.

4.29.2.9 Conversion and Testing Plan

A. The conversion and testing plan will detail which data elements from NOMADS and any ancillary systems the Program will convert to the NCSEAS. The plan also needs to map the identifying codes for a data element within NOMADS to the corresponding identifying codes for a data element within the NCSEAS. The plan then needs to determine which cases in NOMADS the Program should convert to the NCSEAS and what the initial statuses of these cases should be.

B. The plan needs to set forth a schedule for the conversion and establish the criteria for system conversion readiness. Finally, the plan needs to establish the testing criteria to determine whether the data elements converted successfully for a given case and whether all cases that the Program intended to convert were converted to the correct case status.

4.29.2.10 Conversion and Testing Report

The conversion and testing report will detail the tasks accomplished in preparation for the conversion and testing and will document the state of readiness for data to be converted. Acceptance of this deliverable is necessary for conversion efforts to proceed.

4.29.2.1 Plan and Coordinate Conversion Activities

Data conversion planning drives successful data conversion and new system implementations. As a first step, we develop the Data Conversion Management Plan, as described in Section VI: 4.18, which covers the complete scope of activities for the manual and automated conversion effort. We update the plan throughout the development, testing and release phases as we complete the corresponding phases of data conversion to support

testing and ultimately the production rollout. You can count on the plan to guide timely data conversion that supports DWSS-accepted implementation schedule.

The Data Conversion Management Plan details the technical approach to developing conversion software including specifications, program coding approach, test plans, and complete testing. The plan references areas where we can leverage reuse of code or use code generation techniques. The conversion software is constructed using the same standards, methodology, and version control tools as the rest of the NCSEAS system. This enables reuse of code components at the data access level.

As part of the conversion planning effort, we define and confirm specific requirements for the conversion process. We begin by documenting how legacy NOMADS data translates to corresponding NCSEAS data requirements. We work with DWSS to validate our understanding of legacy source data fields. During this exercise, we identify jointly with DWSS, the data that is to be converted to the NCSEAS target system. Requirements analysis, data mapping and functional design development are developed through a series of JAD sessions involving subject matter experts with knowledge of legacy and ancillary systems and target system designers. Conversion requirements are defined in the form of a target data dictionary. The target data dictionary includes the data dictionary hierarchy, table descriptions, table data elements, field formats, valid data values, and edits and validations for the new system. An established target data dictionary is used as a target against legacy data for the mapping process.

At a minimum, the Data Conversion Management Plan addresses the data currently in the DB2 database (including base, transactional, accounting, and reporting tables) as well as documents stored in the FileNet repository.

4.29.2.2 Analyze the Impact

Members of our team have been working with NOMADS and other state systems for the last several years and have a hands-on understanding of data coupling between IV-A and IV-D components of NOMADS. For example, we know that the data-structures for Person and Address and several other key entities need to be disentangled as part of the conversion effort. During a legacy study exercise to be executed as a part of the data conversion planning process, we confirm our understanding of the existing infrastructure support available for the legacy NOMADS. This includes analysis of nightly batch window, application uptime, weekly load on state infrastructure, as well as tools and resources available to support various data conversion and migration activities. We are already very knowledgeable about the NOMADS system and have an understanding of current issues such as the person resolution issues present in NOMADS. We work with DWSS to streamline the person creation process in NCSEAS as well as in data conversion to reduce the person merge issues. We rely on our collaborative approach and DWSS legacy expertise to define the characteristics of our detailed data extract strategy, taking into consideration frequency of extracts, file formats, volume of data (considering Pilot, implementation regions and final Statewide implementation), and types of data to extract in each cycle from identified source databases.

These periodic extract requests ultimately impact the existing production nightly batch schedule, require storage capacity for temporary and longer duration retention of large

volumes of extracted data, add load to the network, increase backup and recovery requirements, and increase loads on file transfer mechanisms from the NOMADS mainframe to conversion servers. During mock conversion cycles and during go-live phases, the DWSS infrastructure has to prepare for additional load due to potential higher volumes of data coupled with timely delivery of extract files to reduce downtime on both legacy and new NCSEAS systems as implementation progresses.

During development of the Data Conversion Management Plan, we work with DWSS infrastructure and legacy system experts to document expectations and assess impact to the state infrastructure and resources. Based on the gaps identified in this assessment, a remediation plan is developed that includes an approach to address impact and steps to implement the remediation plan.

4.29.2.3 Develop and Test Conversion

Before the converted data is tested through the NCSEAS application, we develop, test, and validate the conversion process itself to confirm the success and accuracy. We work with DWSS to establish automatic and manual validations for each of the 4 steps of the conversion process:

- ***Identify – The data in legacy system is analyzed and identified for conversion***
- ***Extract – The identified data is extracted from legacy database and transformed using the ETL tool, and customized to meet quality and transformation requirements***
- ***Transform – The extracted data is cleansed and transformed to prepare for loading into the NCSEAS solution database***
- ***Load – The transformed data is loaded into NCSEAS solution database***

Validation activities for conversion testing include the following:

- ***Summary and exception reports to monitor and control the ETL based conversion process and are used to confirm that the mock conversions ran properly as part of conversion.***
- ***These reports display the row count of legacy table(s), exceptions on the source table, filter conditions on the source tables, and counts within the NCSEAS target tables***
- ***Counts from source table are compared with the counts of the target tables – based on direct conversion as well as based on data transformation rules (where applicable). This specifically applies to the case records and Control number (e.g., Case and Participant numbers) counts.***
- ***Reference tables are validated between source tables and converted target tables***
- ***In addition to validation of summary counts, sample data is validated between source and target tables. This sampling is based using scenarios such as:***
  - ***Case status***
  - ***Family and household composition and size***
  - ***Financial data like account balances, CSE payment, bank account numbers, and lien***
  - ***Duplicate cases and members, missing mandatory data elements, invalid data range/format/type exceptions***

- ***Two full mock runs are done to bring legacy data into NCSEAS application***

The testing phase validates that the conversion software is working as designed and that conversion design requirements are met. A conversion test plan is completed and approved before testing begins. The plan includes test scripts identifying each area of data conversion and the conditions to test if a requirement is met. In addition, the plan includes the scope of the testing effort, a schedule to support the testing tasks, roles and responsibilities of resources involved, entrance and exit criteria, and the communication process for identifying, recording, and resolving conversion issues and defects.

4.29.2.4 Manual Data Conversion

A successful data conversion process is grounded in collaboration with legacy IT staff early in the conversion planning and use of an iterative approach to conversion. Results improve with each run as data issues are identified and addressed early and often. We continue to enhance automated conversion processes if possible to address data issues that arise during conversion.

In the event that an issue cannot be addressed with automation, we work with DWSS to identify a high quality approach to perform manual correction as necessary on individual records. We collaborate with DWSS staff across each project phase in order to achieve successful data conversion.

Our goal is to reduce the magnitude of manual data cleanup required, realizing that we are not able to fully eliminate manual cleanup. We identify the data that needs manual cleanup prior to conversion cutover. It is a leading practice to conduct manual cleanup in the legacy system, whenever possible. Manual cleansing involves analysis and correction of data by an individual DWSS worker or teams of DWSS workers. Data identified for manual conversion is captured in reports organized for distribution to individual case workers who perform the data cleanup.

Deloitte assumes that DWSS performs manual legacy data purification processes necessary to cleanse the data. Deloitte works with DWSS staff to identify, monitor and track progress of cleanup tasks based on timeframes jointly developed.

4.29.2.5 Functional and Technical Conversion Design

We work closely with DWSS staff during the conversion planning process designing, documenting, and implementing conversion rules and procedures so that workers have confidence in the integrity of the converted data. After completing the initial Data Conversion Management Plan, the next critical task is development of a robust conversion design document. The design is based upon and reflects the content of the conversion plan in terms of how data enters the legacy NOMADS, how this data is manipulated within NOMADS, and any additional interactions with other internal and external systems. A detailed mapping is established between the NOMADS legacy source data fields and the new NCSEAS data fields. Because this data mapping serves as a baseline for development and testing of data conversion programs and procedures, accuracy in this step is critical to the quality of the converted data.

We devote significant time and resources to completing conversion design. We leverage the knowledge of experienced NOMADS users to understand existing functionality and

procedures. Through their involvement, these users also gain a greater knowledge of the new NCSEAS solution and confidence in the integrity of the converted data. The following table summarizes key activities for the functional and technical design of the legacy data conversation:

Phase	Conversion activity
Functional design definition	• ***Data quality issues with existing NOMADS subsystems and other external data stores are identified as part of the JAD sessions, which provides input to defining the cleansing and conversion approach to NCSEAS.*** • ***Conversion team conducts data mapping iteratively, in coordination with DWSS, as additional functionality and entities are defined for NCSEAS. The DWSS team has the responsibility of assisting with the mapping of NOMADS legacy data elements to NCSEAS data elements and confirming the mapping.*** • ***Conversion team designs detailed conversion algorithm and procedures and processes for manual conversion*** • ***Conversion team designs the software to accept multiple parameters in order to run the software in phased implementation and just-in-time conversion*** • ***Conversion team designs the management, performance and user reports to list the duplicate cases and members, error reports and conversion efficiency reports for the conversion processes performed***
Technical design definition	• ***Conversion team works closely with application development team to develop the technical design for the automated conversion software including components of data conversion steps and any customization*** • ***Detailed technical design is also prepared for software to support manual entry of data, if required*** • ***Technical design is continually refined based on approved changes needed to the conversion software identified during our iterative mock conversion runs*** • ***The DWSS team is responsible for extracting data from legacy and ancillary systems***

Table 4-32. Key conversion activities during design of the legacy conversion.

4.29.2.6 Conversion in Lower Environments

We perform conversion testing in lower environments which not only confirms the functionality of the conversion process but results in the establishment of sufficient, available data in each environment. We use the SAP data services tool to perform the appropriate masking and/or other changes to eliminate private production information in non-production environments, this converted data can then be utilized in the development and testing environments to support Unit Testing, Integration Testing, User Acceptance Testing, Performance Testing, and ultimately Mock Conversion runs.

Unit Test Conversion Software

As we progress to the unit test phase of data conversion, developers execute unit test scripts, review the results, document defects and implement fixes until defects are resolved. Test results are saved to confirm accountability, confirm test coverage is achieved, support peer review of results, and to provide testing statistics. These scripts provide a framework for testing and promote a complete testing effort by documenting details of the conversion process to be tested and the testing inputs and expected results.

Integration Testing

The primary objective of integration testing is to identify any potential data overlap or business rule inconsistencies in the individual components of the conversion software. Conversion integration testing includes construction of test data and other structures that

may be needed to fully test conversion processes. Conversion testing employs both test data and production data to support the validation of the conversion processes and programs.

The use of masked production data for conversion testing provides a broad set of diverse testing data that provides real-life scenarios that fabricated test data may not adequately simulate. Using production data during testing allows potential data-related problems in either the automated or manual process to be identified and resolved earlier in the conversion process. As noted necessary steps are taken to safeguard production data to keep it private and confidential. For example, the data is masked or otherwise "scrubbed" to confirm that client information and FTI remains confidential.

User Acceptance Testing

Test data for UAT is created from a full run of the conversion software. This provides validation of the conversion process in parallel with the NCSEAS software; the UAT testers are essentially testing the solution as it would exist from functional and data perspectives on production day 1. We validate that the reference data to support codes and values in the new NCSEAS system are populated and configured before conversion occurs. The UAT environment provides end users with the opportunity to verify and validate that the new system is operational using converted data. As with the other test environments, production data in the UAT environment is appropriately masked to safeguard private, confidential data.

Performance Tuning

Conversion software performance tuning is aimed at streamlining and confirming the expected performance of conversion execution. Performance evaluation and tuning are performed at various stages of the conversion testing process, beginning at unit testing level though mock conversion cycles. The limited time available over a typical weekend go-live conversion necessitates an efficiently designed and high performing conversion process. In our prior conversion efforts we have successfully incorporated changes to improve conversion performance, using techniques such as multi-threading, to provide more time for verification and validation activities during go-live.

Mock Conversion Runs

An important component of our conversion methodology is the execution of mock conversions. This process allows for the replication of go-live processes as closely as possible. A mock conversion run is a dry run through the entire conversion process from end to end, as would be expected at go-live. Mock conversion runs can be informative and indicative of the success of the actual conversion.

The reports produced from the mock conversion runs confirm data that did not successfully make it through the conversion process as well as data that did. This may include information on case data, participant data, financial data, or various other scenarios that are identified in the Data Conversion Management Plan. Mock conversion runs provide critical information to iteratively refine conversion processes and maximize data quality and throughput.

Exception reports that are generated after a mock conversion identify the extent of manual data cleanup that remains to be completed as well as metrics to help determine readiness and the magnitude of potential post go-live data cleanup efforts that may be required.

4.29.2.7 Phased Rollout

The implementation of NCSEAS must result in a minimal amount of system downtime and service disruption in local offices. The DWSS requirement to implement NCSEAS in a phased approach results in a splitting of the legacy NOMADS production data conversion process across multiple iterations. We employ our Pilot and Regional rollout selection toolkit to determine case loads scenarios based on geographical boundaries and apply the 'Pull' or the 'Wait' method to determine which scenario fits DWSS caseloads better. The 'Pull' method brings the related cases for a participant being converted into a particular rollout. If a Non-Custodial parent is converted and they have multiple associated cases, their cases are pulled into the region being converted regardless of where the other custodial persons reside. In the 'Wait' method, related cases are held in the NOMADS system until the last of the participant is ready to be converted. During the conversion planning process, we work with DWSS and employ our pilot and regional rollout selection tool to determine the best approach that fits the caseload mix.

The phased rollout approach also presents other business process considerations:

- ***During the phased rollout period, from the point of going live in the Pilot county or counties to the point NCSEAS is implemented statewide, when a new referral or application for services is received, member clearance has to be performed in both NOMADS and NCSEAS to determine where the new participants and the case have to be created.***
- ***Custodial parents may have multiple cases which cross regions; or cases may have custodial parents, noncustodial parents, and dependents which are dispersed across multiple regions.***
- ***Interfaces to external agencies have to deal with data that is merged from the old and new systems. For example, when a payment is received that affects multiple cases across the old and new systems, the receipt may have to be allocated across cases and processed in two different systems.***
- ***When FCR data is sent to Federal Office of Child Support Enforcement (OCSE), it has to include case and participant data from both systems.***

As part of our conversion planning, we devise the processes and procedures to handle these types of conversion-related scenarios for the. We assume that DWSS will handle the splitting of inbound files and merging of outbound interface files during the phased rollout files.

During cutover to production, once legacy extract files are fed into the conversion process, both legacy NOMADS and NCSEAS systems are locked from any online update access until verification of a successful conversion. This validates that data integrity is maintained and facilitates easier recovery in the case of a rollback. Typically, if NOMADS allows it, converted cases can remain available in NOMADS in read-only mode.

The phased rollout go-live schedule includes a step-by-step timeline of the tasks that are accomplished during the cutover window. We work with DWSS to review current legacy access needs, batch processing windows, online uptime and weekend processing requirements, involvement of external entities, data conversion timeframes, and the volume of data to be converted during each phase, to develop a comprehensive phased go-live schedule that dictates when and how data is available in both NOMADS and NCSEAS.

4.29.2.8 Acknowledgement of Responsibilities

One of the best practices in completing the Data Conversion Management Plan is to have a clear definition of the responsibilities for each party during the data conversion effort. We agree and acknowledge our responsibilities for Legacy Data Conversion as described throughout this section.

4.29.2.9 Conversion and Testing Plan

As documented in Section VI: 4.18 Data Conversion Management Plan and referenced in other areas of this Section VI: 4.29 Legacy Data Conversation, we create a comprehensive Data Conversion Management Plan that defines the detailed plans and overall approach for the complete data conversion effort. The plan addresses each aspect of data conversion, including specific requirements for data mapping and conversion steps as well as accommodation of related project requirements such as the phased rollout of the NCSEAS solution in production. It also includes a comprehensive schedule that identifies the conversion and migration related activities, dependencies with tasks in application development, application testing, implementation and go-live tasks. The plan is developed in collaboration with DWSS and is reviewed and approved by the appropriate NCSEAS stakeholders prior to the start of the actual data conversion activities.

A Data Conversion Test Plan reflects the detailed testing requirements for data conversion and migration validation. The plan provides specific test cases for confirming the correct translation of data between the old and new systems, data conversion and synchronization processing supporting a phased roll-out, as well as procedures for the execution of mock conversions. In addition, the plan defines the overall scope of the testing effort, a schedule to support the testing tasks, roles and responsibilities of resources involved, and test entrance and exit criteria. It is imperative that data conversion testing be coordinated with the other development and testing activities, with the corresponding benefit that conversion testing can be used to establish test data in the development and test environments to support NCSEAS application testing. The Data Conversion Test Plan is therefore integrated with the Test Management Plan described in Section VI: 4.19. The integrated test management plan also includes DWSS and implementation vendor tasks, milestones, deliverables, realistic duration, resources and dependencies so that the complete scope of required testing is identified and coordinated across the various NCSEAS project activities.

The test plan reflects that the criticality of data elements required for conversion can be dependent on the current status of the case within the typical IV-D case lifecycle. A case that is currently in enforcement may have different mandatory data elements than a case where paternity establishment is pending. The data requirements for a IV-D case that has a public assistance IV-D case type is different from a case that has a non TANF case type. We

work with State subject matter experts to enumerate these variations and identify in detail, criteria used to determine successful migration within each child support functional area.

4.29.2.10 Conversion and Testing Report

Data conversion testing validates that the conversion software is working as designed and that the conversion design requirements are met. Testing is also essential in assessing the readiness of the overall conversion process to proceed in support of the production rollout. The Conversion and Testing Report details the tasks accomplished in preparation for and the testing of the data conversion processes, as well as the detailed results of testing within the lower non-production environments. Approval of this report signals that sign-off of the conversion process has been provided by the DWSS stakeholders, and that the team is ready to begin production conversion efforts based on the roll-out strategy identified in the Data Conversion Migration Plan.

4.29.3 Deliverables

4.29 LEGACY DATA CONVERSION

4.29.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.29.3.1	Data Conversion	4.29.2.1 through 4.29.2.8	30
4.29.3.2	Conversion and Testing Plan	4.29.2.9	10
4.29.3.3	Conversion and Testing Report	4.29.2.10	5

Deliverables	*Confirmation of review time*
Data Conversion	***30 days***
Conversion and Testing Plan	***10 days***
Conversion and Testing Report	***5 days***

4.30 Testing and Accepting New System

4.30.1 Objective

4.30 TESTING AND ACCEPTING NEW SYSTEM

4.30.1 Objective

There will be many forms of testing to establish that the Implementation Contractor adequately scrutinized components for deficiencies and inconsistencies. Each form of testing (e.g., system testing, integration testing, "smoke" and regression testing, performance (load) testing, and user acceptance testing) will require test plans. The test plans will address all requirements. The test reports will serve to confirm the adequacy of the software's functionality.

We plan multiple testing tasks to identify the system's abilities to meet functional and technical requirements. Deloitte brings a structured, low-risk approach to testing the NCSEAS solution, including system testing, integration testing, "smoke" and regression testing, performance testing, and user acceptance testing.

The objectives of the testing phase are:

- ***Advise stakeholders/clients/project team members on the perceived software quality***
- ***Confirm assumptions made in requirement and design specifications through concrete demonstration***
- ***Verify that the software product works as designed and the integrated software is verified using the defined criteria to set expected results***
- ***Verify that the requirements are implemented appropriately and traced back to test scenarios with recorded results***
- ***Validate the continuity in enhancements to and development of system components with a thorough regression strategy***
- ***Verify the system meets the Federal OCSE Certification Test Deck scenarios***

SECTION
HIGHLIGHTS

Our testing approach brings to the Agency a tried and successfully verified mix of people, processes, and tools. This includes:

- ***A validated baseline repository of more than 5,200 test scenarios from our experience on the CA CSE project***
- ***Knowledge of testing tools from our strategic alliance with key vendors, including IBM, which gives us priority access to information during tools-based testing and troubleshooting***
- ***An established set of test scripts that provide a baseline for the Federal certification test deck, which can be included in our initial System Test effort to provide early validation of certification scenarios***

Deloitte has designed the testing process to comply with DWSS requirements and produce test plans and test reports to valid the adequacy of the software's functionality. We conduct test planning, deficiency management, and quality assurance throughout the process.

We have proposed a realistic, rigorous testing approach and schedule that optimizes resource utilization and is based on a set of clear, repeatable tasks for consistency in test execution and results. We believe that these optimize the testing effort and lower the implementation risk to the NCSEAS project. Our proposed Gantt chart for testing and accepting the new system is provided in the following figure.

DEMONSTRATED
ABILITY

Deloitte worked on the California project, where we executed over 5,200 test scripts across 550 online screens and 1,800 batches with a capacity to support over 6,000 users. At the end of testing, we retested 100 percent of the failed scripts, and all passed.

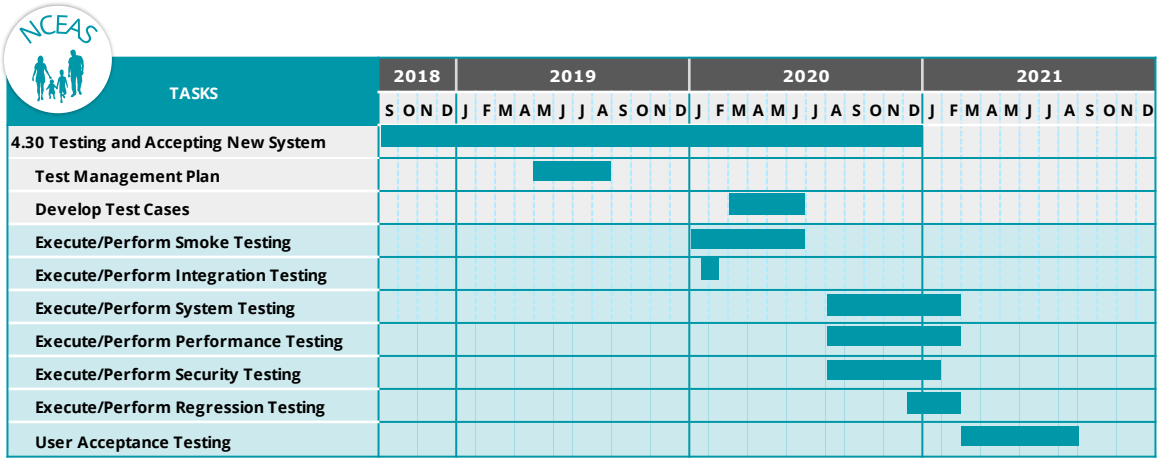

Figure 4-42. High-Level Schedule of the testing and accepting phase. Summary of key testing types and logical grouping of scenarios during system test.

4.30.2 Activities

4.30 TESTING AND ACCEPTING NEW SYSTEM

4.30.2 Activities

4.30.2.1 Integration, System, and Performance Testing

A. During the planning phase of the project, the Implementation Contractor shall prepare test plans to address integration, system, and performance testing. After software development and unit testing, each component of the system must undergo integration and system testing according to the approved testing plans.

B. The integration testing addresses the coordination of all system functions to achieve functional objectives. System testing addresses the coordination of all system capabilities for full functionality and adherence to performance standards. The Implementation Contractor must provide for the execution of the test plans, identify and correct software defects, and document the system's full functionality.

C. Each system module must be subject to integration, system, and performance testing. One or more test environments must be established, configured with the full NCSEAS, and prepared with test data converted from the legacy systems and interfaces functional to the extent practicable or simulated. The Implementation Contractor must prepare and conduct a performance test plan employing system and network monitoring software and system load simulation software. The applicable test plan must include the use of full-size databases, increasing numbers of users, and increasing activity levels. The system test will continue until performance measures are met under full operational conditions. System integration and performance testing plans, test cases, test scripts, and test results must be documented and maintained for the Program, the QA contractor and for IV&V review and audit.

D. This task shall include a complete testing of all interfaces between the new system and all other systems to which the new system will interface to fully achieve all functional and technical objectives. The project plan and all test plans must fully incorporate this requirement.

E. Implementation Contractor's integration, system, and performance testing responsibilities include, as a minimum, the following:

1. Prepare integration testing plan;
2. Prepare system testing plan;
3. Prepare performance testing Plan;
4. Establish the applicable test environments;
5. Configure the system to the most current production version of all underlying software, tools, and databases, unless the State agrees to an exception;
6. Configure the system to the most current production version of all enabling interfaces to other supporting systems, unless the State agrees to an exception;
7. Develop applicable test cases;
8. Create and load test case data;
9. Conduct integration and system tests (If appropriate, individual system modules can be tested as readied. The compatibility of all modules for the entire system must be tested when all modules have been completed.);
10. Correct problems, repeating testing until expected results are obtained;
11. Conduct performance testing;
12. Identify / correct problems, repeating performance testing; and
13. Prepare integration, system and performance test result reports.

4.30.2.2 Acceptance Testing

A. The NCSEAS must undergo an acceptance test cycle. All functional aspects of the system, including workflow components, shall be tested pursuant to an acceptance test plan developed by the Testing Manager. The Implementation Contractor must establish an acceptance testing environment that uses or is equivalent to, the production environment.

B. An acceptance test team — composed of Program management and users – will perform the acceptance test. The acceptance test will evaluate the NCSEAS as an integrated whole. The acceptance test will include all activities that will take place during the actual implementation.

C. Acceptance testing will verify the following:

1. There are no critical and high-priority defects existing in the software;
2. The application software is fully installed and fully functional;
3. Appropriate conversion of legacy data and manual data is complete;
4. Complete and accurate system documentation is present;
5. The effectiveness of training methods and materials;
6. The response time of the system and overall system performance;
7. System hardware, software, and telecommunications performance;
8. System, data, and application security; and
9. Accuracy / performance of system interfaces.

D. Acceptance testing will be conducted upon successful completion of the integration, system, and performance testing effort and agreement by the Program's project management team that the system is ready for acceptance testing. As problems are discovered they must be evaluated, their impact determined and documented. Necessary modifications must be made to software, documentation, and training materials consistent with the system design documents and other deliverable acceptance criteria.

E. Implementation Contractor's acceptance test responsibilities include:

1. Establish the application in the acceptance test environment;
2. Supply training needed for acceptance testing;
3. Supply documentation needed for acceptance testing;
4. Provide support during acceptance test in accordance with established service level agreements;
5. Document and correct problems; and
6. Create and distribute acceptance test analysis reports.

4.30.2.3 Test Plans

A. For each functional design, a testing plan will address the means of ensuring that the software has met the objectives of the functional design. The test plan will specify test cases to examine each functional objective. The test plan will describe the test conditions and expected results to verify that the NCSEAS components have achieved each functional objective.

B. The test plan will specify test conditions to verify the functionality of each:

1. Derivation;
2. Edit;
3. Workflow event;
4. User alert and response;
5. Document generated;
6. Chronology entry;
7. Screen navigation;
8. Data conversion/integrity testing; and
9. Load/stress/volume testing.

C. The Implementation Contractor is responsible for the following test plans:

1. System Test Plan;
2. Integration Test Plan;
3. Regression Test Plan;
4. Performance Test Plan;
5. Security Test Plan to include a Security Matrix, set up for all environments and a comprehensive list of roles; and
6. Production Smoke Test Plan to include off-hours and staffing provisions.

4.30.2.4 Acceptance Test Reports

A. For each functional design, an acceptance test report will address the testing results. This report will document the satisfactory results of testing after the Implementation Contractor has remedied the defects. The acceptance test report will provide a summary of testing results and defect remediation. The acceptance test report will provide an overview of testing, re-testing, and remediation with the number of defects by priority and timeframes required for remediation. The acceptance test report will provide for operational readiness documentation with examples of satisfactory results. The acceptance test report will document any outstanding issues.

B. The Implementation Contractor is responsible for the following acceptance test reports:

1. System Acceptance Test Report;
2. Integration Acceptance Test Report;
3. Regression Acceptance Test Report;
4. Performance Acceptance Test Report;
5. Security Acceptance Test Report; and
6. Production Smoke Test Report.

4.30.2.5 User Acceptance Test Training Materials

The Implementation Contractor is responsible for training Program staff that will perform user acceptance testing. This includes delivering application training and providing user acceptance test training materials. Instructor led training must be provided in a group setting for all members of the acceptance test team in two (2) session at a minimum, one in Las Vegas and one in Carson City.

4.30.2.6 User Acceptance Test Plan Template

A. The Implementation Contractor is responsible for providing a User Acceptance Test Plan Template. This template will be provided to the Program and will contain test scripts, use cases, and test cases. The Program will perform the user acceptance testing and document the test results.

B. The template should be set up as a spreadsheet using tabs as a guide for transparency. For example:

1. Tab 1 – Requirements;
2. Tab 2 – Design Documents;
3. Tab 3 – Use Cases;
4. Tab 4 – Test Scripts;
5. Tab 5 – Test Cases/Scenarios (allowing space for results);
6. Tab 6 – Defects/Tracking; and
7. Tab 7 – Exceptions/Changes.

Integration, System, and Performance Testing

Our approach to quality testing provides the depth and breadth for developing a comprehensive test plan. We use both a top-down approach, breaking the application into testable processes, and a bottom-up validation that approved requirements map to and are covered by test scripts. We create a complete set of testing scripts to effectively exercise the NCSEAS solution under many conditions from both a business and technical perspective. Our approach goes beyond the writing of test cases. We focus on the development of meaningful, business-driven test scenarios that trace directly back to functional requirements. Our detailed scripts confirm that NCSEAS works the way it should (positive tests) and that it does not do the things it should not do (negative tests). In this way, we cover less-common "negative" flows within the application.

Our test approach is based on the following core principles:

- ***Early involvement and active participation of testing staff and third party interface representatives in the design and development process to facilitate a smooth transition to testing.***
- ***A structured approach and detailed timeline to effectively plan and manage the testing effort.***
- ***Collaborative planning, review, and approval process with DWSS and other stakeholders for test scenarios and data strategies.***
- ***Regular status reporting of testing progress, including detailed summaries of scenarios tested and passed, deficiencies, risks and issues, and mitigation strategies.***

We use the outputs from the requirements and design activities – process flows, use cases, business rule definitions, requirements traceability – to define the NCSEAS test scripts, scenarios, and detailed test cases. Specifically for the NCSEAS project, we can also add a strong baseline of more than 5,200 test scripts from the CA CSE solution. Working with the NCSEAS development team, we define a full suite of test scenarios by the end of the Construction task to establish a solid execution baseline before even starting the System Testing task.

For test execution to be comprehensive, base data must be established for the testers to use and/or modify based on the test case. Based on the size and intended use of the test environment, data is loaded accordingly. If existing case data from production is to be used,

Personally Identifiable Information (PII) must first be completely scrubbed from the data. Our team can leverage robust case-copy tools that act as accelerators for test preparation. By copying and/or converting data from existing production databases or using automated test scripts to create new data, test data is captured or defined for loading into the testing environments prior to the start testing.

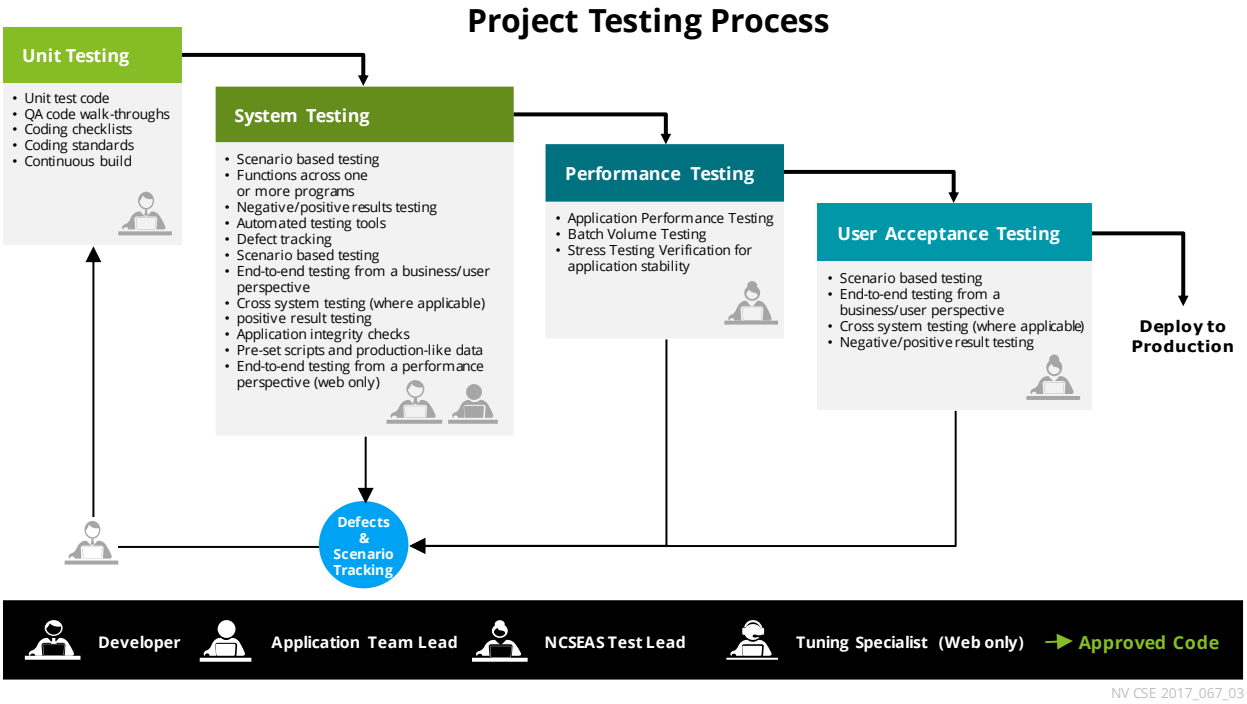

Figure 4-43. Progression of Our EVD-based Testing Process.

Our team tests integrated software components during Integration Testing. This testing validates functions such as a complete CSE case initiation process, which may encompass automated referral processing, the online pending referral function, automatic case setup, and automatic editing of referral data. Integration Testing detects and fixes defects early in the process, resulting in fewer UAT and production flaws. This reduces maintenance costs and provides a high-quality production-ready product.

System Acceptance Testing is performed in the Test environment with a fully populated database to simulate required production-like test scenarios. This includes end to end testing from a user or business perspective and tests cross system impacts. As with Integration testing, any problems or defects discovered are corrected and retested before closure.

As previously noted, given our experience and knowledge of the CA CSE solution, which serves as the transfer solution for NCSEAS, we plan to use the test scenarios created by members of our team as our baseline. The following table is a complete breakdown of the test scenarios that can be leveraged or modified to meet the needs of the NCSEAS project.

Functional Area	*# of System Test Scripts*
Activity Logs	***34***

Functional Area	*# of System Test Scripts*
Case Data Exchange	***493***
Case Data Management	***551***
CSE Net	***954***
Customer Service	***21***
Enforcement	***378***
Establishment	***306***
Federal Case Registry	***12***
Financials	***860***
IV-A Interface	***654***
Locate	***161***
Navigation	***45***
Program Monitoring	***261***
Self Service	***48***
Utilities	***446***
Total	***5,224***

Table 4-33. Available Test Cases from CA CSE. Approximate count of existing test cases that can be leveraged from the baseline CA CSE solution.

The success of NCSEAS depends on acceptance and buy-in from the end users, and one of the most critical factors in achieving this goal is application performance. End users expect that the application be functionally robust and highly responsive. A system that does not meet performance expectations causes frustration for stakeholders. For these reasons, performance testing is conducted to identify and resolve system bottlenecks and confirm that the application meets the specified performance criteria before it is released to the end user community.

To accomplish this goal, performance and stress/load testing is conducted during System Testing using an iterative process aimed at optimizing application code, evaluating application and infrastructure performance, and forecasting the number of computing resources required to sustain a system. Any performance related issues are tracked, resolved, and retested in a follow up performance test until the system meets the identified performance standards. This ultimately serves to instill confidence that the system performs according to the agreed-upon response time metrics.

A successful implementation of the NCSEAS solution hinges upon the success of end-to-end testing of the various interfaces with federal, state, and local agencies. The flexibility of NCSEAS solution allows for streamlined bi-directional reporting of information to these external agencies, and we work with each of the agencies during System Testing to maximize our ability to test these interactions.

The results of Integration, System, and Performance testing are generated into reports to share with DWSS in order to get approval to move to the next phase and begin User Acceptance Testing.

Acceptance Testing

Although there is significant collaboration with DWSS staff during requirements, design and development activities, UAT represents a period of significant interaction between our team and DWSS end users, during which we work with DWSS to plan and manage UAT and the final confirmation of the NCSEAS solution. Our team, comprised of well-trained, well-experienced practitioners in the CSE domain, guides the test planning process and provide suggestions for sufficient coverage of test data and test scenarios. We also assist with logistics and the day-to-day management and monitoring of UAT progress. We understand an acceptance test team, including DWSS management and users, perform the acceptance testing and Deloitte plans to provide training/documentation of the system to DWSS to allow for successful UAT testing. In addition, Deloitte provides on-site UAT support in one office in Las Vegas and one office in Carson City. This provides an opportunity for UAT testers to get their questions answered promptly

EXPERIENCE TRANSFERRING CALIFORNIA

We understand the importance of working with DWSS to plan ahead for the User Acceptance Testing phase. From our recent experience transferring California, we developed the best practice of working with the Agency to have them start creating test cases ahead of time. We also shared the UAT system test cases with Agency SMEs allowed them to learn how the test cases are written and traced before they need to be executed during UAT.

The UAT phase allows for DWSS staff to perform the actual User Acceptance Testing. User acceptance testing is your opportunity to confirm that the NCSEAS solution meets its documented and agreed upon requirements and design, and also provides an opportunity to generate excitement in the user community for the new solution. User Acceptance Testing works best when a project has maintained adequate stakeholder participation and team member involvement throughout the design and development process. Planning ahead makes all the difference having a successful UAT. By establishing plans and expectations in advance, DWSS participants are informed about how testing is performed and what is expected during execution. By establishing the testing schedule up front, staff coverage can be planned and resources aligned with testing activities. Factors such as deficiency resolution rate, learning curves, staff availability and scenario processing times must be considered to complete UAT activities according to the project schedule.

Our team works with DWSS staff to establish and define the entry as well as exit criteria as part of the UAT planning process. A sample UAT entry & exit criteria is shown in the following table.

UAT Entry Criteria	*UAT Exit Criteria*
• *System Test phase is complete per the exit criteria defined for System Testing phase* • *Test Environment(s) is stable and ready for use* • *Interfaces in scope are complete and necessary communication channels are established in the Test Environment(s)* • *A test environment is available for the external interfacing systems*	• *The planned UAT scenarios have been executed, validated by the UAT test lead and the test results are documented in Selenium* • *Defects found in UAT are entered in Jira and linked to relevant UAT test cases for reference*

UAT Entry Criteria	*UAT Exit Criteria*
• ***UAT scenarios are base lined and approved*** • ***Testing Tools are installed and configured in the UAT environment*** • ***UAT testers are available and trained in UAT processes and tools*** • ***UAT test data requirements are defined and verified by the UAT test lead*** • ***Installation instructions or Build Guides are completed and environment readiness walk-through is completed*** • ***Shakeout of UAT Test Environment is completed and is fully operational with no major issues, including the verification of NCSEAS application functionality, test data, and required user security***	• ***No outstanding critical severity defects remain*** • ***No high severity defects remain without approval from state to exit the UAT test phase*** • ***UAT test results have been reviewed with the relevant project team and project leadership*** • ***With respect to interface testing, successful execution of the NCSEAS application with either real data (when the interface is ready for handshake) or stubbed data (if the interface is not ready for handshake) is considered completion of interface based testing.*** • ***A "Go" decision has been received from Agency leadership to exit from UAT and move to Production environment***

Table 4-34. Sample UAT Entry & Exit Criteria.

The following is a high-level summary of our proposed Defect Management Process:

- ***Identify Defect. A tester discovers an unexpected result during test execution or test review that could be a defect. The tester records details of the defect, such as the steps that can be taken to reproduce the problem.***
- ***Log Defect. The defect is logged in the defect tracking tool after confirming that a similar defect has not already been reported. This includes information about the steps to reproduce the defect, actual and expected results, credentials used when defect was discovered, and screenshots of the defect.***
- ***Triage Defect. The defect is triaged during a periodic Defect Triage meeting. Each reported defect is reviewed with appropriate DWSS stakeholder(s) to reach consensus on the defect's validity, severity, and priority. Invalid defects are returned to the tester for review; valid defects are assigned to the functional team or development team for disposition. Change requests are deferred to be addressed at a later time.***
- ***Develop Defect Resolution. The assigned development team member defines a proposed resolution for the defect using the information provided about the defect. We collaborate closely with DWSS to manage defect resolution and code correction. In this collaboration process, defects are assigned to the project team, composed of both Deloitte and DWSS staff, for correction and QA purposes.***
- ***Deploy Defect Resolution. Once the corresponding component has been corrected and unit tested, a software release is created and promoted to the Test environment using the procedures defined within the Configuration Management plan. Initial smoke tests are performed in the Test environment to verify successful deployment of the release.***
- ***Retest Defect. The original tester that discovered the defect is assigned to re-run the applicable test scenario to confirm whether the defect has been successfully fixed. If the test is successful, the corresponding defect is marked as resolved; if the test is not successful, it is returned to the development team for further disposition.***

Test Plans

The Test Plans are aligned with the overall testing methodology described earlier in this section, and specifically define the detailed scope for testing, our approach for each testing type, resources to be utilized for testing, and schedule of system test activities.

The plans also identify the solution features to be tested, the types of testing to be completed, specific testing tasks, resources assigned to perform each task, and any risks requiring contingency planning. The following test plans are created for this project:

- ***System Test Plan***
- ***Integration Test Plan***
- ***Regression Test Plan***
- ***Performance Test Plan***
- ***Security Test Plan including a Security Matrix set up for the environments with a comprehensive list of roles***
- ***Production Smoke Test Plan including off-hours and staffing provisions***

The Test Plans are created after the NCSEAS requirements and design are established to provide foundational documents that feed the test strategy and testing approach. Our approach to creating a sound strategy and management plan for testing the NCSEAS solution to validate the functionality of each:

- ***Derivation***
- ***Edit***
- ***Workflow event***
- ***User alert and response***
- ***Document generated***
- ***Chronology entry***
- ***Screen Navigation***
- ***Data conversion/integrity testing***
- ***Load/stress/volume testing***

Acceptance Test Reports

We track the status for testing across each phase and report on this status during our periodic status meetings. We provide test plans and test results for each of the tests conducted by the testers which include a test identifier to uniquely identify each test case and a summary of test results with the problems encountered as of that date and status. At the end of each testing phase (Integration, System Acceptance, Regression, Performance, Security, and Production Smoke Test), a formal Test Report is generated to report on the summary of results, defects encountered by priority, resolution of defects, and any outstanding items with timeframes for remediation. The Test Reports demonstrate the readiness to move to the next phase of testing and provide a forum for documenting any outstanding issues.

We generate a series of tracking lists on an as-needed basis to drive targeted discussions, such as defect triage meetings. These lists are typically extracted from the JIRA tool and provide both summary and detail information to facilitate the sharing of information with DWSS stakeholders and other participants in test meetings. The following are some example data templates for these extracts.

- ***Test Case Execution Progress: Template and dashboard used to share daily progress on test case execution, as well as a summary of defects broken down by their severity***

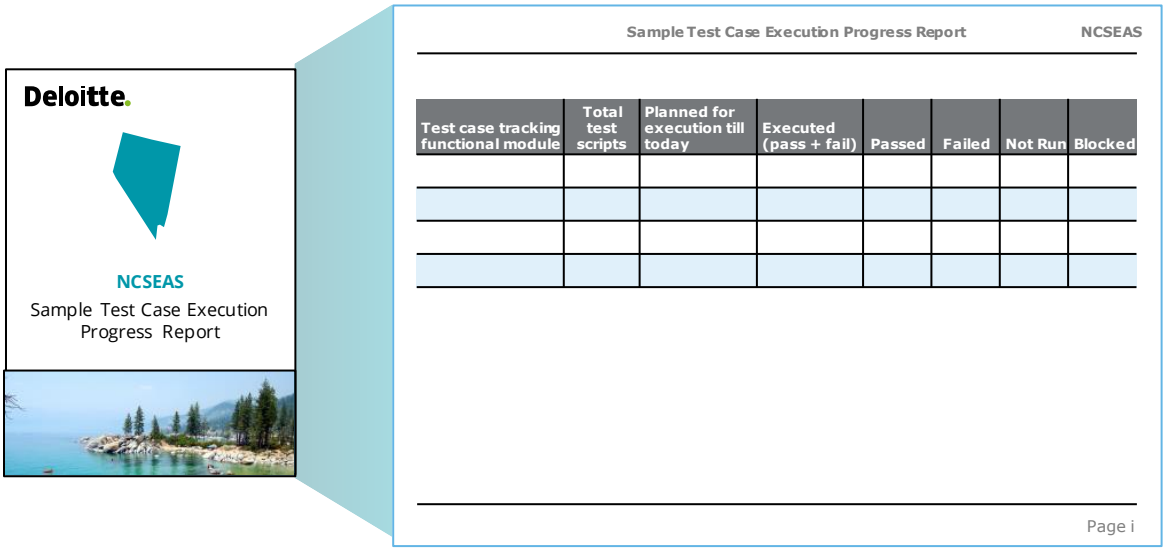

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Figure 4-44. Sample template for tracking test case execution.

- ***Defect Tracking. A summary of defects identified by corresponding functional module, including severity and current disposition.***

Functional Module	Critical				Major			Minor			Low	
	Total	Open	Ready for test	Total	Open	Ready for test	Total	Open	Ready for test	Total	Open	Ready for test

Table 4-35. Sample template for tracking defect breakdown.

- ***Defect Triage. The defect triage report is used to drive daily discussions between the development team, the testing team and designated Agency participants to discuss newly-identified issues or defects and to determine the appropriate disposition (e.g., assigned to the development team for a fix, working as designed, or future change)***

Defect #	Defect Title	Status	Date Created	Created By	Date Closed	Closed By	Defect Age

Table 4-36. Sample template for tracking Daily Defect Triage Discussion.

- ***Testing Performance Metrics Summary. A summary of test performance metrics, highlighting information such as defect density, defect disposition (e.g., the number of***

reported defects that are assigned for fixing, found to be invalid), defect root cause, as well as trends gathered during the test execution to date.

S.N.	Metrics	Processes measured and monitored	Formula	Unit of metric	Indicative values for reference
1	Defect rejection percentage (i.e., testing effectiveness)	The testing effectiveness is based on the ratio of invalid defects logged by testers to the total number of defects. The higher the ratio, the lesser the testing effectiveness	(Defects Rejected/Total defects detected)*100	%	< = 10%
2	Test case coverage	The test coverage is determined by the traceability between approved, in-scope requirements and the test cases mapped to them	Number of requirements covered (tested) by test cases/total number of requirements	%	100%
3	Effectiveness of builds deployed during every release/cycle (i.e., build quality)	Determine effectiveness of the builds in the context of defects planned for migration and actually fixed	Number of defects resolved in a build Total number of defects fixed in a build	%	100%

Table 4-37. Sample template for monitoring testing performance and periodic trends.

User Acceptance Test Training Materials

Deloitte works closely throughout the NCSEAS project to make sure DWSS is familiar with the functionality of the system. In addition, Deloitte provides training materials and training sessions to DWSS staff that perform user acceptance testing in order to facilitate a smooth transition into the UAT phase. Refer to Section VI: 4.31 Training for additional details, including details around the instructor led training.

User Acceptance Test Plan Template

We understand that the first step of a successful User Acceptance Testing effort is the development of a detailed User Acceptance Test plan. Our testing team works closely with DWSS staff and other designated test participants to create a comprehensive User Acceptance Test plan that describes the UAT testing approach, UAT pre-requisite and set-up tasks, DWSS and Deloitte supporting resources, and the schedule of UAT activities. The plan also includes a full list of UAT test scenarios and an end-to-end traceability of UAT test scenarios mapped to business requirements.

The User Acceptance Test Plan is finalized during the System Test time period as the foundational concepts of testing the various functions of the NCSEAS solution crystalize. We work closely with DWSS staff during creation of the User Acceptance Test Plan, which focuses on the following key steps:

- ***Review the NCSEAS business functional requirements to define the scope of test scenarios to be created and/or confirmed.***
- ***Create an inventory of UAT pre-requisites including infrastructure, security, external stakeholder readiness, end-user participation, testing facilities, and communication needs.***

- ***Establish a detailed work plan for UAT by taking into consideration UAT pre-requisites and NCSEAS solution integration.***
- ***Create UAT test scenarios and determine their execution sequence based on their business priority, logical grouping and UAT tester participation.***
- ***Establish traceability between business requirements and the UAT test scenarios for test coverage. Confirm that approved requirements are not left uncovered by a test scenario.***
- ***Establish a daily schedule of UAT test execution by taking into account tester participation, the test environment, and the NCSEAS solution build schedule.***
- ***Determine testing governance, defining roles and responsibilities for each of the stakeholders involved in UAT.***
- ***Document entry and exit criteria for UAT.***
- ***Document test reporting approach, frequency and approved testing metrics.***
- ***Establish "Go-Live" criteria and procedures to close out the User Acceptance Testing activities.***

The User Acceptance Test Plan is organized in the following tabular format in a Microsoft Excel spreadsheet.

- ***Tab 1 – Requirements***
- ***Tab 2 – Design Documents***
- ***Tab 3 – Use Cases***
- ***Tab 4 – Test Scripts***
- ***Tab 5 – Test Cases/Scenarios***
- ***Tab 6 – Defects/Tracking***
- ***Tab 7 – Exceptions/Changes***

4.30.3 Deliverables

4.30 TESTING AND ACCEPTING NEW SYSTEM

4.30.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.30.3.1	Integration, System, and Performance Testing	4.30.2.1	15
4.30.3.2	Acceptance Testing	4.30.2.2	10
4.30.3.3	Test Plans	4.30.2.3	15
4.30.3.4	Acceptance Test Reports	4.30.2.4	5
4.30.3.5	User Acceptance Test Training Materials	4.30.2.5	10
4.30.3.6	User Acceptance Test Plan Template	4.30.2.6	10

Deliverables	*Confirmation of review time*
Integration, System, and Performance Testing	***15 days***
Acceptance Testing	***10 days***
Test Plans	***15 days***
Acceptance Test Reports	***5 days***
User Acceptance Test Training Materials	***10 days***
User Acceptance Test Plan Template	***10 days***

4.31 Training

4.31.1 Objective

4.31 TRAINING

4.31.1 Objective

The training materials will incrementally attest to the preparations for implementation and will address all requirements. Training plans and preparation activities will specify the steps needed to prepare system users, trainers, and managers for the change in day-to-day operations responsibilities as well as the use of the modernized system's capabilities.

Deloitte believes that effective training and support is a critical component to NCSEAS as it involves a significant transformation of the underlying enterprise system. A successful NCSEAS implementation requires end-users to have confidence in the new system, understand how to use new tools and processes, solve problems and perform tasks required to deliver outstanding service to customers.

Our training approach has been used successfully across our broader public sector practice in the United States where we have designed, developed, and delivered curriculum to over 100,000 health and human services staff.

Our training approach, plans and preparation activities provide specific steps needed to prepare DWSS staff for the changes in day-to-day Child Support business activities that may occur with the transition to the new NCSEAS solution, helping them adapt to and take advantage of the new system's capabilities.

4.31.2 Activities

4.31 TRAINING

4.31.2 Activities

4.31.2.1 The Implementation Contractor shall be responsible for training users and technical staff in all aspects of the new system both from a user and technical perspective. The training strategy shall be outlined in a training plan that defines training goals, expectation, methods, and schedules. A training planning session must be held to review the training plan prior to the first actual training session. The Implementation Contractor shall detail in their proposal a training plan outline and schedule for users of each component of the system. The Contractor will be training approximately 1,000 staff to include State and County program and technical staff.

A. Implementation Contractor training responsibilities include:
1. Training management plan;
2. Web-based training development plan;
B. Functional training materials deliverables (examples below):
1. Online help;
2. Training manual (student and instructor versions);
3. User's quick reference guides, and
4. Web-based training content.
C. Technical training materials (examples below):
1. Restart and recovery procedures;
2. Data correction procedures; and
3. Configuration procedures.
D. Trainee testing and evaluative processes:
1. Prepare and deliver training; and
2. Provide large-volume reproduction of documentation and materials.

4.31.2.2 Training Materials

A. The Implementation Contractor will prepare and finalize the necessary training materials for each functional design at the conclusion of the acceptance testing process.

B. Preparation of training materials will involve establishing a NCSEAS training environment, setting up the training database, developing training scenarios, and creating the tools for evaluating whether staff has effectively absorbed the functionality and operation of the NCSEAS per the training objectives.

C. The training materials will be made available online as the user's manual to supplement Nevada's policies and procedures.

D. The Implementation Contractor must update all training materials to reflect any system functionality changes and obtain Program's approval prior to deploying the system changes. Training materials must be maintained through completion of the warranty period.

4.31.2.3 Training Manual

A. The Implementation Contractor will develop the training manual for use by training staff in the delivery of training to system users. The Implementation Contractor will make a trainers' version and a students' version of the training manual.

B. The implementation training deliverables will document the satisfactory completion of the training plan tasks prior to the implementation.

C. The Implementation Contractor must update the training manual to reflect any system functionality changes and obtain Program's approval prior to deploying the system changes. The training manual must be maintained through completion of the warranty period.

4.31.2.4 Conduct Training

A. The Implementation Contractor is responsible for conducting training. There are several types of training as described below:

B. Customer Service Support Staff Training

The Implementation Contractor's training staff will need to deliver training to the Programs 20 customer service support staff.

C. Technical Support Staff Training

The Implementation Contractor's training staff will need to deliver training to the Programs 30 technical support staff.

D. Trainer Training

The Implementation Contractor's training staff will need to deliver train-the-trainer training for up to 20 training staff.

E. User Training

The Implementation Contractor's training staff will need to deliver training to the approximately 1,000 Program staff that will be using the system for their day-to-day operations.

4.31.2.5 Web-Based Training Center

The Implementation Contractor will establish a web-based application for computer based training for users.

4.31.2.6 System Training Reports

The Implementation Contractor will prepare a report that documents the satisfactory completion of the training plan tasks for each regional rollout.

Overall Activities

Our team takes ownership and responsibility for training users and technical staff in each functional aspect of the new NCSEAS. We collaborate with DWSS who owns responsibility to support the training program in specific areas, e.g., organizing staff members to attend training, aligning schedules and making staff available to support training efforts as needed. DWSS must also provide classroom-training facilities and material printing, as required. In addition, our team coordinates with Nevada's Web-based Training Center for the delivery of NCSEAS Web-Based Training (WBT) modules. The Center provides easy access to the WBTs for DWSS employees and local Child Support Enforcement Program Offices.

The training strategy sets the overall direction for training and includes training goals, expectations, methods, and schedules. The following figure provides an overview of how the training strategy cascades throughout the training activities.

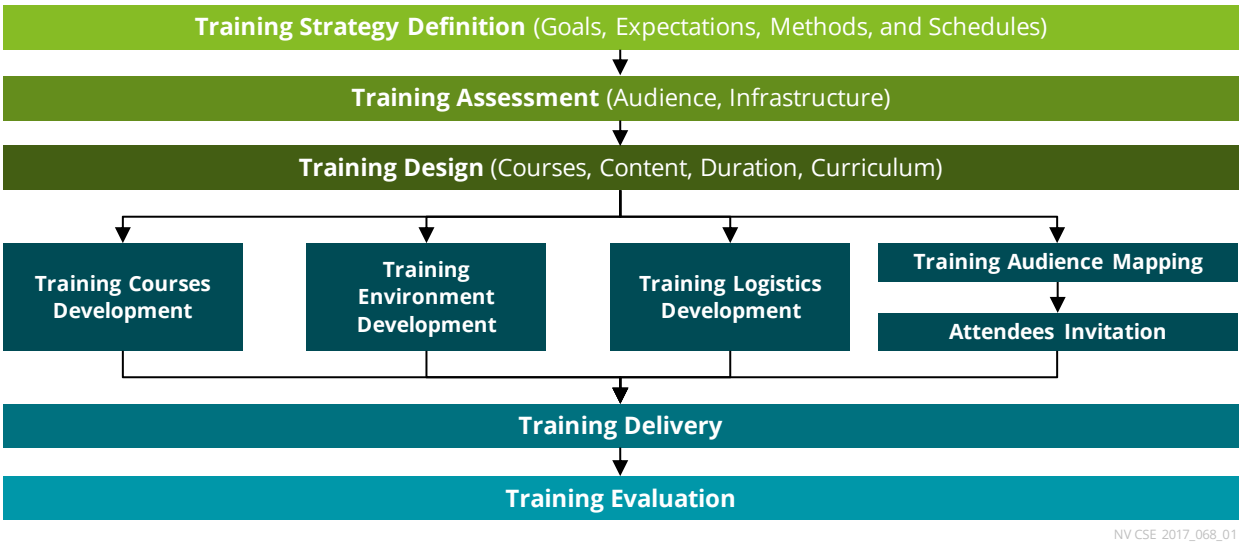


Figure 4-45. Training Strategy and Training Activities

We conduct training planning sessions to develop the training plan and programs, designed to align with the NCSEAS project lifecycle.

Please reference Section VI: 4.20 Training Management Plan for how the training activities map to the overall project timeline.

The following table shows the anticipated training components and corresponding audiences. In order to train the different State and County program and technical staff, we segment the user groups by role and function, and focus on key learning objectives to meet the needs of each user group. This includes 20 Customer Service Support Staff, 30 Technical Support Staff, and 20 Training Staff.

Function/Component	*Projected Audiences*	*Estimated Duration*
Intake	***Staff who initiate cases, set up cases in the system, etc.***	***6-8 hours***
Locate	***Locate Specialists, others with locate responsibility***	***3-4 hours***
Establishment	***Staff responsible for paternity and order establishment***	***6-8 hours***
Enforcement	***Staff responsible for taking enforcement action on cases with established orders***	***6-8 hours***
Financials	***Staff responsible for financial case processing***	***3-4 hours for non-specialists*** ***10-12 hours for specialists***
Reporting	***Staff responsible reporting and compliance***	***3-4 hours***
Other/Central Functions	***Staff in Customer Service and Technical support roles***	***3-4 hours***

Table 4-38. Proposed Training Components for the NCSEAS Project. Courses and topics are confirmed after training analysis and design activities are completed.

Please reference Section VI: 4.20 Training Management Plan for a more detailed description of the user groups and the proposed breakdown of training modules and subjects.

Our Training Responsibilities

***Training Management Plan* - The NCSEAS User Training Management Plan provides a roadmap for the development and execution of the NCSEAS training program. This plan organizes training activities according to the phases defined in the ADDIE instructional design model and Deloitte's Playbook for the NCSEAS Project. Please reference Section VI: 4.20 Training Management Plan for a more detailed description of our approach to the Training Management Plan.**

Figure 4-46. Training Plan Overview. The Training Plan provides a roadmap for the NCSEAS Training Program.

***Web-Based Training Development Plan*. The NCSEAS Web-based training development plan addresses the requirement for the development of a Web-Based Training component to augment classroom-training sessions. Please reference Section VI: 4.21 Web-Based Training Development Plan for additional information.**

***Functional Training Materials Deliverables*. Training materials are created in such a manner that they can be updated and refreshed with current information to reflect changes to the NCSEAS functional solution that may occur over time. These training materials may include instructor manual, student manual, quick reference guide, Web-based training content, and online help.**

***Technical Training Materials*. Technical training materials are developed to support learners with variable levels of skills, baseline knowledge, and learning styles. Materials are developed to support high-level end user adoption and not simply baseline learning. The materials focus on the technical aspects of the NCSEAS solution and specifically the skills necessary to operate, maintain and support the solution. Technical training in this context does not include product-specific training for COTS (Commercial Off-the-Shelf) software. DWSS technical staff are assumed to be knowledgeable of the underlying software products upon which the NCSEAS solution is based.**

***Trainee Testing and Evaluative Processes*. Trainee testing is conducted using the Kirkpatrick (Levels 1-2) Evaluation Scale to measure end-user adoption.**

Training Materials

Our training development phase includes a review and approval cycle where select DWSS staff have the opportunity to assess and approve training materials. Development also includes establishing a NCSEAS training environment, setting up the training database, developing training scenarios, and creating the tools for evaluating whether staff has effectively absorbed the functionality and operation of the NCSEAS per the training objectives.

As new system updates are tested and releases scheduled, our team will work with the State to refresh training materials at agreed upon intervals and obtain approval of these materials to reflect the new system changes through the warranty period.

Training Manuals and User Acceptance Tester Materials

Our team develops the Trainer, Student and User Acceptance Tester Training Manuals. The Trainer Manual is used by Trainers to deliver classroom and on-site training sessions. The manual provides additional information needed to master the training curriculum and successfully deliver the course content. We develop one Trainer Manual for each of the seven instructor-led training courses. The Student Manual is a tool for the students to use in a classroom or on-site training session. The manual is designed using current-state instructional design principles and is clearly organized into modules (chapters), lessons, and classroom exercises. We develop one Student Manual for each of the seven instructor-led training courses.

User Acceptance Tester materials are designed and developed to provide instruction to testers in how to conduct and report on testing. Testers will attend classroom-based training in either Las Vegas or Carson City, NV where they use these customized materials.

Conduct Training

We leverage the training content created during the development phase to provide DWSS staff with an engaging, blended, and interactive training experience. The focus during delivery is "tell me, show me, test me" to accommodate different learning styles. This approach during training takes the learner from hearing knowledge content (for auditory learners) to seeing learning content (for visual learners) to practicing new skills (for kinesthetic and tactile learners). Training commences with a pilot session followed by a three-region rollout over the course of six months. Based on our experience we have seen that the effectiveness of training is dependent on the optimal number of students in a classroom. Hence we propose that no more than 20 students will be in one classroom training session.

Web-Based Training Center

We agree to work with and collaborate with Nevada's Web-Based Training Center to design, prepare and deliver web-based training in the most effective manner. Please reference Section VI: 4.21 Web-Based Training Development Plan for additional information.

System Training Reports

Our team compiles system training reports for each regional rollout so that the training materials and delivery methods can be modified and refined, if necessary, before the next training sessions begin. Training reports are used to confirm that the planned training sessions were held as scheduled, training covered the planned subject areas required, and that a concerted effort was made to include personnel from each of the DWSS user groups requiring training.

User Acceptance Tester Training

Instructors are specifically trained to facilitate training for User Acceptance Testers. The training is provided in a classroom- based group setting for members of the acceptance test

team. Two (2) sessions are held, one in Las Vegas and one in Carson City. Materials specific to User Acceptance Testing are provided.

4.31.3 Deliverables

4.31 TRAINING

4.31.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.31.3.1	Training Management and Development	4.31.2.1	10
4.31.3.2	Training Materials	4.31.2.2	10
4.31.3.3	Training Manual	4.31.2.3	10
4.31.3.4	Conduct Training	4.31.2.4	10
4.31.3.4	Web-Based Training Center	4.31.2.5	10
4.31.3.5	System Training Reports	4.31.2.6	10

Deliverables	***Description***	***Confirmation of review time***
Training Management and Development		***10 days***
Training Materials	***Our team provides materials that can delivered in various environments. Appropriate training materials for each functional area of the system are prepared and finalized at the end of user acceptance testing.*** ***Our team leverages existing technical and procedural manuals and applicable content from the CA CSE system to develop training materials. Materials are made available online to complement existing policies and procedures.***	***10 days***
Training Manual	***Our team creates appropriate training manuals for use by trainers and students for each training course. Trainer manual includes: course outlines, trainer classroom materials, training packets, presentations, and other related documentation. Student manual includes: training materials, classroom exercises, glossary, and student evaluation forms as appropriate.***	***10 days***

Training material	***Quantity***	***Notes***
WBTs	***7***	***One course per functional area***
ILTs	***7***	***One course per functional area***
Trainer Manual	***7***	***One per ILT course; estimate one per functional area***
Student Manual	***7***	***One per ILT course; estimate one per functional area***
QRGs	***2 per ILT course***	***14 total; estimate two per functional area***

Deliverables	*Description*	*Confirmation of review time*
Conduct Training	***Training delivery uses a variety of activities including a "Day in the life" approach and hands-on interactive sessions. Delivery is based on adult learning principles. See following table for additional training groups and approximate number of staff members trained (in addition to training 450 end users).***	***10 days***
Web-Based Training Center	***Our team works with and collaborates with Nevada's Web-Based Training Center to design, develop and deliver web-based training in the most effective manner.***	***10 days***
System Training Reports	***Reports track the completion of training activities, attendees, training courses held (including dates and times), overview of training evaluation results, and other appropriate metrics.***	***10 days***

Group	*# to be trained*
Customer Support Staff	*20 users*
Technical Support Staff	*30 users*
Training staff	*20 users*

4.32 System Implementation

4.32.1 Objective

4.32 SYSTEM IMPLEMENTATION

4.32.1 Objective

The objective of this task is for the planning, coordinating and implementing the NCSEAS statewide. This task will prepare the Implementation Contractor, the Program, and its service partners for the implementation of the modernized system.

Our proposed implementation approach uses a single-county pilot followed by a three-phase regional rollout. The benefits of this approach are that it minimizes the impact on business operations and better prepares end users to adopt and fully leverage the new NCSEAS solution. Based on our current experience with the CA CSE system, we can leverage our knowledge of the detailed set of system components and infrastructure dependencies to provide a plan for the successful implementation of NCSEAS in six months.

SECTION HIGHLIGHTS

- ***A robust implementation strategy that meets your requirements and results in successful implementation of NCSEAS statewide in six months***
- ***An on-site support strategy that reduces risk and enables user adoption***
- ***A Deloitte team that cares as much about business operations as the technical solution***

Child support operations require continuity and minimal disruption during system replacement, and we provide DWSS with a carefully planned and executed implementation of NCSEAS. The focus of our approach and our proposed implementation plan is to limit disruption to business operations and support end users in obtaining the necessary knowledge to operate and fully leverage the new system. A graphical representation of our implementation timeline is provided in the following figure.

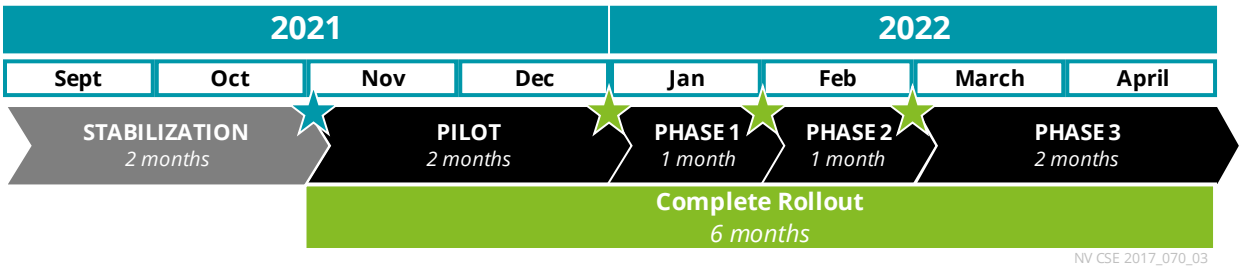


Figure 4-47. Proposed NCSEAS Implementation Approach and Timeline.

We plan, coordinate and implement NCSEAS statewide on behalf of DWSS, and assist in preparing service partners and other stakeholders for implementation. A phased implementation approach is used in coordination with carefully planned activities and key deliverable outputs. A two-month Pilot provides additional time for adjustments so that subsequent statewide rollout Phases are successful. The goal is to provide a fully implemented system on a realistic timeline that ultimately enhances DWSS business operations.

4.32.2 Activities

4.32 SYSTEM IMPLEMENTATION

4.32.2 Activities

4.32.2.1 The Implementation Contractor is responsible for planning, coordinating, and implementing the NCSEAS statewide. The Implementation Contractor will use the following principles in designing its implementation approach:

A. System implementation will be done in a phased approach. Complete rollout of the NCSEAS is expected to take six (6) months. Detailed user testing and pilot programs will be used in order to validate functionality and correct deficiencies.

B. System deficiencies identified in the pilot steps will undergo an assessment and decision making process by the Program and will be corrected as required.

C. The Implementation Contractor will first pilot the system in a larger office with a larger caseload and then complete the implementation via three regional phased deployments.

D. Each implementation phase will address user training, data conversion, and other site readiness issues. As each site is implemented, specific issues relevant to moving from the current NOMADS to the NCSEAS will be addressed.

4.32.2.2 The Implementation Contractor must provide system support, help desk support, system maintenance, and corrective actions during the implementation and for the duration of the contract in accordance with established service level agreements. At the conclusion of the implementation and again at the end of the contract, the Implementation Contractor must certify that the system is fully implemented and operational. Concurrently, the Implementation Contractor must provide a transfer of knowledge to the State, enabling the State to effectively operate and maintain the system.

4.32.2.3 The help desk must provide support from 8:00 a.m. to 5:00 p.m. (Pacific Time (PT)) Monday through Friday on State business days. In addition, the help desk must be available on an on-call basis 24 hours per day in order to support State technical and operational needs.

4.32.2.4 Implementation and Initialization Plan and Report

A. The implementation and initialization plan will identify all the sequenced tasks necessary for initializing the new application and assign responsibilities for each task.

B. The plan will establish an implementation coordination team to coordinate and review the implementation preparations. The plan will establish the criteria for system implementation readiness.

C. The Implementation and Initialization report will detail the tasks accomplished in preparation for implementation and document the system's state of readiness. Program's acceptance of this deliverable is necessary for implementation efforts to proceed.

4.32.2.5 Implementation Rollout Reports

A. The Implementation Contractor will provide reports documenting the satisfactory implementation of the NCSEAS in the pilot site and for each of the regional rollout groups.

B. The Implementation Contractor will submit the reports at the conclusion of each rollout and will include lessons learned for the next rollout.

C. The report will document significant events and data related to the rollout of the NCSEAS to the pilot sites and the regional groups.

4.32.2.6 Fully Implemented System

At the end of this activity, the Program will have a fully implemented, functional and operational system.

Implementation Approach

As represented in the previous section, our team conducts a phased implementation approach through which the system is rolled out over a period of six (6) months. As a first step we begin with system stabilization, focusing on testing and improving the solution quality by identifying, triaging and resolving any critical system defects/bugs. The stabilization phase will be for two months and will occur before the six (6) month system rollout. Once stabilization has been completed and the system has met the defined quality and performance levels, it will be ready for full production deployment. The six (6) month rollout begins with the NCSEAS solution being implemented in a pilot county for two months. The pilot implementation should be targeted at a large office – for example, Clark County – with a larger caseload that confirms the complete set of NCSEAS functionality is working as expected and each component of the solution can be exercised in normal business operations. We then implement the remaining counties in three regional phased deployments. A phased implementation approach minimizes risk and disruption to business operations. We work with you on the implementation approach to determine both the counties that fit into each region and the interim business processes that have to be adopted during the phased rollout period. For example, there will be a need to combine reports during the rollout period manually such as the Federal performance report since both systems will be producing the reports and they have to be combined for distribution.

In the months ahead of pilot, we create and execute project and site readiness activities to confirm readiness for go-live. We employ our Pilot Selection Tool and Statewide Rollout methodology, providing a more objective and data-driven approach to selecting the right pilot office and regional rollout structure. Prior to pilot we also establish a command center that runs for up to four weeks and that consists of members from DWSS, QA, PMO vendor and Deloitte. This approach helps expedite the incident resolution process during the first few weeks of pilot. Our team invests heavily during the first month of pilot to enable a more successful second month and beyond.

An overview of the implementation activities and approach is provided in the following graphic. Additional details about these activities and the approach is further elaborated in the sections that follow.

Implementation activities and approach

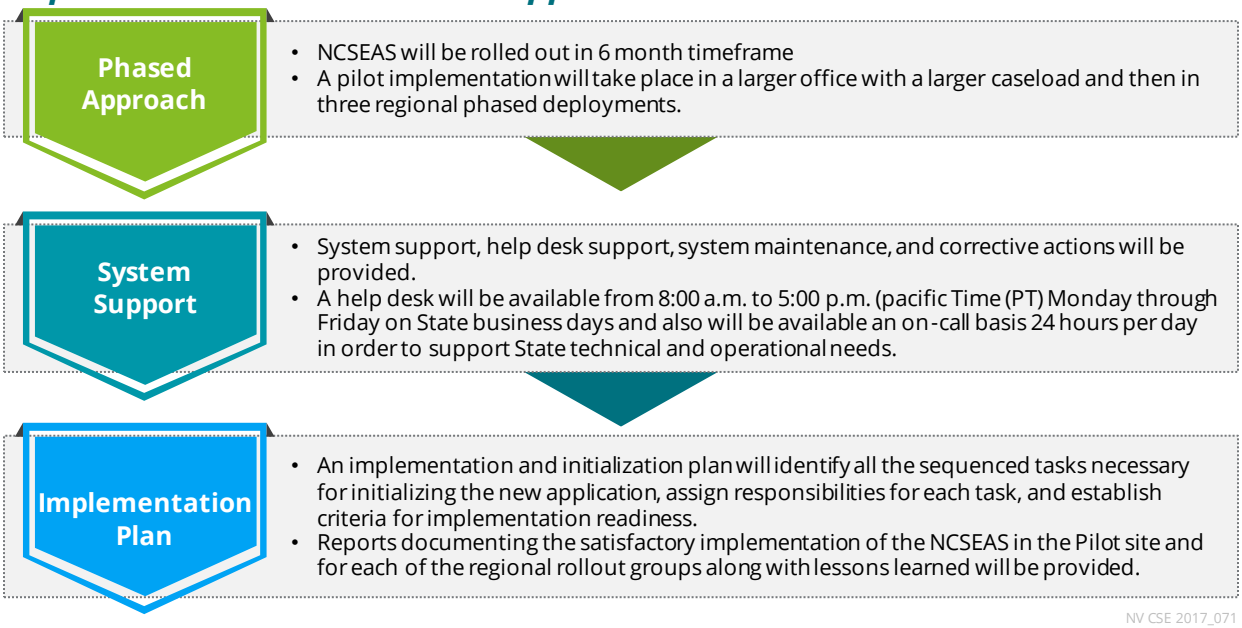


Figure 4-48. Overview of NCSEAS implementation activities

Supporting NCSEAS

We know firsthand that implementing a new system requires significant support and organizational change management. During implementation, we provide system support, help desk support for the application (i.e. Level 2), system maintenance, and corrective actions. We also provide three weeks of on-site support in each of the regional offices – Las Vegas, Carson City and Reno – in conjunction with DWSS. On-site support provides direct feedback to those office end users during this key implementation period. At the conclusion of the rollout period, our team confirms that the system is fully implemented and operational. Providing this on-site support reduces the risk of the implementation and provides DWSS stakeholders with the guidance and resources that they need to navigate the introduction of the new NCSEAS.

Help Desk Availability

In accordance with the expectations put forward by DWSS, we will leverage the existing help desk process during the implementation period. It is available during DWSS business hours (Monday through Friday, 8 AM to 5 PM PST, on State business days). Additionally, our team provides on-call support 24 hours a day in order to support State technical and operational needs. The existing DWSS help desk provides Level 1 help desk services for CSEAS users, uses the in-place HEAT software, and attempts to resolve minor issues or questions. Issues are escalated to our Level 2 support team for further action if they are not resolvable by the Level 1 help desk.

Implementation and Initialization Plan and Report

Our strategy for the Implementation and Initialization Plan (IIP) is to create a roadmap for an effective and well-planned NCSEAS implementation period. The deliverable is created based on collaboration with DWSS, your decisions and the outcomes of various planning sessions, particularly of the implementation coordination team.

The IIP provides the guide for the implementation for the pilot and each rollout phase, identifying the sequence of events and internal and external dependencies for successful implementation. The IIP maintains a consistent, multi-step implementation process, and coordinates the required end user training that occurs in conjunction with the rollout. In support of each rollout, our training team completes a distinct group of just-in-time training activities before the system is implemented for those corresponding users. Our team reviews the deliverables of IIP phase with DWSS and the approved deliverables are maintained for the duration of the project.

Every phase of the project is vital to the overall success of NCSEAS; however, the implementation period is the point at which the larger population of business users first experience the new system. Carefully planning for this event can be the most important determinant of the system's perceived success or failure. Within the IIP we provide the overall deployment activities, task descriptions and deliverables of our EVD methodology. Our strategy for addressing implementation activities and related deliverables is summarized in the following figure.

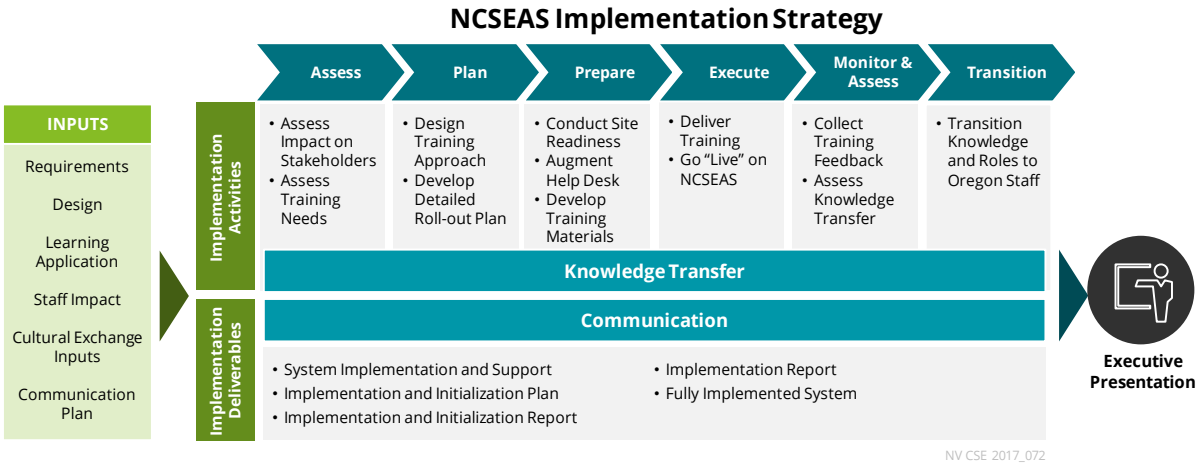


Figure 4-49. NCSEAS Implementation Strategy.

Our strategy for the Implementation and Initialization Report is to build upon on our implementation planning to report the completion of key implementation preparation activities, rollout readiness, and provide key status information in preparation for the rollout. This status information includes key data conversion statistics corresponding to the rollout phase, e.g., the number of cases converted, as well as performance summary and training completion. The key statistics are defined in conjunction with the DWSS stakeholders through the Implementation Coordination team to report on the completion of key rollout steps. The Implementation and Initialization Plan and Report represents the final deliverable prior to DWSS approval to proceed with the implementation.

The deliverable includes key checklists and the minutes of key decision-making sessions, including the final readiness checkpoint and the "go/no go" decisions made prior to Pilot and each subsequent statewide rollout Phase. Our goal is to provide a complete account of implementation preparation activities, rollout activities, and documentation of the key decisions based on inputs from DWSS and other vendors. The format and content of the

deliverable is finalized as part of implementation planning sessions with input from DWSS, the PMO vendor, and other designated DWSS stakeholders. The deliverable is constructed to be consistent with implementation planning such that it includes completed readiness checklists and the final detailed steps involved in the rollout.

Implementation Rollout Report

The Implementation Rollout Report documents the successful completion of the rollout phase as planned in the IIP, including both system and operational-focused activities. The deployment steps outlined in the IIP documents the key outcomes of major implementation processes and provides the basis for the status updates provided in the Implementation Rollout Report. The Implementation Rollout Report includes the following components:

- ***The final detailed technical steps utilized in the rollout as documented in the Implementation and Initialization Plan and Report deliverable, e.g., conversion processes***
- ***The milestones and major meetings associated with the rollout, e.g., successful completion of staff training, including the date and outcomes of significant meetings related to implementation of the rollout phase***
- ***The completed readiness checklist as outlined in the readiness assessment and Implementation and Initialization Plan and Report deliverables, as well as minutes from the final readiness checkpoint***
- ***Key data from the rollout, including statistics, applicable system logs, system validation information, and "go/no go" meeting minutes***
- ***Lessons learned from each roll out phase***

A sample table of contents for the Implementation and Initialization Plan and Report deliverable and subsequent Implementation Rollout Reports is provided in the following figure.

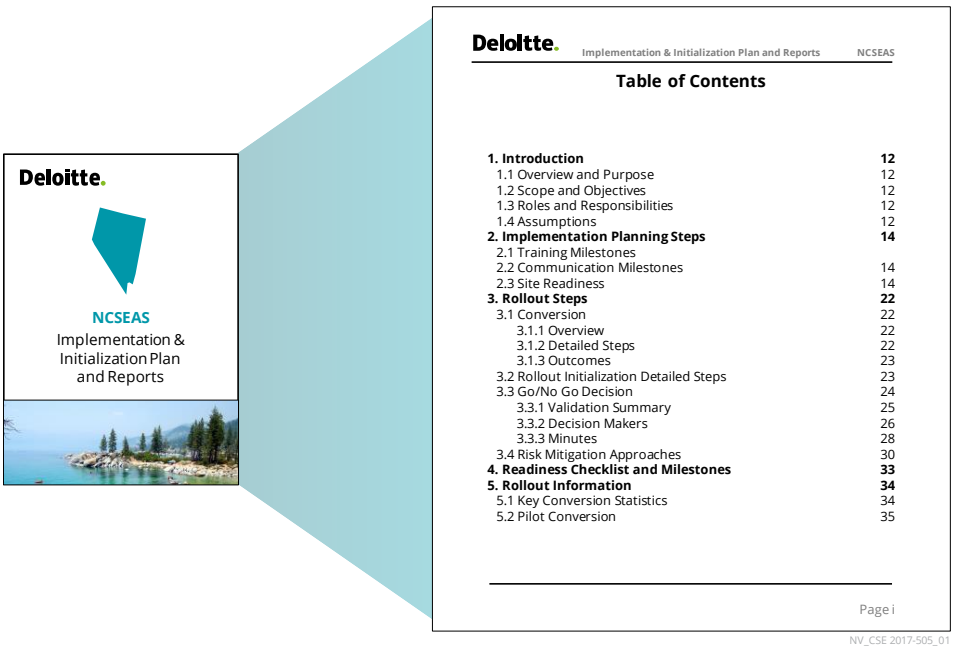


Figure 4-50. Implementation and Initialization Report Sample TOC.

Implemented, Functional and Operational Statewide System

At the completion of system implementation, our team provides a fully implemented, functional and operational NCSEAS system providing full business operations statewide. The end goal is to provide an implemented system that meets the expectations and needs of the NCSEAS project leadership and end users statewide.

We deliver training and support users as they Go-Live on NCSEAS. During this phase we also provide communications support and three weeks of on-site field support within each of the three regional offices. We understand that each rollout can be different and may require a higher number of individuals to be trained within a relatively short time frame. We plan to accomplish this by offering modularized, concurrent courses on a regional basis to offer attendees maximum flexibility in attending courses that fit in with their work schedule, minimizing the disruption to customer service. Key activities during the Implementation phase which are included in the IIP include:

- ***Maintenance of a Run Book of production activities***
- ***Site support for each office in the implementation phase***
- ***Reporting on daily calls to the Help Desk, emails to the implementation Inbox and "War room" activities***
- ***Webinar updates***
- ***Monitoring and reporting on system performance***
- ***Deployment and data conversion monitoring and reporting***

4.32.3 Deliverables

4.32 SYSTEM IMPLEMENTATION

4.32.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.32.3.1	System Implementation and Support	4.32.2.1 4.32.2.2 4.32.2.3	10
4.32.3.2	Implementation and Initialization Plan and Report	4.32.2.4	10
4.32.3.3	Implementation Rollout Reports	4.32.2.5	10
4.32.3.4	Fully Implemented, Functional and Operational Statewide System	4.32.2.6	45

Deliverables	*Confirmation of review time*
System Implementation and Support	***10 days***
Implementation and Initialization Plan and Report	***10 days***
Implementation Rollout Reports	***10 days***
Fully Implemented, Functional and Operational Statewide System	***30 days***

4.33 Warranty Period (Initial Maintenance and Operation)

4.33.1 Objective

4.33 WARRANTY PERIOD (INITIAL MAINTENANCE AND OPERATION)

4.33.1 Objective

The objective of this task is for the initial maintenance and operation of the system, which begins after successful completion and Program's acceptance of the system.

After devoting the time and effort to implement NCSEAS, DWSS will want support to confirm and enable the new system to be fully operational. With several decades of experience in maintenance and operations, we bring a thorough and refined approach focused on operational stability, continuous enhancement, and mutual understanding. Our staff, which represents one of the deepest talent pools in the industry, works with DWSS to make sure NCSEAS meets or exceeds its objectives for years to come.

- ***Numerous successful maintenance and operation projects in child support, including the CA CSE solution as well as Pennsylvania and Florida***
- ***Experience from hundreds of additional public sector maintenance and operations projects***
- ***An efficient warranty support approach that includes the requested activities and deliverables***

We use a well-defined post production support plan to define the processes and assign the right mix of people for production support. This enables a smooth and well planned transition to the post-implementation phase following successful NCSEAS implementation and acceptance of the system. Our post implementation support services include corrective warranty/maintenance services, preventative maintenance, application support, and knowledge transfer and transition to DWSS staff.

Our post-implementation support approach utilizes elements of our EVD methodology, which includes continuous improvement strategies and provides support for complex operating models such as NCSEAS. EVD also incorporates the core principles of Software Engineering Institute's (SEI) CMMI, Information Technology Information Library (ITIL) and Project Management Body of Knowledge (PMBOK) to support the activities that are required during the maintenance and operations period.

4.33.2 Activities

4.33 WARRANTY PERIOD (INITIAL MAINTENANCE AND OPERATION)

4.33.2 Activities

4.33.2.1 Initial Maintenance and Operation of the System

The Implementation Contractor is responsible for the initial maintenance and operation of the system. This includes fixing all bugs/defects, communicating solutions to end users, and maintaining and updating training materials.

4.33.2.2 Periodic Help Desk Reports

Periodic help desk reports will indicate the status of help desk requests from the previous month and plan the work for the upcoming month. The reports will identify the tasks, Implementation Contractor staff assignments, and schedule of work for the upcoming month. The reports will also describe the status of the work underway and document the tasks completed in the prior month.

4.33.2.3 Periodic Warranty Support Reports

Periodic warranty support reports will provide for regular status reports of warranty defects and remediation plans and corrections.

4.33.2.4 Periodic Operations Reports

Periodic operations reports will report the status of operational activities during the previous month and plan the maintenance and operation work for the upcoming month. The reports will identify the tasks, staff assignments, and schedule of work for the upcoming month; describe the status of the work underway; and document the tasks completed in the prior month. The reports will identify any unusual circumstances that the Implementation Contractor had to deal with during system operations.

4.33.2.5 Maintenance Transition Report

This deliverable will document the satisfactory completion of the transition of maintenance to the Program's maintenance team. The Implementation Contractor will highlight in the report maintenance issues and any special circumstances its staff encountered and resolved.

4.33.2.6 Warranty Completion Report

The warranty completion report will document the satisfactory completion of all software warranty tasks.

Initial Maintenance and Operation of the System

The post-implementation warranty support processes are part of our broader EVD methodology and have been specifically tailored to meet the requirements of the NCSEAS project. This tailoring enables the smooth transition of the project from system development and implementation to ongoing maintenance and operation support, and maintains consistency in core project activities so that staff are not required to re-learn new processes once the initial maintenance and operation of the system commences.

As part of the initial maintenance and operation of the new system, our team: 1) fixes defects, 2) communicates solutions with end users, and 3) maintains and updates training materials. The process of identifying defects, promptly resolving them, and effectively communicating with DWSS with the end user confirms that the warranty period progresses in an efficient and smooth manner.

We provide DWSS with a single point of contact for post-implementation and warranty support services, collaborate with you to mitigate issues and risks, and give you the confidence that the needs of the NCSEAS users and the recipients of DWSS services continue to be met throughout this period.

Figure 4-51. Processes included during maintenance and operation of the system.

Upon completion of the phased rollout of the NCSEAS system, Deloitte will submit the 4.32.3.4 - Fully Implemented, Functional and Operational Statewide System deliverable ("Fully Implemented System Deliverable"). For a period of forty five (45) days following the submission of the Fully Implemented System deliverable ("System Implementation Review Period"), Deloitte Consulting will fix the Level 1 – Blocker / Show Stopper defects that are defined as material errors in essential functions of NCSEAS for which no work around exists ("Level 1 Defects"). DWSS shall approve the Fully Implemented System deliverable when the Level 1 defects identified by DWSS during the System Implementation Review Period have been fixed. For a period of two (2) years following the approval of the Fully Implemented System Deliverable (the "Maintenance and Warranty Period") Deloitte warrants that NCSEAS configuration and custom application program code shall operate free of any material defects. If, within the Maintenance and Warranty Period, NCSEAS fails to comply with this warranty, Deloitte shall repair any defects as necessary to bring

NCSEAS configuration and custom application program code into compliance with such warranty, provided that for any such failure identified by DWSS, DWSS notifies Deloitte in writing of such failure (using the defect tracking tool) and describes the correct operation, provides Deloitte with reasonably adequate documentation and evidence to reproduce such failure, and, when necessary, demonstrates such failure to Deloitte so that the cause of such failure may be traced and corrected, in each case within the Maintenance and Warranty Period. Deloitte shall make warranty repairs following notification by DWSS, or as otherwise agreed between Deloitte and DWSS. The warranty shall not apply with respect to hardware or software that is supplied by a third party to DWSS. The terms and conditions of the warranty to DWSS with respect to such hardware or software will be provided by the third party vendor of such hardware or software. Deloitte bears no responsibility of any kind for such hardware or software and DWSS shall not look to Deloitte for any warranty for such products.

Our EVD methodology is grounded in proven best practices such as ITIL and iterative development, and offers the flexibility to tailor methods and processes to DWSS' unique business requirements. EVD is a proven framework leveraged in projects across the public sector. EVD defines a Capability Maturity Model Integration (CMMI)-enabled and repeatable operations approach marked by predictability and reduced overall cost and reduced project risk. The methodology helps produce high-quality documentation and integrates with the PMBOK-based project management processes.

DID YOU KNOW?

Since assuming maintenance and operations responsibility for the CA CSE system in 2010, Deloitte utilized the EVD methodology to complete over 80 major enhancements to CA CSE, extending the solution to meet new and emerging California requirements.

In addition to delivering maintenance services, we bring extensive experience in conducting system support activities consistently and continuously. The EVD methodology prescribes best practices, checklists, troubleshooting approaches, and customer engagement frameworks that enable efficient yet effective management of ongoing system support and operations tasks.

Public sector clients routinely rely upon Deloitte to deliver high quality technology applications that meet complex business needs. We are often selected to provide application maintenance and support services to support the continued

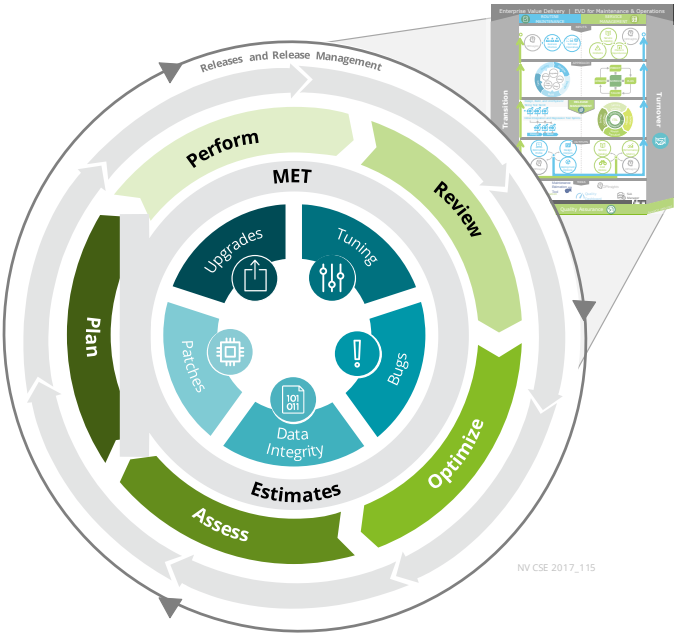


Figure 4-52. Our comprehensive approach to delivering maintenance and operations can leverage artifacts and best practices from EVD

effectiveness of an application and the ongoing ability of an application to perform critical business functions. Decades of experience with successful application maintenance and operations has enabled our team to refine the process of application support and maintenance to a standardized, efficient, and effective framework. The EVD methodology has evolved over time, based on lessons learned through successful operations and maintenance engagements, and is ready to deliver excellence for the NCSEAS solution.

Our approach to Warranty/Maintenance and Operations is enabled by a diverse and tested toolkit—products and processes that work together to enable both Deloitte and DWSS staff to work seamlessly across the tasks that keep the NCSEAS solution available, accurate, and reliable.

Help Desk Support

Providing an effective user support system is integral to the successful adoption of any large-scale automated system. Since our Help Desk support commences with the initial pilot implementation, the help desk is fully staffed and operational by the time the project enters the Post-Implementation Warranty phase. We understand that the Help Desk support must continue through the 24 month warranty period during DWSS business hours (Monday through Friday, 8 AM to 5 PM PST, on State business days) and on-call support 24 hours per day.

Our post-implementation warranty process begins with a call to the help desk reporting an issue or problem. Through the Level 1 Help Desk, provided by the existing DWSS help desk, resources attempt to resolve minor issues or questions reported from NCSEAS users. Those issues that cannot be immediately addressed by the help desk are routed to our Level 2 maintenance support team for further action. For Level 2 Help Desk support, our team addresses break-fix activities, batch resolutions, functional support, resolution of systems performance issues, and other problem tickets. The team performs defect resolution activities while also escalating reported issues that represent NCSEAS modifications to the Change Management process.

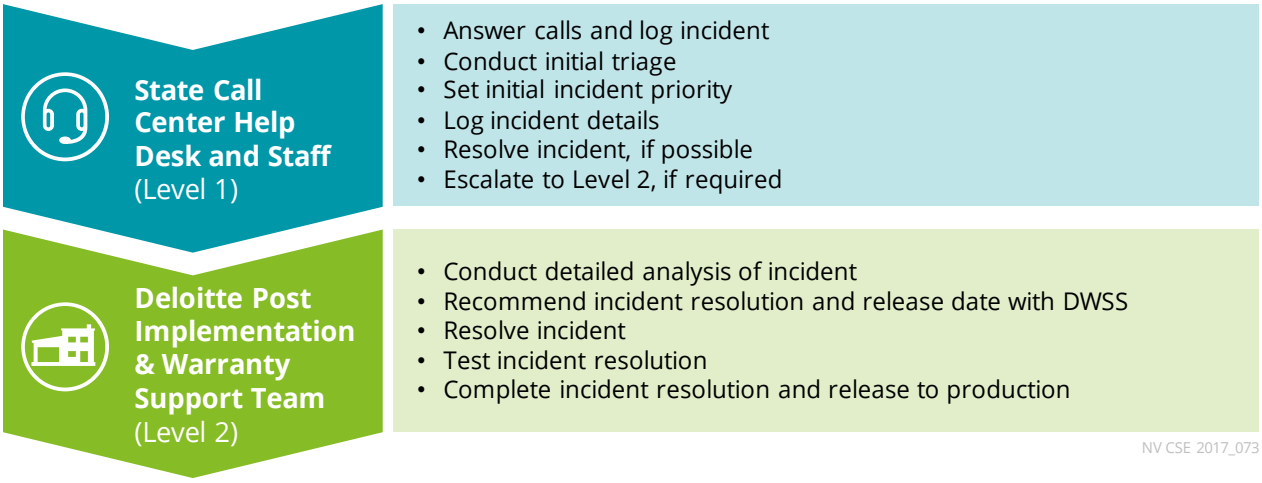


Figure 4-53. Help Desk Incident Resolution Process. The incident resolution process is comprised of 3 levels – the Deloitte team is responsible for tasks at Level 3.

This focused and proven approach benefits DWSS by:

- ***Confirming that end user requests (issues, enhancements, or questions) are managed to completion***
- ***Focusing on end-to-end service management***
- ***Supporting quality initiatives***
- ***Refining through delivery experience***
- ***Facilitating cost-effective service delivery***

Defect Reporting

We structure defect reporting and resolution procedures by documenting the type of defect reported, assessing the impact and severity level, resolving the issue, and finally reporting the resolution. Our Post Implementation and Warranty Support team responds to logged defects based on an assigned Severity level. We work with DWSS to define the incident Severity levels based on the corresponding impact to NCSEAS operation. Each incident is ranked based on criticality and its impact to the users and constituency. Based on that determination, the incident is then assigned a Severity level and its resolution time frame is determined. In the following table, we have proposed Severity levels and definitions – these have been used on other projects of similar size and scope as NCSEAS.

Severity Level	*Description*
Level 1 – Blocker/Show Stopper	***The System or a mission critical component of the System no longer functions. No workarounds are available. Generally requires emergency fix and deployment.*** ***Example:*** • ***Users are unable to log into the system.*** • ***Users can access the system and complete applications and data collection, but eligibility will not run.***
Level 2 - Critical	***A business function or System component does not work as required, crashes, loss of data, severe memory leaks. Workaround are either tedious or require active support from development or operations teams. Fixes are provided with the regular monthly release schedule.*** ***Example:*** • ***User tries to add resource information but system does not save data or page crashes.***
Level 3 - Major	***A business function or System component does not work as required, but a workaround that is acceptable is available. Fixes are provided with the regular monthly release schedule based on team capacity.*** ***Example:*** • ***Guideline calculation successfully runs, but the guideline amount was not as expected. Guideline amount can be corrected by overriding the guideline calculation result as a workaround.***
Level 4 - Normal/ Minor	***Non-critical, but having a negative effect on one or more business functions or System components. Fixes are provided with the regular monthly release schedule based on team capacity.*** ***Example:*** • ***User can enter alphanumeric characters in numeric filed.*** • ***User is not allowed to submit page unless all non- mandatory fields are filled.***

Severity Level	*Description*
Level 5 – Trivial	***Cosmetic and Inconsequential Deficiencies. Fixes are provided with the regular monthly release schedule based on team capacity.*** ***Example:*** • ***There is a misspelling on a label on the screen.***

Table 4-39. Sample Severity Level Descriptions. The table defines proposed incident severity levels with their definitions.

We work with DWSS to finalize the incident Severity/Priority levels with their associated definitions prior to the Post-implementation and Warranty support phase of the project.

Our defect resolution process continually monitors requests, follows through with root-cause analysis, captures information for analysis, and enables continuous process improvement. We achieve this by leveraging an integrated framework that includes continuous improvement and support for NCSEAS system and a staffing model with a judicious mix of implementation and post-implementation support staff. Defect management is focused on restoring service to DWSS through NCSEAS.

Release Management

Release Management is the process for planning and managing the release(s) of a bundled set of application fixes into production. It consists of a framework for managing the technical and non-technical logistics involved in migrating a release through the test environments and into production. Release management is a coordinated, cross-organizational effort that manages the introduction of changes into the production environment, including those affecting applications, infrastructure, operations and facilities. The benefits of release management include improved service quality, reduced operational risk and better attainment of release dates.

The following goals and guiding principles are used as a basis for executing Release Management:

- ***Confirm that fixes are applied to the production environment in a controlled and scheduled manner to minimize the service disruption***
- ***Minimize risk by enabling processes that control the release of configuration items to the production environment***
- ***Confirm issues are identified, tracked and communicated***
- ***Version control is maintained throughout the release process***
- ***Define the scope and schedule of the overall release and identify associated roles and responsibilities***
- ***Define rollback procedures to return to the pre-release environment and prevent a business failure due to unanticipated effects of a new release***
- ***Define contingency plans to identify strategies to mitigate potential risks in the successful rollout of the release***

Deloitte's Approach to Release Management Delivers:				
Predictability	***Efficiency***	***Transparency***	***Quality***	***Cost Savings***

Table 4-40. Benefits of our Release Management approach.

Release management consists of several key processes:

- ***Release Planning. This process begins with identifying defects to be included in a release. Inputs includes help desk tickets and triage outcomes as well as guidance from the DWSS leadership team and Subject Matter Experts (SMEs). Fixes should be prioritized and used as input to a release schedule, taking resource constraints into consideration.***
  - ***Release Definition Document. This is the overall plan for the release. Information captured in this document includes scope, schedule, facilities, training considerations, Help Desk considerations, contingency plans, and rollback scenarios.***
  - ***Release Schedule. This is a document from project management tool that tracks high level tasks for the entire release. It differs from the general Project Plan in that it focuses more on implementation tasks for the release. Note that actual deployment steps are tracked within the Deployment Plan.***
  - ***Deployment Plan. This is a spreadsheet that is used to track specific deployment activities, timeframes, and dependencies. We plan to have once a month maintenance deployments other than emergencies, aligned with DWSS' schedule.***
- ***Release Monitoring and Revision. Throughout the course of the release lifecycle, especially between phases, this process is invoked to track the progress of the release and make necessary adjustments (which may include adding or removing incidents from the release).***
- ***Release Execution. This process executes the deployment of the system updates to the production environment.***
- ***Release Closure. This process summarizes and formally closes the release. It also involves communicating with the end users what took place and providing the end-user an opportunity to provide feedback if they are seeing any issues as a result of the release.***

For additional details on Release Management, please refer to Section VI: 4.17 Release Management Plan.

DID YOU KNOW?

Deloitte has performed Maintenance and Operations on the following large-scale, CSE systems:

- ***California CSE***
- ***Pennsylvania PACSES***
- ***Florida CAMS***
- ***Indiana ISETS***

Infrastructure Changes

Infrastructure changes during the post implementation warranty period are performed by DWSS. Collaboration between our support resources and EITS for awareness and scheduling of infrastructure changes is a key component of managing system changes. Our

support team tracks infrastructure changes and performs necessary planning and application testing to accommodate changes and minimize business disruptions.

Periodic Help Desk Reports

Periodic Help Desk Reports are provided on a monthly basis at the beginning of the month in order to keep DWSS stakeholders informed regarding the status of help desk requests from the previous month. This summarizes tasks completed during the prior month, establishes the plan for work for the upcoming month, identifies tasks, staff assignments, schedule of work for the upcoming month, and the status of the work underway. Throughout the warranty period, it continues to be important to keep project leadership and end users informed as issues are reported and resolved. Our team works with DWSS to verify that the report meets NCSEAS project leadership expectations.

Periodic Warranty Support Reports

Our team produces Periodic Warranty Support Reports on a monthly basis at the beginning of the month to provide regular status updates throughout the warranty period. This includes providing information on identified and resolved warranty defects. We also detail in this report remediation plans and corrections that are provided for resolving issues. Our team works with DWSS to verify that the report meets NCSEAS project leadership expectations.

Periodic Operations Reports

Periodic operations reports provide on a monthly basis the status of operational activities during the previous month and plan the maintenance and operation work for the upcoming month. The reports identify the tasks, staff assignments, and schedule of work for the upcoming month; describe the status of the work underway; and document the tasks completed in the prior month. The report would also identify any unusual circumstances that may have occurred during system operations, such as an unexpected system outage. Providing Periodic Operations Reports is helpful in providing a snapshot of system operations. Our team works with DWSS to verify that the report meets NCSEAS project leadership expectations.

Maintenance Transition Report

Throughout the post implementation warranty and maintenance support period our team transitions maintenance of NCSEAS to the DWSS maintenance team. As a part of this transition, we provide a Maintenance Transition Report which highlights maintenance issues and any special circumstances that our team encountered and resolved during the period. This document serves as a resource for the DWSS team and verifies that maintenance issues operational processes are adequately documented. Please reference Section VI: 4.35 Transition Maintenance and Operation of the System to the State for more information about our proposed transition approach.

Warranty Completion Report

The warranty completion report documents the satisfactory completion of the warranty period and is provided at the conclusion of the project. This report is effective in maintaining open communication with the NCSEAS project leadership and the end users and confirms that our warranty activities have been satisfactorily completed. Additionally it provides a comprehensive review of the warranty period and a summary of the tasks that

were completed. Our team works with DWSS to verify that the report meets NCSEAS project leadership expectations.

4.33.3 Deliverables

4.33 WARRANTY PERIOD (INITIAL MAINTENANCE AND OPERATION)

4.33.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.33.3.1	Initial Maintenance and System Operation	4.33.2.1	5
4.33.3.2	Periodic Help Desk Reports	4.33.2.2	5
4.33.3.3	Periodic Warranty Support Reports	4.33.2.3	5
4.33.3.4	Periodic Operations Reports	4.33.2.4	5
4.33.3.5	Maintenance Transition Report	4.33.2.5	5
4.33.3.6	Warranty Completion Report	4.33.2.6	5

Deliverables	*Confirmation of review time*
Initial Maintenance and System Operation	***5 days***
Periodic Help Desk Reports	***5 days***
Periodic Warranty Support Reports	***5 days***
Periodic Operations Reports	***5 days***
Maintenance Transition Report	***5 days***
Warranty Completion Report	***5 days***

4.34 System Certification

4.34.1 Objective

4.34 SYSTEM CERTIFICATION

4.34.1 Objective

Federal certification deliverables establish key components and milestones for the federal review and certification of the system's functionality.

We bring comprehensive knowledge of the federal expectations along with extensive experience in child support system certification including our most recent certification of Florida's Case Management System (CAMS). In addition to Florida, we have experience in achieving federal child support system certification across a number of states. Members of our team are nationally recognized as experts in the federal certification process and have held roles in a number of successful federal certification activities. This includes Margot Bean, who has over 30 years of child support experience and previously served as the Commissioner of the Federal Office of Child Support Enforcement (OCSE) in the

Administration for Children and Families, and is a specialist in the certification of child support automated systems.

There are a number of key elements to a successful certification including:

- ***Comprehensive knowledge of the federal certification requirements***
- ***Development and practice of the presentation team from DWSS who leads the presentation to OCSE***
- ***Having representation from each office involved with the Federal Certification preparations for OCSE field office visits***

We are as committed to making NCSEAS a federally-certified system. As part of the certification process, our team provides deliverables that serve to establish key components and milestones for the federal review and certification of the NCSEAS solution.

SECTION HIGHLIGHTS

- ***An experienced and skilled leadership team who understands the process of federal system certification.***
- ***Extensive experience in system certification, including the recent certification of Florida CAMS.***
- ***Our proposed project manager, Kent Wheeler, was the project manager for the Florida CAMS project who led the successful certification of that system.***

4.34.2 Activities

4.34 SYSTEM CERTIFICATION

4.34.2 Activities

4.34.2.1 The Implementation Contractor must support the federal system certification review, through successful certification, with the establishment of a certification environment for demonstration of the systems functionality and with the design, implementation, and installation of all software corrections as needed to bring the system into compliance with federal certification standards.

4.34.2.2 The Implementation Contractor must assure the implementation of child support distribution logic to conform to the requirements of the Federal Certification Distribution Test Deck. A special test environment must be established for the federal certification distribution testing process. This environment must provide for automated test scripting for regular regression testing repetition of the test deck conditions.

4.34.2.3 The Implementation Contractor must document the conformance of the NCSEAS with the requirements in the Federal Certification Guide by preparing responses and documentation for each requirement.

4.34.2.4 The Implementation Contractor must support the federal system certification review with the establishment of a certification environment for demonstration of the system's functionality, with the preparation of demonstration case data, demonstration of system functionality, and with software corrections as needed to bring the system into compliance with federal certification standards and certification review findings.

4.34.2.5 The Implementation Contractor must assure that the NCSEAS delivered is in conformance with federal requirements as may be applicable at the time of certification and is responsible for the design, coding, and implementation of any system modifications required by the federal government to attain such certification. Implementation Contractor's system certification support responsibilities include:

A. Provide federal certification compliance demonstration deliverable;

B. Provide federal certification compliance corrections deliverable;

C. Provide PRWORA distribution test deck documentation deliverable;

D. Provide federal certification compliance narrative documentation deliverable; and

E. Devise, program, document, train, test, and implement any required systems modifications required to correct deficiencies cited in the federal certification process that otherwise prevent full federal certification.

4.34.2.6 Federal Certification Compliance Narrative

The federal certification guide narrative will address each certification requirement, identify the system component or components that implement the requirement, describe how the implementation is accomplished, and present screens and reports to support the description. The narrative will address the PRWORA auxiliary questions, the Family Support Act of 1988, and the Deficit Reduction Act of 2005, and all other federal certification requirements.

4.34.2.7 PRWORA Test Documentation

The federal test deck documentation will provide test results to verify the system's compliance with the federal distribution test decks expected results. The staff testing the NCSEAS will incorporate test deck conditions into the regression testing software so that the federal Office of Child Support Enforcement (OCSE) can verify the system complies with the test deck's distribution requirements.

4.34.2.8 Federal Certification Compliance Demonstration

The federal certification compliance demonstration will prepare an environment with test cases to demonstrate successful implementation of each of the federal certification requirements.

4.34.2.9 Federal Certification Compliance

The federal OCSE certification of the system will be the final verification of the system's functionality. The Implementation Contractor warranty will provide for correcting any functional deficiency and for adding any post-implementation enhancements to the NCSEAS, as cited by OCSE in the certification review of the system.

Federal System Certification Review Process

In order to achieve a system that is in compliance with Federal certification standards, we follow a structured process which includes distinct phases. The certification process begins with a planning phase and continues until NCSEAS is certified by the Federal Office of Child Support Enforcement (OCSE) as meeting Federal requirements:

- ***Phase I. During this phase we begin the execution of our strategy for achieving certification. In our experience, most State staff have never been through a certification process and may not fully understand what needs to occur to achieve Federal certification. Our certification-experienced staff conduct "brown bag" knowledge sharing sessions with DWSS staff as needed to discuss what the certification process entails, how the deliverables fit into the certification process, and which federal publications we use to track that NCSEAS satisfies (if not exceeds) the federal certification requirements.***
- ***Phase II. As the functional and technical requirements for NCSEAS are defined, we work on the certification documentation as we begin the requirements fit gap phase. During these requirements fit gap sessions, we map the certification requirements found in the Federal Certification Guide to the NCSEAS system requirements to verify that we explicitly address the certification requirements. We also start developing the description of how NCSEAS meets each of the certification requirements as the requirements are refined during these sessions.***
- ***Phase III. During the final phase we complete the financial test deck and provide the final documentation in the Federal Certification Compliance Narrative deliverable. We also finalize the presentation materials and conduct practice sessions with DWSS staff to prepare for the OCSE visit.***

The graphic on the right displays what we believe are the components of a successful federal certification process for NCSEAS.

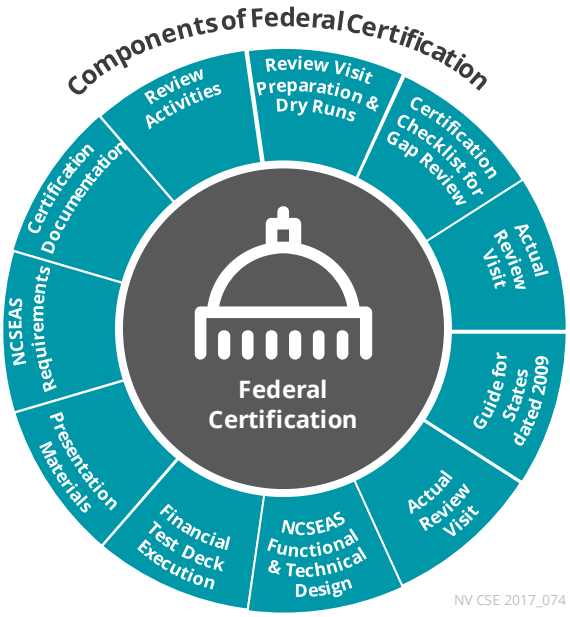


Figure 4-54. Summary Components of a Successful Federal Certification Process for NCSEAS.

Implementation of Child Support Distribution Logic and Dedicated Environment for Distribution Testing Process

Our team oversees the implementation of the child support distribution logic that conforms to the requirements established in the Federal Certification Distribution Test Deck. DWSS

establishes a special Certification logical environment for federal certification distribution testing that provides our team with the ability to conduct automated test scripting for regular regression testing repetition of the test deck conditions. This separate environment mirrors production and provides a realistic environment for demonstrating the test deck.

To execute the tests, we initiate the actions outlined in the following table using the automated or manual processes that are used within the NCSEAS production system and by running the necessary interface files to receive collections.

Actions	*Description*
Case setup	***We create each case with amounts due for the current monthly support obligation(s). As part of data setup, obligations are created for current monthly support, past due monthly support, adjudicated arrearages and/or retroactive arrearages. Arrearage balances are derived from past due monthly support, adjudicated, and retroactive arrearage balances.***
Payment setup	***Next, we post payments (collections). The type of payments to be posted vary based on the scenario summary. The payment types consist of regular support, income withholding, IRS offset and administrative, or unemployment compensation, depending on test scenario requirements. These payments are posted using mock interface files representing the state disbursement unit and other sources of the collections.***
Process payments	***We process payments based on the defined clearing rules for each payment (collection) type, payment receipt date, and case assistance indicator. Payments with a receipt date in a prior month should clear open arrearage receivables.***
Distribution and disbursement histories	***We write distribution and disbursement histories.***
OCSE34 Federal Report	***For each month for each case, we create a federal report (OCSE34).***
Cumulative OCSE34	***For each month, we create a cumulative OCSE34.***
Quarterly OCSE34	***For test scenarios that cross a three-month period, we create a quarterly OCSE34 report.***
Back-up test deck environment	***Between each month's tests, we create a back-up of the test deck environment to provide the ability to go back to a specific point in time should issues be encountered.***

Table 4-41. Summary of Federal distribution test steps.

As the test deck scenarios are completed, we develop documentation required to support the testing and demonstration of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) Distribution Test Deck, including the documentation of the expected and actual test results, testing conditions, and resulting OCSE34 reports. Members of our team worked to establish federal system certification for the CA CSE system which is the basis for the NCSEAS solution, and we are currently executing Phase II of the certification process as part of our work in Oregon. The process used for each of these states is leveraged to help DWSS achieve NCSEAS certification, and the lessons learned from these certifications can also be used to support the successful NCSEAS certification.

In addition to developing the documentation supporting the results of running the test deck scenarios, we capture the testing steps in the regression testing tool so that running the test deck scenarios can be done while the OCSE Review Team is onsite. Once the PRWORA Distribution Test Deck Documentation deliverable is reviewed and accepted, DWSS submits

the accepted test deck version along with the Certification Compliance Demonstration Materials deliverable to the federal government and requests the Federal System Certification review.

Federal Certification Compliance Guide and Review

The Federal Certification Guide is divided into nine sections, which contain the mandatory and optional certification requirements. We have found from our experience with other state certifications that OCSE review teams want states to address the certification requirements in the order they appear in the Federal Certification Guide during their presentations and demonstrations. As a result, we develop the presentation materials and demonstration scenarios and cases separately for each of the sections contained in the Federal Certification Guide.

Our team collectively brings years of experience in the certification of child support systems across nine states and territories: Ohio, Pennsylvania, California, Michigan, New Hampshire, Florida, Texas, New York, and Guam.

We progressively develop the Certification Review Materials in parallel as the NCSEAS solution moves through development. We begin to develop the presentation materials and demonstration scenarios as each section of the certification questionnaire is finalized. The following is included in these materials: presentation, handouts, demonstration scenarios, demonstration environment, and certification review binder. We work closely with DWSS staff in the development of these Certification Review Materials.

Federal Certification Compliance Deliverables

Our team has been responsible for the delivery of similar artifacts for federal certification compliance in several states enabling us to become experts in the creation of federal certification compliance deliverables. Several of the deliverables provided for the Florida CAMS Certification Review process may be leveraged as templates and accelerators for the State of Nevada. The deliverables provided by our team to facilitate federal certification compliance are outlined in the following table:

Deliverable	*Description*
Federal certification compliance demonstration	***A completed certification questionnaire is provided as part of the Certification Compliance Demonstration Material along with presentation materials and handouts.***
Federal certification compliance corrections	***A document is provided that addresses the federal certification compliance corrections needed in order to bring the NCSEAS in to federal certification compliance.***
PRWORA distribution test deck documentation	***PRWORA financial test deck case scenarios for testing can be used as templates and accelerators for developing the NCSEAS test deck cases. Completed test deck documentation for the Florida CAMS system is used as a template and accelerator for the PRWORA Distribution Test Deck Documentation.***
Federal certification compliance narrative	***This deliverable addresses each certification requirement, identifies the system component or components that implement the requirement, describes how the implementation is accomplished, and presents screens and reports to support the description. The narrative addresses the PRWORA auxiliary questions, the Family Support Act of 1988, and the Deficit Reduction Act of 2005, and the other federal certification requirements.***

Deliverable	*Description*
System modifications required for certification	***Deloitte is responsible for system modifications required to achieve Federal Certification per the Federal Certification guidelines.***

Table 4-42. Summary of Federal certification deliverables to be completed.

Federal Certification Compliance Narrative

As stated in the section above, our team provides a Federal Certification Compliance Narrative as part of our deliverables submitted for federal certification compliance. We use the Federal Certification Guide (2009) to develop the narrative comprising the Certification Compliance Demonstration Materials. As previously stated, we recommend an early start and intend to start working on this deliverable beginning in the planning phase and updating/elaborating on the document as necessary into the development phase.

Using the certification checklist, we engage in the following process:

- ***We identify which NCSEAS requirements are related to which certification requirements***
- ***We verify that certification requirements are addressed during the NCSEAS JAD sessions***
- ***During development of functional and technical design, we write the preliminary description of how the NCSEAS solution meets each certification requirement. As we finalize screens, reports, and forms and notices, we start to add screen prints, report layouts, and images of the forms and notices to support the descriptions. Where appropriate, flowcharts, tables, and diagrams are developed and added to support the description of batch process along with before and after screen shots to further support the description of NCSEAS compliance with certification requirements.***

The diagram to the right provides a visual depiction of the components that make up the response to each certification requirement.

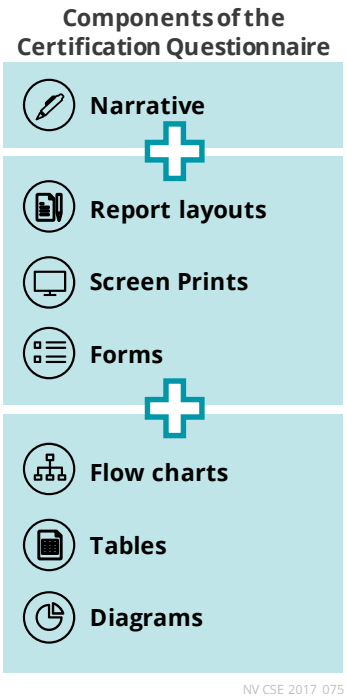


Figure 4-55. Summary of Certification Narrative.

An iterative review process during the drafting of sections makes the review and approval process more efficient and fosters a collaborative approach in developing the certification documentation. We encourage you to submit draft materials to OCSE for input and comment on the level of detail early in development and make this a part of the certification roadmap. The involvement of OCSE in this early review process decreases the likelihood of surprises with the formal submission. It also provides OCSE an opportunity to alert DWSS of potential certification issues so we can address them before formal federal certification submission.

PRWORA Distribution Test Documentation

The federal financial test deck issued by OCSE consists of 25 case scenarios. These case scenarios include the optional scenarios based on the Deficit Reduction Act (DRA) options selected by DWSS for the financial processing developed for NCSEAS. In the development phase, once the DWSS options have been finalized, we create the test scenarios to be used for the NCSEAS test deck. We have developed test scenarios for each of the mandatory case scenarios which we have used in other states. We use these previously developed scenarios as a basis for this effort and modify as needed the optional scenarios to meet the distribution options selected for NCSEAS.

The execution of the federal test deck is done over a clearly defined period. We welcome and encourage the participation of DWSS staff during the testing period of this effort. The OCSE Review Team expects that the execution of the test deck as much as possible reflects how cases are processed within NCSEAS production. The review team may ask the staff presenting during the review about the execution of the test deck, so participation during this process is critical for your team.

Federal Certification Compliance Demonstration

The OCSE review team wants to know that what they observe is actually how the NCSEAS solution meets the certification requirements. During the certification review, it is best to perform demonstrations in the actual production environment. However, some of the demonstrations that are needed initiate actions on cases and case members. Rather than impact live cases for these demonstrations, the demonstrations are conducted in a production-like environment that is provided by DWSS and supported by Deloitte. This environment mirrors production with cases developed specifically for the demonstration of NCSEAS functions, with PII and FTI data masked to prevent unintended disclosure. This approach - conducting demonstrations that may impact live cases in an environment other than production - has been acceptable to the OCSE review team in their review of other systems.

Preparation for the OCSE certification review visit goes beyond the development of the presentation materials and the demonstration scenarios. Since the Implementation Contractor is not allowed to present or speak during the certification review, unless asked to by OCSE, DWSS staff is responsible for providing the presentations and demonstrations. We help DWSS staff prepare to deliver the presentations and conduct the demonstrations. We schedule sessions with your staff to practice their presentations using the materials developed for the review visit. We encourage your certification team to be committed to participating in these sessions. During these dry runs the presentation scenarios and materials are tweaked and the handouts revised as needed to support the needs of DWSS staff. It is vital that your staff be comfortable in using the materials and that the material accurately reflects that NCSEAS meets the federal certification requirements. During these dry runs we coach DWSS presenters so that they deliver their presentations in a confident and knowledgeable manner. We set up mock certification review sessions with individuals acting as the OCSE review team asking questions of the presenters as they provide their presentations. This process is extended to the larger offices that are targeted by OCSE for a site visit during the certification process.

The end result is a set of materials that your staff feels comfortable with and which accurately reflect the system and how it meets the certification requirements. Once you have approved the materials we put together a binder for each of the OCSE Review Team members and the DWSS staff participating in the review sessions. These binders contain the presentation materials, handouts, and a description of the case scenarios used in the demonstrations. This provides the OCSE Review team with the documentation they may need to reference during the review visit. The documentation can also be provided in a soft copy that can be loaded on their laptops if that format is preferred.

Our team begins working on the documentation comprising the Certification Report at the same time we begin the development of the documentation associated with the Certification Compliance Report. This is done in the implementation phase after the OCSE Certification Review Visit. This is started as soon as the preliminary findings for the federal certification review are provided by OCSE during the exit conference.

Our extensive experience in federal certification of child support systems is leveraged to provide the final verification of the system's functionality. Additionally, the Operations and Maintenance period provides for additional modifications to the system if functional deficiencies are identified or post-implementation enhancements are needed as cited by the OCSE in the certification review of the system. We review the deliverable documentation provided as part of the Certification Compliance Demonstration Materials. We identify which responses are impacted based on the results of the OCSE review and modify each deliverable as appropriate and then changes to the system are made as described in the following section "Federal System Certification Corrections".

As a result of the OCSE review the following modifications are completed as needed by our team:

- ***A narrative of the certification activities that occurred pre-, during, and post-certification review.***
- ***Updated Certification Compliance Demonstration Materials that incorporate the changes made to the system and the original certification questionnaire, screen shots, reports, and other material as a result of the OCSE Review. These materials accurately describe how NCSEAS meets the federal certification requirements.***
- ***An updated financial test deck with the results of a new running of the test deck for required scenarios including scenarios where the system was changed in response to issues OCSE identified in the test deck review.***
- ***Identification of each component of NCSEAS that needs to be modified based on the OCSE review.***
- ***A description of how the modifications to the system were implemented.***
- ***Presentation materials for presenting and demonstrating to OCSE the modifications made to the NCSEAS to bring it into compliance with the certification requirements.***
- ***A response to each of the OCSE findings providing information on how each issue was addressed and, if applicable, the reason(s) for DWSS disagreement with any issue raised by OCSE. We work very closely with DWSS in formulating these responses.***

Federal System Certification Corrections

We do not wait until the issuance of the formal report to begin addressing changes that may need to be made to NCSEAS. Based upon feedback provided during the exit conference, we draft a response to findings cited by the OCSE review team. We work closely with DWSS to address each issue and to complete the necessary response. Our goal is to have a response for each issue presented during the exit conference prepared for DWSS by the time the formal report from the OCSE is received. Once the formal report is received, additional issues raised by OCSE in that report, if any, are also addressed.

Software changes found to be necessary to address certification issues must be submitted through the Change Management process / Change Control Board and approved by DWSS. We conduct a full analysis and document the changes that need to be made to NCSEAS functionality to address the certification issues raised by OCSE. The documentation includes a formal plan outlining the timeline for design, development, testing and implementation of the required changes. The plan outlines the updates that need to be made to functional design documents, requirements, and test scripts in order to reflect the required changes to the system. We include in the plan how issues raised regarding the hardware or the hardware configuration are addressed. Deloitte works closely with DWSS to develop the response to address any management issues raised by OCSE.

4.34.3 Deliverables

4.34 SYSTEM CERTIFICATION

4.34.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.34.3.1	Federal Certification Support	4.34.2.1 through 4.34.2.5	5
4.34.3.2	Federal Certification Compliance Narrative	4.34.2.6	10
4.34.3.3	PRWORA Test Documentation	4.34.2.7	10
4.34.3.4	Federal Certification Compliance Demonstration	4.34.2.8	5
4.34.3.5	Federal Certification Compliance	4.34.2.9	5

Deliverable	*Confirmation of review time*
Federal Certification Support	***5 Days***
Federal Certification Compliance Narrative	***10 Days***
PRWORA Test Documentation	***10 Days***
Federal Certification Compliance Demonstration	***5 Days***
Federal Certification Compliance	***5 Days***

4.35 Transition Maintenance and Operation of System to the State

4.35.1 Objective

4.35 TRANSITION MAINTENANCE AND OPERATION OF SYSTEM TO THE STATE

4.35.1 Objective

The objective of this task is to ensure a smooth, uninterrupted transition of the system to the State. The Implementation Contractor is responsible for training technology staff, help desk staff, and operations staff.

Our collaborative and transparent approach enables us to impart knowledge and training to DWSS team members throughout the lifecycle of the project. Deloitte provides a well-orchestrated and structured program that offers opportunities for team members to work together and collaborate on a broad base of project tasks while also providing formal learning and knowledge transfer. We believe that this collaborative approach best prepares your staff to take over the management and support of the system at the conclusion of the maintenance period. We have the track record that proves our ability to successfully transition maintenance and operations to states of a similar size and systems of similar complexity as the NCSEAS.

SECTION HIGHLIGHTS

- ***A collaborative and transparent approach to the project that involves Nevada team members beginning on day one***
- ***A well-orchestrated and structured program for transition that includes formal learning and knowledge transfer***
- ***A record of success in transitioning M&O for other states***

4.35.2 Activities

4.35 TRANSITION MAINTENANCE AND OPERATION OF SYSTEM TO THE STATE

4.35.2 Activities

4.35.2.1 Develop a Knowledge Transfer Plan and Procedures which will:

A. Provide for the Implementation Contractor to identify the Program's parallel project organization, positions, and skills.

B. Develop detailed steps to transition knowledge specific to each role on the Program's maintenance team.

C. Be in effect throughout the life of the project so that the Implementation Contractor will work with the Program to assure that the Program's maintenance staff will be able to maintain the modernized system after the warranty period ends.

4.35.2.2 Execute the approved Knowledge Transfer Plan and Procedures successfully.

4.35.2.3 Develop a Maintenance Training Plan for a new maintenance team.

4.35.2.4 Execute the approved Maintenance Training Plan successfully.

4.35.2.5 Develop an Operations Plan which will establish the tasks required to prepare for and maintain ongoing operation of the system. The plan will specify batch jobs as well as the necessary support for online operations.

4.35.2.6 Execute the approved Operations Plan successfully.

4.35.2.7 Develop an Operations Transition Plan which will document the tasks necessary to turn over system operations to the Program's systems operation team. The plan will document all the routine tasks and procedures associated with system operation.

4.35.2.8 Execute the approved Operations Transition Plan successfully.

4.35.2.9 Develop Technical Support Procedures which will:

A. Be for use by the system operations staff.

B. Define the processes for day-to-day operations, the batch schedule, and the restart and recovery procedures.

C. Establish the processes for making software and data corrections and managing fixes.

D. Set the standards for responding to system problems.

4.35.2.10 Develop Customer Support Procedures which will:

A. Be for use by customer support staff assisting the NCSEAS users.

B. Define the procedures for managing system problems and issues, including the reporting process, tutelage as needed to assist system users in the correct usage of the system, prioritization for system deficiencies, the use of tools for data correction, and communication of software defects to the technical support team.

4.35.2.11 Develop a Help Desk Management Plan which will identify the Implementation Contractor's approach to establishing the infrastructure, staffing, and operation of a NCSEAS help desk to provide users with post-implementation functional and technical support.

4.35.2.12 Execute the approved Help Desk Management Plan successfully.

Knowledge Transfer Plan and Procedures

We measure project success not just by how well we develop a system, but also by the ease of maintenance and the ability to seamlessly transition responsibility for ongoing system operations to our client when the contract is complete. To prepare for this seamless transition, we use proven training and knowledge transfer methodologies to build capabilities for support of the NCSEAS architecture, system application development, and system management processes with DWSS staff that is assigned to the project.

Our previous project experience with Nevada's Division of Welfare and Supportive Services exemplifies our approach to transition. We not only imparted system knowledge that enables DWSS to maintain and operate their system, but we also imparted knowledge of our approaches and methodologies which have been utilized, not merely for maintenance and operations, but for future system projects.

Our team has the tools and methodologies in place to enable DWSS to ultimately manage and maintain NCSEAS on its own. We develop and deliver the Operations and Technical Training Plan using a well-defined approach to promote staff competency, awareness, and confidence in NCSEAS and leverage the rich experience of our team supporting child support systems.

The table that follows provides examples of our knowledge transfer plans and procedures:

Components of the operations and technical training plan	*Examples of how our team accomplishes operations and technical training*
DWSS staff involvement and job shadowing	***DWSS staff is embedded with our team throughout the project, and in particular during the Operations and Maintenance phase of the project. We identify mentors within the Deloitte Team based on their role in the project team and relevant knowledge and skills that need to be shared with DWSS staff. Mentors focus on providing assistance and feedback with day-to-day skills needed to complete technical tasks and activities.***
DWSS staff supervision	***DWSS staff is supervised by project team members and their identified mentor(s). Mentors conduct frequent review sessions where mentors review mentee progress on assignments and tasks.***
Development and design assignments	***Our team performs project tasks and solves problems as they arise. However, the DWSS staff performs independent development and design tasks as identified and participates in other joint work efforts.***
Base solution training	***We provide DWSS staff with training activities on the source code and the base system components. Example activities include job shadowing and mentor review sessions.***
Database training	***Our team provides DWSS staff with detailed training sessions, including workshops and job shadowing, on the current database design and the various database objects such as packages, procedures, and functions.***
Technical design and training sessions	***Our team provides DWSS staff with comprehensive training on the structure and architecture of the NCSEAS solution, including hands-on design opportunities and development assignments.***

Components of the operations and technical training plan	*Examples of how our team accomplishes operations and technical training*
Training evaluation	***We develop in conjunction with DWSS a mechanism for evaluating training activities. We use the Kirkpatrick model to measure training effectiveness, validating knowledge transfer, and identifying re-training opportunities based on the needs of the DWSS staff.***

Table 4-43. Examples of knowledge transfer and transition activities completed during the transition period.

Execute the Approved Knowledge Transfer Plan and Procedures

Once approved by DWSS and the designated stakeholders, the Knowledge Transfer Plan and Procedures establishes the baseline for the Knowledge Transfer activities required for the new NCSEAS solution. This plan and procedures is developed and confirmed during the Planning phase. Successful execution and completion of the Knowledge Transfer Plan and Procedures occurs at the beginning of the Maintenance and Operations phase of the project.

Maintenance Training Plan

Knowledge continuity is critical for effective ongoing operations. In the end, this controls costs and manages operating risk. Our approach to onboarding maintenance team members emphasizes important knowledge transfer activities. As part of our knowledge transfer approach, our team identifies prerequisite learning activities for DWSS team members to complete as part of onboarding, provides project and system documentation for review, and offers meeting and discussion forums. Additionally, our staff provide system or tool demonstrations through on-the-job training, along with walk-throughs, shadowing opportunities, meetings and activities, substantial and meaningful work assignments, and governance meeting participation in order to provide new team members with an understanding of project structures.

Execute the Approved Maintenance Training Plan

Once approved by DWSS and the designated stakeholders, the Maintenance Training Plan establishes the baseline for the Maintenance Training activities required for the new NCSEAS solution. This plan is developed and confirmed during the Transition phase. Successful execution and completion of the Maintenance Training Plan occurs at the beginning of the Maintenance and Operations phase of the project.

Operations Plan

Our approach to Operations is thorough and effective, as demonstrated by our previous successes on past child support maintenance and operation (M&O) projects. In the Operations Plan, we use our proven approach to outline detailed procedures and standards that are specific to NCSEAS. The operations plan establishes the tasks required to prepare for and maintain ongoing operation of the system. The plan specifies batch jobs as well as the necessary support for online operations. It is delivered at the start of the post implementation warranty and maintenance support phase, and serves as the roadmap for M&O. We work closely with DWSS during the Implementation phase of the project to establish a plan that meets DWSS expectations.

Execute the Approved Operations Plan

Once approved by DWSS and the designated stakeholders, the Operations Plan establishes the baseline for the Operations activities required for the new NCSEAS solution. This plan is developed and confirmed during the Transition phase. Successful execution and completion of the Operations Plan occurs at the beginning of the Maintenance and Operations phase of the project.

Operations Transition Plan

The Operations Transition Plan lays out the necessary tasks required to transition the day-to-day operations and maintenance of the NCSEAS solution from our team to DWSS. The Operations Transition plan includes information, specific goals, and activities relating to: management documentation, configuration management information, utilities documentation, and system documentation. It is important for the plan include tasks that are required to operate and maintain the solution along with the necessary knowledge transfer to understand and become comfortable with executing these operations tasks. Our team works with DWSS to create a plan that is both fully encompasses the required activities for operations and provides the DWSS staff with a high level of confidence in the acceptance of the operational and maintenance aspects of the solution.

DWSS collaboration is essential in creating a plan that works. Our teams operate as an integrated project team to gradually transition DWSS resources into an ownership role for the tasks associated with maintaining the NCSEAS solution. Through this integrated team approach we enable DWSS staff to independently execute day to day operations of NCSEAS.

We establish the contents of the Operations Transition Plan deliverable during the Transition phase using the project's established Deliverable Review Process. We create a Deliverable Expectations Document which DWSS reviews before the actual deliverable is developed. The Operations Transition Plan deliverable includes our approach and methodology for operations transition. It includes activities covering the transition phases (e.g., Planning, Execution and Closeout), subtasks, activities, and a proposed schedule for system transition.

Execute the Approved Operations Transition Plan

Once approved by DWSS and the designated stakeholders, the Operations Transition Plan establishes the baseline for the Operations Transition activities required for the new NCSEAS solution. This plan is developed and confirmed during the Transition phase. Successful execution and completion of the Operations Plan occurs at the beginning of the Maintenance and Operations phase of the project.

Technical Support Procedures

Our team imparts our technical support procedures to the DWSS system operations staff and provides detailed information on the day-to-day operations, including the batch schedule and the restart and recovery procedures. As a result, the DWSS team is properly equipped to handle the day-to-day operations and maintenance of the system. Our team establishes the processes for making software and data corrections and managing fixes, and sets the standards for responding to system problems. Our Incident Resolution process continually monitors reported incidents, follows through with root-cause analysis, captures knowledge, and enables continuous process improvement. We achieve this by leveraging an

integrated framework that includes continuous improvement and support for the NCSEAS solution and a staffing model with a judicious mix of implementation and post-implementation support staff.

Customer Support Procedures

Critical to the success of any project is the ability to provide excellent customer support to the system end users. In order to accomplish this, DWSS NCSEAS customer support staff must have the right customer support procedures in place at the time of transition. Our team facilitates customer support by providing DWSS staff with the necessary procedures and knowledge of the system required to assist NCSEAS users in addressing questions and reported issues. Our framework for handling system problems and issues along with the necessary reporting processes, information for assisting users in the correct usage of the system, prioritization for system deficiencies, the use of tools for data correction, and communication of software defects to the technical support team is made available to DWSS. In order to assist with the transfer of customer support procedures, our team commences help desk support as part of the Pilot implementation, and the help desk is fully staffed and operational by the time the project enters the Post-Implementation and Warranty phase. Additionally, DWSS staff work alongside Deloitte staff in supporting NCSEAS users throughout the project enabling the DWSS staff to gain the necessary skills and knowledge required to assume customer support.

Help Desk Management Plan

The help desk management plan identifies our approach to supporting the infrastructure, staffing, and operation of a NCSEAS help desk to provide users with post-implementation functional and technical support. User support is critical to the success of the NCSEAS. We view the integrated help desk capability as a "stack" of services that come together to provide end to end support for our clients. The first line of entry into the process is generally through the use of 'super users' for the respective systems. Resolving issues and incidents at this level allows many of the 'how to' questions and minor known problems to be resolved immediately, which promotes efficient use of resources at the other levels and avoids overloading priorities of the modifications and maintenance teams.

Through the Level 1 Help Desk, provided by the existing DWSS help desk, resources attempt to resolve minor issues or questions reported from NCSEAS users. Those issues that cannot be immediately addressed by the help desk are routed to our Level 2 support team for further action. For Level 2 Help Desk support, our team addresses break-fix activities, batch resolutions, functional support, resolution of systems performance issues, and other problem tickets. Please reference Sections VI: 4.32 System Implementation and 4.33 Warranty Period (Initial Maintenance and Operation) for additional information on our delivery of Help Desk services.

Execute the Approved Help Desk Management Plan

Once approved by DWSS and the designated stakeholders, the Help Desk Management Plan establishes the baseline for the Help Desk Management activities required for the new NCSEAS solution. This plan is developed and confirmed during the Transition phase. Successful execution and completion of the Help Desk Management Plan occurs at the beginning of the Maintenance and Operations phase of the project.

4.35.3 Deliverables

4.35 TRANSITION MAINTENANCE AND OPERATION OF SYSTEM TO THE STATE

4.35.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.35.3.1	Knowledge Transfer Plan and Procedures	4.35.2.1	5
4.35.3.2	Successful Execution of the Knowledge Transfer Plan and Procedures	4.35.2.2	10
4.35.3.3	Maintenance Training Plan	4.35.2.3	5
4.35.3.4	Successful Execution of the Maintenance Training Plan	4.35.2.4	10
4.35.3.5	Operations Plan	4.35.2.5	10
4.35.3.6	Successful Execution of the Operations Plan	4.35.2.6	10
4.35.3.7	Operations Transition Plan	4.35.2.7	10
4.35.3.8	Successful Execution of the Operations Transition Plan	4.35.2.8	10
4.35.3.9	Technical Support Procedures	4.35.2.9	10
4.35.3.10	Customer Support Procedures	4.35.2.10	10
4.35.3.11	Help Desk Management Plan	4.35.2.11	10
4.35.3.12	Successful Execution of the Helpdesk Management Plan	4.35.2.12	10

Deliverable	*Confirmation of review time*
Knowledge Transfer Plan and Procedures	***5 days***
Successful Execution of the Knowledge Transfer Plan and Procedures	***10 days***
Maintenance Training Plan	***5 days***
Successful Execution of the Maintenance Training Plan	***10 days***
Operations Plan	***10 days***
Successful Execution of the Operations Plan	***10 days***
Operations Transition Plan	***10 days***
Successful Execution of the Operations Transition Plan	***10 days***
Technical Support Procedures	***10 days***
Customer Support Procedures	***10 days***
Help Desk Management Plan	***10 days***
Successful Execution of the Helpdesk Management Plan	***10 days***

4.36 Project Closeout

4.36.1 Objective

4.36 PROJECT CLOSEOUT

4.36.1 Objective

The Implementation Contractor will be responsible for a project completion report that includes lessons learned. The Implementation Contractor will ensure all the most recent plans, design documents, training materials, and manuals are in the central repository.

It is our team's responsibility to prepare DWSS staff to independently operate, maintain, and enhance the NCSEAS solution. Your staff will be well-trained and knowledgeable in the various aspects of the system and its application across Nevada. We have proven techniques to confirm that transition occurs throughout the contract period. However, we also acknowledge the value of verifying the completion of the transition and evaluating its level of success. We conduct a transition assessment upon project closure in order to evaluate that the necessary level of knowledge transfer was achieved. We will provide your team with lessons learned, leading practices, and other recommendations for efficient and effective ongoing operations, maintenance, and enhancement of the system.

SECTION HIGHLIGHTS

- ***Commitment to meeting Nevada's expectations at project closeout***
- ***Focus on delivering thorough documentation materials for a smooth transition***
- ***Dedication to creating a comprehensive and up to date central repository for use by DWSS following the project***

4.36.2 Activities

4.36 PROJECT CLOSEOUT

4.36.2 Activities

Project Completion Report:

The project completion report will include, as a minimum, lessons learned, confirmation of the knowledge transfer delivery, confirmation that the system software repository is update to date, and confirmation that all project documentation is updated and in the project central repository.

As part of project closeout, our team provides a Project Completion Report that includes lessons learned, confirmation of the knowledge transfer delivery, confirmation that the system software repository is update-to-date, and confirmation that required project documentation is updated and in the project central repository. We support an effective transition of documentation for data, hardware, software, system and security, as well as the knowledge and procedures necessary for DWSS to perform system operations, maintenance, and enhancements.

The following are the different areas of NCSEAS we transition to DWSS at project closeout:

Areas to be transitioned to DWSS	
Application development/ integration	***Methods, tools, and templates used in each Software Development Life Cycle phase including requirements gathering/confirmation, design, development, test, and deployment***
Project management/ governance	***Activities that include project planning, project scheduling and estimation, project monitoring, tracking mechanisms, status reporting, and work order governance.***
System operations	***This includes batch operations, external and internal interfaces, performance management, system monitoring, and product licensing and upgrades.***

Areas to be transitioned to DWSS	
Technical architecture and solution	***The hardware and software components of NCSEAS, including prebuilt functionality, framework components, COTS products and custom modules.***
Functional application	***The components of each child support functional area of NCSEAS (e.g., Case Intake, Locate, Establishment, Case Management, Enforcement, Financials, Reporting) including corresponding code, data, and interface objects.***
Security	***Technology assets and products used to support the security of the solution, as well as documentation that defines security policies, information on the security organization, asset management and human resource security, physical and environment security, key procedures, and access control policies.***

Table 4-44. Summary of NCSEAS project procedures and subject areas for which transition is completed prior to Project Closeout.

Our team develops and delivers the Project Closeout Report which provides a guide and a thorough reference document for the DWSS team following the completion of the project. We also confirm completion of the knowledge transfer delivery process for the areas outlined in the table above.

The following graphic provides a summary of the items that our team includes in the Project Closeout Report, and the value that these items offer to DWSS both in and beyond the transition period:

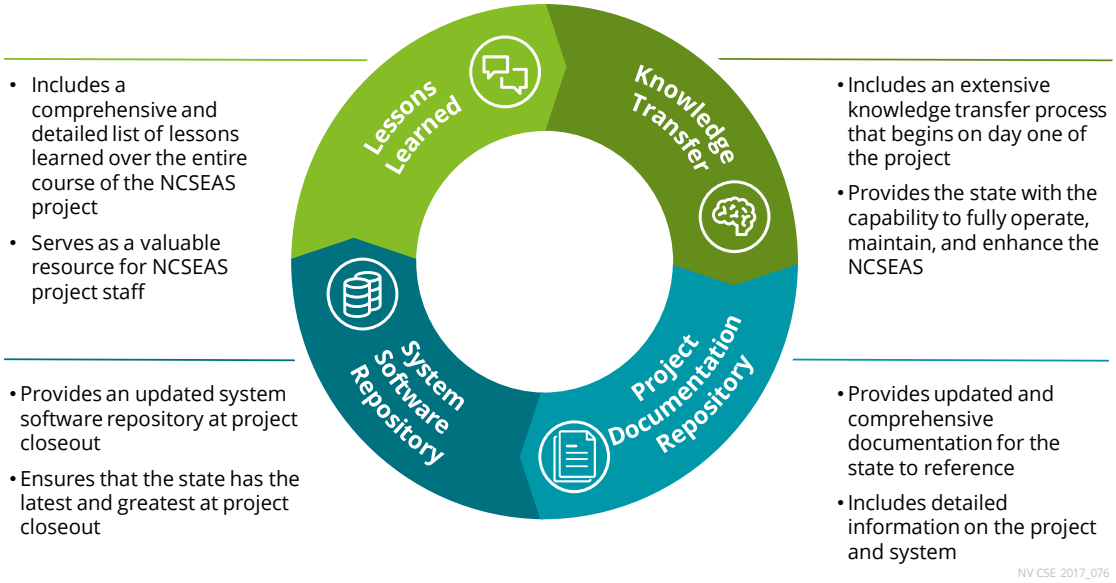


Figure 4-56. Summary of Project Closeout content

4.36.3 Deliverables

4.36 PROJECT CLOSEOUT

4.36.3 Deliverables

DELIVERABLE NUMBER	DESCRIPTION OF DELIVERABLE	ACTIVITY	STATE'S ESTIMATED REVIEW TIME (WORKING DAYS)
4.36.3.1	Project Completion Report	4.36.2	10

Deliverable	*Review Time*
Project Completion Report	***10 Days***

4.37 Vendor Response to Scope of Work

4.37 VENDOR RESPONSE TO SCOPE OF WORK

4.37.1 Within the proposal, vendors must provide information regarding their approach to meeting the requirements described within Sections 5.1 through 5.35.

4.37.2 If subcontractors will be used for any of the tasks, vendors must indicate what tasks and the percentage of time subcontractor(s) will spend on those tasks.

4.37.3 Vendor's response must be limited to no more than five (5) pages per task not including appendices, samples, and/or exhibits.

Please review Section VI: 4.1 Vendor Response to Scope of Work for our response as the RFP text is identical.

4.38 Deliverable Submission and Review Process

4.38 DELIVERABLE SUBMISSION AND REVIEW PROCESS

Once the detailed project plan is approved by the State, the following sections detail the process for submission and review of deliverables during the life of the project/contract.

4.38.1 General

4.38.1.1 The Implementation Contractor must provide one (1) master (both hard and soft copies) of each written deliverable to the appropriate State Project Manager as identified in the contract.

4.38.1.2 Concurrent with the submission of a draft deliverable, the Implementation Contractor will present a walk-through of the deliverable to the Project Management Team, the QA contractor staff, and other relevant project staff (depending on the subject of the deliverable). This process will serve to inform all project participants of the substance of each deliverable and will allow potential issues with the deliverables, including inconsistencies with respect to project requirements, to be identified early in the review process.

4.38.1.3 The Program's Project Management Team and QA contractor will carefully review all Implementation Contractor deliverables before approval. The Program's Project Management Team will commit to reviewing and commenting on draft deliverables timely to assure the quality and consistency of the application and to maintain the project schedule. Unless otherwise stated in a Deliverables Table, the Project Team will have a minimum of fifteen (15) business days to review and provide comments on an initial draft deliverable and five (5) additional business days to review and provide comments on a final deliverable submission.

4.38.1.4 Once a deliverable is approved and accepted by the State, the Implementation Contractor must provide an electronic copy. The State may, at its discretion, waive this requirement for a particular deliverable.

4.38.1.5 The electronic copy must be provided in software currently utilized by the agency or provided by the Implementation Contractor.

4.38.1.6 Deliverables will be evaluated by the State utilizing mutually agreed to acceptance/exit criteria.

4.38.2 Deliverable Submission

4.38.2.1 Prior to development and submission of each contract deliverable, a summary document containing a description of the format and content of each deliverable will be delivered to the State Project Manager for review and approval. The summary document must contain, at a minimum, the following:

A. Cover letter;

B. Table of Contents with a brief description of the content of each section;

C. Anticipated number of pages; and

D. Identification of appendices/exhibits.

4.38.2.2 The summary document must contain an approval/rejection section that can be completed by the State. The summary document will be returned to the Implementation Contractor within a mutually agreed upon time frame.

4.38.2.3 Deliverables must be developed by the Implementation Contractor according to the approved format and content of the summary document for each specific deliverable.

4.38.2.4 At a mutually agreed to meeting, on or before the time of delivery to the State, the Implementation Contractor must provide a walkthrough of each deliverable.

4.38.2.5 Deliverables must be submitted no later than 5:00 PM, per the approved contract deliverable schedule and must be accompanied by a deliverable sign-off form (refer to Attachment G ~ Project Deliverable Sign-Off Form) with the appropriate sections completed by the Implementation Contractor.

4.38.3 Deliverable Review

4.38.3.1 The State's review time begins on the next working day following receipt of the deliverable.

4.38.3.2 The State's review time will be determined by the approved and accepted detailed project plan and the approved contract.

4.38.3.3 Unless stated otherwise in a Deliverable Table, the State has up to fifteen (15) working days to determine if a deliverable is complete and ready for review. Unless otherwise negotiated, this is part of the State's review time.

4.38.3.4 Any subsequent deliverable dependent upon the State's acceptance of a prior deliverable will not be accepted for review until all issues related to the previous deliverable have been resolved.

4.38.3.5 Deliverables determined to be incomplete and/or unacceptable for review will be rejected, not considered delivered and returned to the Implementation Contractor.

4.38.3.6 After review of a deliverable, the State will return to the Implementation Contractor the project deliverable sign-off form with the deliverable submission and review history section completed.

4.38.4 Accepted

4.38.4.1 If the deliverable is accepted, the original deliverable sign-off form signed by the appropriate State representatives will be returned to the Implementation Contractor.

4.38.4.2 Once the Implementation Contractor receives the original deliverable sign-off form, the State can then be invoiced for the deliverable (refer to Section 8, Financial).

4.38.4.3 Comments/Revisions Requested by the State

A. If the State has comments and/or revisions to a deliverable, the following will be provided to the Implementation Contractor:

1. The original deliverable sign-off form with an updated entry to the deliverable submission and review history section.
2. Attached to the deliverable sign-off form will be a detailed explanation of the revisions to be made and/or a marked up copy of the deliverable.
3. The State's first review and return with comments will be completed within the times specified in the contract.
4. The Implementation Contractor will have five (5) working days, unless otherwise mutually agreed to, for review, acceptance, and/or rejection of the State's comments.
5. A meeting to resolve outstanding issues must be completed within three (3) working days after completion of the Implementation Contractor's review or a mutually agreed upon time frame.
6. Agreements made during meetings to resolve issues must be documented separately.
7. Once an agreement is reached regarding changes, the Implementation Contractor must incorporate them into the deliverable for resubmission to the State.
8. All changes must be easily identifiable by the State.
9. Resubmission of the deliverable must occur within five (5) working days or a mutually agreed upon time frame of the resolution of any outstanding issues.
10. The resubmitted deliverable must be accompanied by the original deliverable sign-off form.
11. This review process continues until all issues have been resolved within a mutually agreed upon time frame.
12. During the re-review process, the State may only comment on the original exceptions noted.
13. All other items not originally commented on are considered to be accepted by the State.
14. Once all revisions have been accepted, the original deliverable sign-off form signed by the appropriate State representatives will be returned to the Implementation Contractor.
15. The Implementation Contractor must provide one (1) updated and complete master paper copy of each deliverable after approval and acceptance by the State.
16. Once the Implementation Contractor receives the original deliverable sign-off form, the State can then be invoiced for the deliverable (refer to Section 8, Financial).

4.38.4.4 Rejected, Not Considered Delivered

A. If the State considers a deliverable not ready for review, the following will be returned to the Implementation Contractor:

1. The original deliverable sign-off form with an updated entry to the deliverable submission and review history section.
2. The original deliverable and all copies with a written explanation as to why the deliverable is being rejected, not considered delivered.
3. The Implementation Contractor will have five (5) working days, unless otherwise mutually agreed to, for review, acceptance, and/or rejection of the State's comments.
4. A meeting to discuss the State's position regarding the rejection of the deliverable must be completed within three (3) working days after completion of the Implementation Contractor's review or a mutually agreed upon time frame.
5. Resubmission of the deliverable must occur within a mutually agreed upon time frame.
6. The resubmitted deliverable must be accompanied by the original deliverable sign-off form.

7. Upon resubmission of the completed deliverable, the State will follow the steps outlined in Section 4.38.3.2, Accepted, or Section 4.38.3.3, Comments/Revisions Requested by the State.

Our team creates comprehensive system and deliverable documentation as part of the NCSEAS project delivery effort. Our team takes pride in the quality of deliverables submitted throughout the project lifecycle. Integral to the quality that we provide are the high standards that we have in place regarding deliverable submission and review.

Deloitte will include DWSS project leadership and other key stakeholders in the review and quality assurance process for deliverables. In order to verify quality and continuously improve the content and value of our deliverables, our team follows an established process for deliverable review and submission. This includes an internal review with our project staff and quality assurance team, an established review period for the DWSS management team and stakeholders, including a facilitated deliverable walkthrough, and lastly the formal submission and review of deliverables via the project management office.

SECTION HIGHLIGHTS

- ***Providing DWSS the opportunity to review and comment on each deliverable***
- ***Conducting facilitated deliverable walkthroughs***
- ***Engaging the DWSS management team in reviewing and commenting on draft deliverables***
- ***Utilizing mutually agreed to acceptance/exit criteria for deliverable evaluation***

General

Before the submission of deliverable documents to DWSS for review, our team conducts a rigorous internal review of documents. Throughout the lifecycle of the project, our team engages with DWSS stakeholders in the creation, submission and review of task-level deliverables. The Project Management Office works to confirm the quality of deliverables before approval. Our team recognizes the value of having the DWSS project leadership review and provide feedback on project deliverables. Conducting deliverable walkthroughs provides DWSS project leadership and stakeholders with information about the content of deliverables and enables direct feedback and communication before the final review and formal submission of the deliverable itself. In accordance with the contract, our team provides one (1) master (both hard and soft copies) of each written deliverable to the DWSS Project Manager, and conducts a facilitated walkthrough of the deliverables for the Project Management Team, the QA contractor staff, and other designated DWSS stakeholders.

DWSS will have a certain number of business days to review and provide comments on the draft deliverables and additional business days, which can vary based upon the specific deliverable, to review and comment on the final submitted deliverables as outlined in this response. Our team submits deliverables in a software format that is compatible with the software available to DWSS. We work with DWSS to establish mutually agreed-to acceptance/exit criteria.

Deliverable Submission

The deliverable submission process enables DWSS to provide direct feedback about the content and quality of the deliverables. The deliverables are based on the Deliverable Expectation Documents (DED) that our team provides DWSS project stakeholders prior to

the creation of the actual deliverable. The DED includes a detailed description of the deliverable, sections that are to be included in the deliverable, constraints and assumptions identified for the deliverable, and a section that includes information on the standards and guidelines used for creating the deliverable along with information about the format, method of delivery, anticipated length, and document tracking for the deliverable. The review process is also clearly delineated in the document showing the anticipated start and due dates for review. Additional items within the DED include an outline of the project roles and responsibilities, key stakeholders, the review team, acceptance criteria, organization and content, and an authorization for deliverable development. The DED must be approved by DWSS before work commences on the actual deliverable.

As part of the deliverable submission process, our team provides the following items to the DWSS leadership:

Documents submitted for deliverable review	*Description of items submitted*
Deliverable Expectations Document (DED)	***Our team provides a description of the format and content of each deliverable within the summary document. The summary document contains the following:*** • ***Cover letter*** • ***Table of Contents that contains a description of each section*** • ***Anticipated number of pages*** • ***Identification of appendices/exhibits*** • ***An approval/reject section to be completed by DWSS*** ***The DED must be approved by DWSS before work commences on the actual deliverable.***
Deliverable Documents	***In accordance with the contract, our team provides one (1) master (both hard and soft copies) of each written deliverable to the DWSS Project Manager.*** ***Following approval of the deliverables, an electronic copy, provided in a software format that is compatible with the software used by DWSS is provided to NCSEAS project leadership.***
Deliverable Submission	***Deliverables are submitted no later than 5:00 PM, and include a deliverable sign-off form. Appropriate sections are completed by Deloitte.***

Table 4-45. Deliverable Review Documents.

Having a structured deliverable submission process in place facilitates the successful review and timely submission of deliverable documents. Deloitte recognizes the value of providing adequate time for evaluating deliverables and the need to provide detailed information on the deliverable documents.

In accordance with DWSS expectations, deliverables are developed according to the approved format and content outlined in the DED for each deliverable. Our team works with DWSS to establish a mutually agreed-to, facilitated meeting that takes place on or before the time of deliverable submission to DWSS. This meeting serves as a deliverable walkthrough and provides an overview of each of the deliverables being submitted.

Deliverable Review

We believe that it is critical to uphold DWSS expectations regarding the Deliverable Review Process. We carefully track feedback from the DWSS using Microsoft Word and Excel, and

track the number of comments that we receive in an effort to continually improve the quality of our deliverables. The following expectations are part of the Deliverable Review process:

- ***Initiate the review period on the next business day following the receipt of the deliverable.***
- ***Provide DWSS-specified number of working days for review of the deliverables.***
- ***Comply with the expectation that any subsequent deliverable dependent upon DWSS acceptance of a prior deliverable is not accepted for review until issues related to the previous deliverable have been resolved.***
- ***Comply with the expectation that deliverables incomplete and/or unacceptable for review are rejected, not considered delivered, and returned.***
- ***After review of a deliverable, DWSS or the QA vendor provides a consolidated list of comments for that deliverable.***
- ***After approval of a deliverable, DWSS returns to our team the project deliverable sign-off with the deliverable submission and review history section completed.***

We work with DWSS leadership to verify that proper procedures are followed regarding deliverables that are accepted, returned for revisions, and/or rejected. When a deliverable is accepted, the original deliverable sign-off form must be provided by the appropriate DWSS representative and returned to Deloitte. Following receipt of the original deliverable sign-off form, DWSS can then be invoiced for the deliverable.

If a deliverable document has comments or revisions requested, DWSS must provide the original deliverable sign-off form with an updated entry to the deliverable submission and review history section along with an attached sign-off form with a detailed explanation of the revisions to be made and/or a marked up copy of the deliverable. DWSS agrees to complete their initial review and provide any comments on the deliverables within the review times specified in the contract for each deliverable. Our team provides five (5) working days, unless otherwise mutually agreed to, for review, acceptance, or rejection of the DWSS comments. A meeting to resolve outstanding issues must be completed within three (3) working days after completion of the review, or a mutually agreed upon time frame, and any agreements made during meetings to resolve issues must be documented separately. After an agreement has been reached regarding deliverable changes, our team incorporates the changes into the deliverable for resubmission to DWSS, and changes made in the document are provided in a way to be identifiable by DWSS. Resubmission of the deliverable occurs within five (5) working days or a mutually agreed upon time frame of the resolution of any outstanding issues. The resubmitted deliverable is accompanied by the original deliverable sign-off form. This review process continues until issues have been resolved within a mutually agreed upon time frame. DWSS may only comment on the original exceptions noted during the re-review process, and other items not originally commented on are considered to be accepted by DWSS. If the responses are not accepted after the resubmission, the outstanding issues are escalated for remediation. After the revisions have been finalized and accepted, our team provides the original sign-off form signed by the appropriate DWSS representatives. We provide one (1) updated and complete master paper copy of each deliverable after approval and acceptance by DWSS, and once

Deloitte receives the original deliverable sign-off form, DWSS can then be invoiced for the deliverable.

If a deliverable is rejected or not considered delivered, DWSS provides the original deliverable sign-off form with an updated entry to the deliverable submission and review history section, and includes a written explanation as to why the deliverable is being rejected, not considered delivered. Deloitte has five (5) working days, unless otherwise mutually agreed to, for review, acceptance, and/or rejection of the DWSS comments. A meeting to discuss the DWSS position regarding the rejection of the deliverable is completed within three (3) working days after completion of the review or a mutually agreed upon time frame. Resubmission of the deliverable must occur within a mutually agreed upon time frame, and the resubmitted deliverable must be accompanied by the original deliverable sign-off form.

An overview of the deliverable review and approval process is provided in the following graphic:

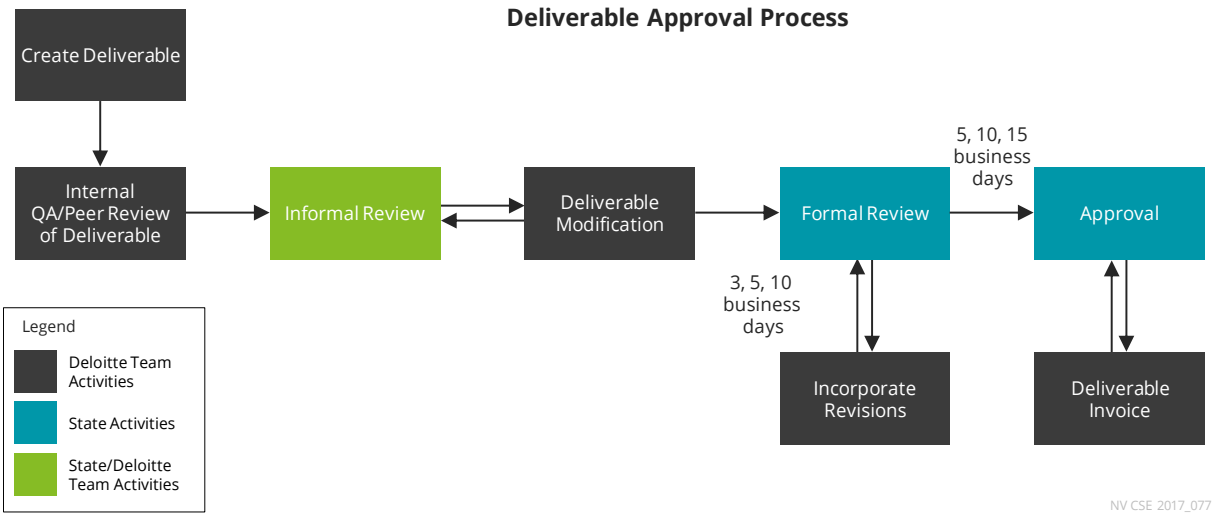


Figure 4-57. Deliverable review and approval process.

This process is critical to supporting the quality of the deliverables submitted by our team and meeting DWSS expectations with respect to deliverable content. Additionally this process allows for open and continual communication and high quality standards.

4.39 Project Kick-Off Meeting

4.39 PROJECT KICK OFF MEETING
4.39.1.1 A project kickoff meeting will be organized by the PMO and held with representatives from the State and the Implementation Contractor, QA contractor, and IV&V contractor after contract approval and prior to work performed. Items to be covered in the kick off meeting will include, but not be limited to:
A. Deliverable review process;
B. Determining format and protocol for project status meetings;
C. Determining format for project status reports;
D. Setting the schedule for meetings between representatives from the State and the Implementation Contractor to develop the detailed project plan;
E. Defining lines of communication and reporting relationships;
F. Reviewing the project mission;
G. Pinpointing high-risk or problem areas; and

H. Issue resolution process.

Deloitte works with the PMO to conduct a project kick off meeting after contract approval and prior to initiating work. This meeting lays the foundation for the project, and includes relevant representatives from the State of Nevada, Deloitte, and other key stakeholders such as the QA contractor, PMO contractor, and IV&V contractor.

SECTION HIGHLIGHTS

Kick Off Meetings Set the Stage for:

- ***Open and effective communication***
- ***Successful project outcomes***
- ***An understanding of project process, format, and deliverables***

Our approach to the following items are reviewed as part of the project kick off meeting: deliverable review process, format and protocol for project status meetings, format for project status reports, schedule for meetings between DWSS representatives and our team, communication and reporting relationships, review of project mission, identifying high-risk or problem areas, and the issue resolution process. It also covers project timelines, approach and methods, roles and responsibilities, and how the project will be executed. This meeting facilitates a successful working relationship between the DWSS project leadership and Deloitte in which expectations and procedures for the project are clearly communicated, understood by all parties, and successfully executed. Deloitte also conducts a phase kick off meeting before each major phase of the SDLC such as Elaboration and Construction.

Deliverable Review Process

Our team follows a structured deliverable review process that enhances quality and provides continuous engagement with DWSS team members and stakeholders. It is essential that each stakeholder understand and be engaged in the deliverable review process. Communicating this process at the onset of the project is an effective means for providing quality deliverables and project success. Please reference Section VI: 4.38 Deliverable Submission and Review Process for a detailed description of our proposed deliverable review process.

Format and Protocol for Project Status Meetings

Continuous and open communication regarding project progress is provided through weekly project status meetings. In the project kick off meeting, the format and protocol for project status meetings is clearly defined. Our team facilitates weekly status meetings with the DWSS project management team to review status and provide the opportunity for face to face communication. The outcomes of these meetings are documented in meeting minutes along with assigned action items and due dates. In addition to regularly scheduled status meetings, we also offer the opportunity for impromptu meetings that can be called when needed by either Deloitte or DWSS. Our team provides agendas and minutes for meetings organized by Deloitte and the PMO vendor is responsible for the meetings that are organized across vendor and DWSS stakeholders. The PMC tool is used to track and report on project status, and this information is readily available to DWSS and also presented in the status meetings.

Format for Project Status Reports

Status reports are an effective tool for detailing project progress and upcoming milestones. Our project status reporting approach provides transparency and keeps DWSS project leadership aware of the current status of the project at all times. Status reports provide a snapshot of the project's status and include metrics that convey a clear view of how the project is progressing, and the decisions and issues that need addressing. During the project kick off meeting, key stakeholders are informed of the format and frequency with which project status reports are provided. Throughout the project lifecycle, our team provides weekly status reports for DWSS project leadership.

Project performance indicators are defined in the status reports along with quantitative and qualitative data that present DWSS with an accurate assessment of the overall health of the project. Included in the report, our team provides a percentage complete, variance of percentage complete based on the approved project plan, and a status of in-progress tasks. We also highlight known or recently identified issues or risks. Status color coding is used within the report to indicate whether or not the tasks are on track, behind schedule, or at risk. Lastly, our team includes future tasks to be completed and the assigned team members responsible for completing each planned task. Our extensive child support system experience has enabled Deloitte to establish effective status reporting guidelines for these types of projects.

Schedule for Meetings between State Representatives and Deloitte

Prior to and at the project kick off meeting, our team works closely with DWSS project leadership to create a detailed DDI project plan and establish the schedule for meetings with representatives from DWSS for accomplishing tasks. This DDI project plan has information that is organized and presented to DWSS using Microsoft Project or an approved extract of that information. The plan can be integrated into the overall integrated project plan maintained by the PMO vendor. The DDI project plan and timeline is established based on effort estimation and activity sequencing.

Communication and Reporting Relationships

Communication is vital for project success. Through the use of project status reporting, project status meetings, and impromptu meetings called as needed, our team makes every effort to create a channel for open and continuous communication. In addition to reporting that is directly provided to the DWSS team, we also provide metrics available through the PMC tool. Our approach to communication and reporting enables transparency and facilitates project success. Throughout the life cycle of the project, our staff are available for and responsive to communication with the DWSS team and other stakeholders.

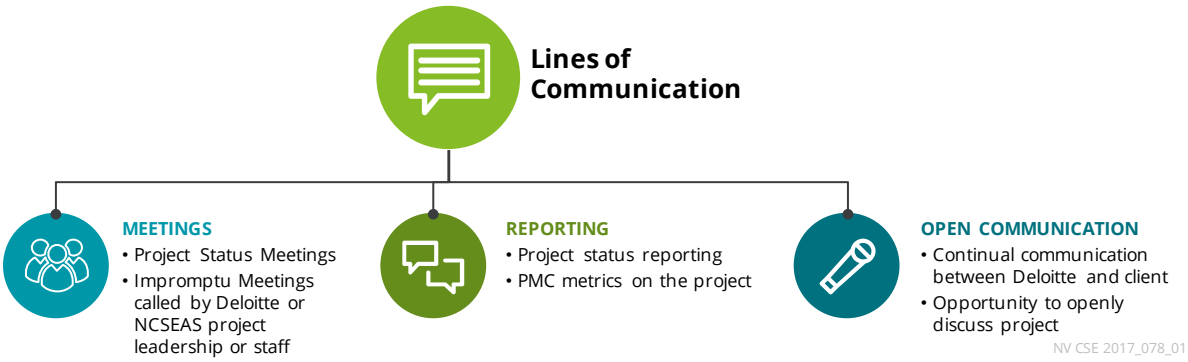


Figure 4-58. Lines of communication to be established for the NCSEAS project.

Review of Project Mission

Deloitte reviews the project mission with stakeholders during the project kick off meeting. Presenting the mission and focus at the onset of the project enables project stakeholders to be actively involved and informed regarding the primary objectives of the project. It is vital that everyone invested in the project has a clear understanding of the overall mission and objectives that DWSS is seeking to accomplish through the project.

Identifying High-Risk or Problem Areas

A risk is identified as a potential scenario that can take place, and must be monitored in order to mitigate the impact of the risk to the project. During the project kick off meeting we review a list of identified high-risk or problem areas that exist at the start of the project. These initial risks are monitored by our team in conjunction with DWSS project leadership and necessary mitigation and/or resolution steps are identified and updated as the project progresses. New or emerging risks are also identified during project execution and discussed as part of our regularly-scheduled status meetings.

We believe in taking a proactive approach to risk management and recognize that identifying, monitoring, and mitigating risks and problem areas is essential for project success. If a risk becomes a reality as a project issue, our team works to promptly identity and resolve the issue. The relationship between risks, issues, and change requests is depicted in the following graphic:

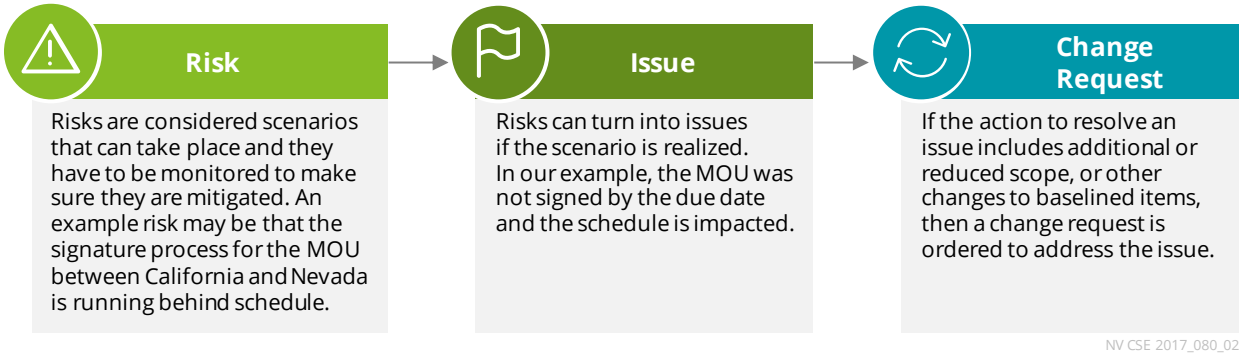


Figure 4-59. The progression for resolution/mitigation of risks that become project issues.

Issue Resolution Process

Our team provides an effective issue resolution process in order identify risks and issues and then effectively work to resolve these issues, if necessary through the change request process. As previously mentioned, we leverage the PMC tool for recording, tracking, managing and communicating issues. This tool can be accessed by NCSEAS project team members, including Deloitte, DWSS, other NCSEAS vendors and other DWSS stakeholders. The issue management process requires regular and effective communication. Our team conducts timely issue resolution meetings, and conducts regular checkpoints with stakeholders in order to discuss project issues and the resolution process.

SECTION VII
COMPANY BACKGROUND AND REFERENCES

You can trust that the history of success with our projects at DWSS is exactly what you can expect for this project and that experience naturally reduces risk and achieves efficiency. We encourage you to have in-depth conversations with our references to assess how we teamed with them, brought innovation, achieved successful implementation with their case workers, and succeeded in helping them improve support to the children and families they serve.

CSE system and CA CSE transfer experience

No other company has invested as much or stayed the course longer focused on the success of CSE than Deloitte's 35 years of commitment.

Recent experiences:

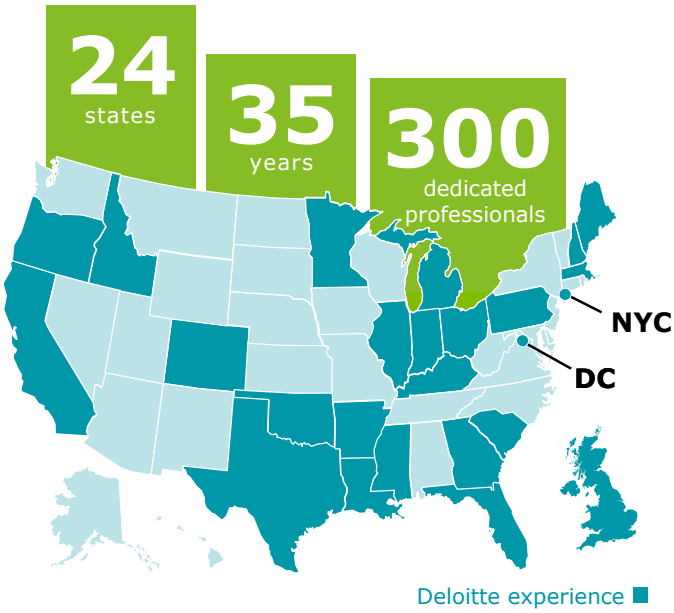
- ***CALIFORNIA.*** ***Ongoing enhancement, operations, and maintenance services for the California Child Support Enforcement System (CA CSE). The results are a rise in support establishment by seven percent; an improvement in current collections by seven percent; and an increase in arrears collections by five percent. During our time working with them, our team implemented 548 system fixes and maintenance change requests and performed 82 major enhancements.***
- ***FLORIDA.*** ***The most recent large state child support system (Florida CAMS) to achieve Federal certification by the Office of Child Support Enforcement. The program increased support order establishment by six percent in the three years since statewide implementation. This corresponded with a six percent increase in current support collections, and $149 million more per year in collections for children and families.***
- ***PENNSYLVANIA.*** ***Pennsylvania was the first — and only — child support program in the nation to achieve the required 80 percent on all of the federal child support performance measures. The state's performance improvements earned numerous awards for program performance and technology enhancements. Pennsylvania is known for its innovation in technology, including case management, data exchanges for enforcement, analytics, mobile, self-service, and forms and notice automation to improve program outcomes.***

QUOTE

"I think it's a large part of what distinguishes Deloitte staff — the sense of interest in what we do, their knowledge of it, and their ability to communicate and talk through what we think we need and what we're going to get."

Dan Richard,
Former IV-D Director, Commonwealth of Pennsylvania

Deloitte's Child Support Enforcement Practice



In addition, Deloitte brings Child Support experience from the United Kingdom and Canada

TECHNOLOGY

- Statewide CSE system implementation **ID, PA, FL, NH, MI, OR, CO, ID**
- Customer service solutions **PA, FL, KY, LA, OR**
- Document management solutions **TX, PA, FL, WI, OR**
- Data warehousing **PA, GA, FL, IN, KY, NH, OR**
- Data mining and predictive analytics **PA, KY, NYC, GA, KY, IN, FL, NH, Federal OCSE**
- Packaged solution implementations **FL**
- CSE system maintenance and operations **PA, CA, IN, FL, MI, NH**

STRATEGY

- Business process reengineering **TX, MN, IN, NYC, OH, PA**
- Technology strategy and roadmaps **TX, MA, MN, IN**
- Program performance analysis **PA, TX, FL, IN, NYC, MN**
- Program and policy review **MN, TX, PA**
- System planning and quality assurance services **AR**

ORGANIZATION

- Service delivery model assessments **MN, TX, UK, Ontario**
- Organizational assessment **TX, UK**

Leveraging Oregon's CA CSE transfer solution knowledge and experience

The Deloitte team for Nevada will leverage the knowledge and experience of the Oregon implementation of the CA CSE transfer solution to build the NCSEAS solution. That means we can take the ongoing work we've done and will do in Oregon and apply best practices and lessons learned to significantly improve efficiency. In addition, we are bringing project personnel who have experience transferring the CA CSE from Oregon to the NCSEAS Project.

A track record of success in Nevada

Members of the Deloitte team for the NCSEAS project already have hands-on experience and deep technical knowledge of your systems and working with your people. This experience, knowledge, and developed relationships with your staff will naturally reduce risk and improve efficiency. We have delivered every State of Nevada project on-time and on-budget with 100% success because we focus to get it right the first time. Even with the high level of complexity, you can expect the NCSEAS project to also be on-time, on-budget, and right the first time.

Deep National and Nevada resources

A longstanding commitment to — and an investment in — child support nationally is the essence of Deloitte's company background for this project. We have successfully built CSE solutions in states all over the US, providing eminence and knowledge we bring to Nevada. This experience has enabled us to build a deep bench of qualified professionals that understand the nuances of a child support program. These leaders in their field are hands-on practitioners who you will see on the ground in Nevada.

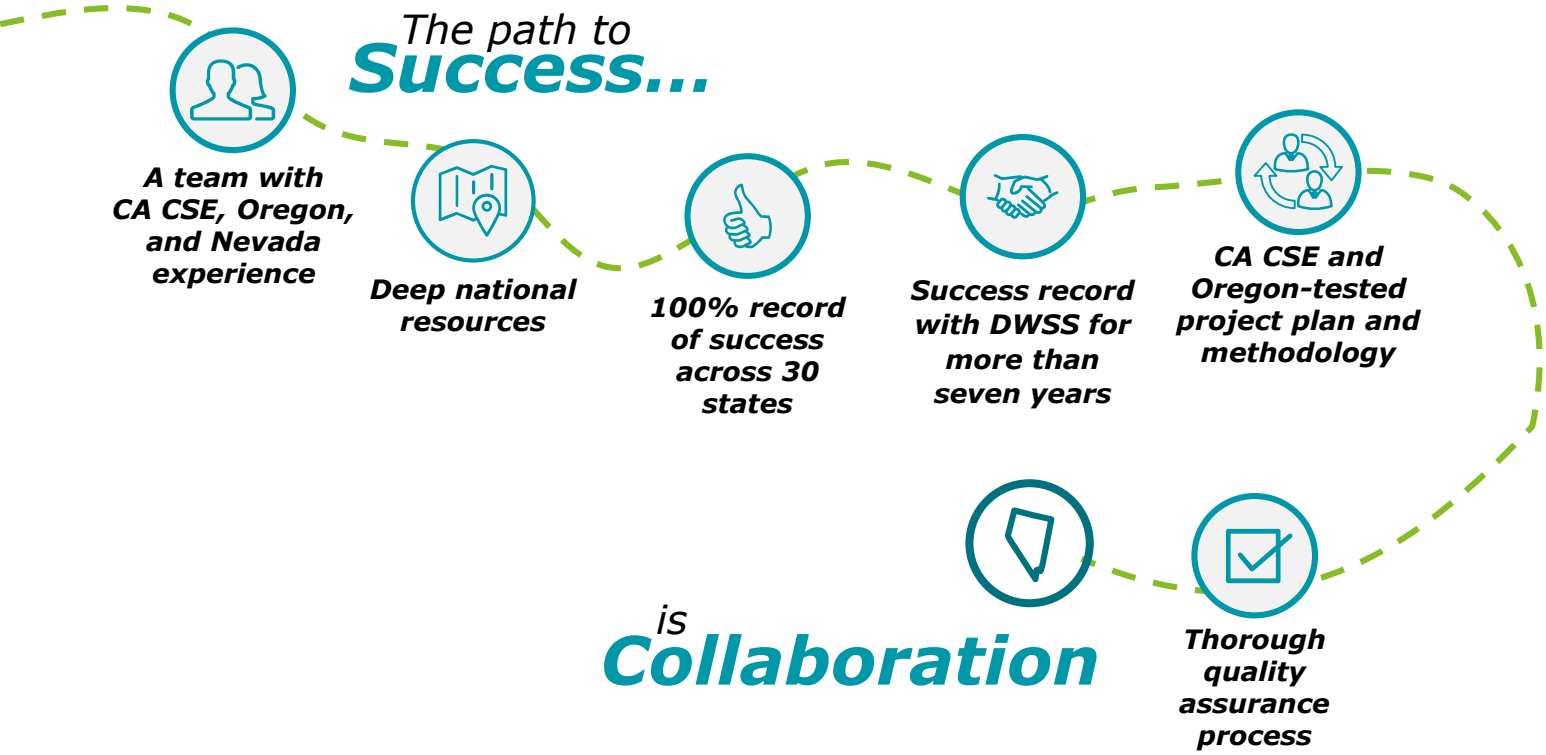
Deep National and Nevada resources (cont.)

- ***Rakesh Duttagupta** will lead the engagement, bringing the strong understanding of your business and your people gained through leading multiple projects in Nevada.*
- ***Kent Wheeler** will serve as the Deloitte NCSEAS Project Manager, bringing years of direct experience with transferring the CA CSE system to Oregon. Prior to Oregon, Kent managed the State of Florida Child Support project "CAMS" from design through Federal Certification and then years of production support and enhancements.*
- ***Dildar Marhas** has worked with Nevada for the last 7 years. He is intimately involved with DWSS technical and network infrastructure and will serve as the technical architect for the NCSEAS project.*
- ***Satish Mummlaneni** has worked with Nevada DWSS for 18 years with great insight to the existing data structures and relationships across the system. He played a key role in data conversion for DRA (Deficit Reduction Act) and will lead the data conversion effort for the NCSEAS project.*
- ***John White** is a 15-year veteran of the CSE system implementations in Pennsylvania and Ohio, directs Deloitte's national child support resources and ensure that the right resources from our work in California and Oregon are deeply involved in the NCSEAS project.*
- ***Margot Bean** is the former federal OCSE Commissioner and IV-D Director for the State of New York and for the Territory of Guam who will bring her national perspective on the federal certification process.*
- ***Keith Ketcher** led the original implementation for the California CSE solution (CA CSE).*
- ***Bill Strate** is the former IV-D Director for North Dakota with operational and system experience in multiple states.*

Our child support resources are backed by our robust technology and human capital practices, both of which have the in-house size and scale to keep the project flowing continuously through adoption. You will have no need for another vendor to provide services such as:

- ***TECHNOLOGY.** Deloitte's technology practice includes 30,200 practitioners globally, with 22,100 working in the US. Using proven methodologies, we provide technology solutions in the areas of development, enterprise connection, enterprise systems management and security, information dynamics, network, and architecture services.*
- ***CHANGE MANAGEMENT.** Deloitte has a rigorous approach to change management, helping your staff get up to speed and adopt confidently. Our collaborative approach reflects the absolute importance of engaging stakeholders to test assumptions, gain invaluable field insight, and delve into the present experience of impacted staff. Ongoing collaboration with key stakeholder groups early in the planning phase, and consistently as we move through training design and development, enables training that meets business needs, encourages buy-in from the critical stakeholders, and reduces the inherent risk of limited user acceptance.*

With an overall HHS company background spanning 35 years, Deloitte has never had a failed project in child support, integrated eligibility, child welfare, or child care human services across 30 of the country's largest state government agencies.



In this section, you will find a detailed description of Deloitte and the resources and experience we bring to the NCSEAS project.

Our Commitment to Nevada as a Firm

For the past seven years, Deloitte has worked hard to establish a strong connection to Nevada and its people. As we have continued projects in the state, we have reached out more and more to the community that has become home for a number of our practitioners. Over the past three years this has included working with Austin's House to bring Christmas to families in need each year, contributing to the 2017 holiday food drive with Food for Thought, and conducting our Deloitte IMPACT Day in Carson City since 2014. Deloitte's IMPACT Day is a day when Deloitte employees across the country leave the office and head out into their client communities for a full day of volunteerism designed to help nonprofit organizations more effectively make a difference in their local communities. In Carson City we connected with local charities helping them serve the local community. Among the organizations that receive our support are the Children's Cabinet Youth Center Beautification and F.I.S.H.

In concert with the connections that we have worked to establish within the community, we also strive to keep the work of our projects within the state. As such, if awarded the NCSEAS project, Deloitte plans to have the majority of goods and services provided for in the contract performed in Carson City, Nevada. The following includes more detailed information around our Company and the strength of our experience.

5.1 Vendor Information

5.1.1 Company Profile

5.1 VENDOR INFORMATION	
5.1.1	Vendors shall provide a company profile in the table format below.

Question	*Response*
Company name:	***Deloitte Consulting LLP***
Ownership (sole proprietor, partnership, etc.):	***Limited Liability Partnership***
State of incorporation:	***Delaware***
Date of incorporation:	***February 1996***
# of years in business:	***The history of our organization dates back to the 1989 merger of Deloitte, Haskins & Sells founded in 1845, and Touche Ross founded in 1947. A consulting division was established in 1995 – and renamed Deloitte Consulting LLP in 2003. Deloitte has had a presence in the State of Nevada since 1968 when it opened its first office in Las Vegas.***
List of top officers:	***Deloitte is a limited liability partnership managed by over 2,500 principals. As it relates to the NCSEAS project, the following are key top officers (principals):*** • ***Chairman and CEO, Consulting – Janet Foutty*** • ***State and Local Government Lead – Debbie Sills*** • ***Health and Human Services Sector Lead – Sundhar Sekhar***

Question	*Response*
	• ***Public Sector National Child Support Practice Leader – John White*** • ***State of Nevada Account Executive– Rakesh Duttagupta***
Location of company headquarters:	***30 Rockefeller Plaza, New York, NY 10112***
Location(s) of the office that shall provide the services described in this RFP:	***Deloitte plans to deliver the majority of the services for NCSEAS in its office in Carson City, Nevada. Deloitte has more than 100 U.S. locations, including offices in Carson City and Las Vegas in Nevada.***
Number of employees locally with the expertise to support the requirements identified in this RFP:	***We will be providing approximately 15 highly qualified practitioners with relevant expertise from our local Carson City office to provide the requested child support enforcement system replacement services.***
Number of employees nationally with the expertise to support the requirements in this RFP:	***Deloitte Consulting has more than 10,000 technology practitioners in the United States alone; 5,000 are dedicated State Government practitioners. In addition, Deloitte employs more than 300 practitioners with knowledge and expertise in child support enforcement, technology, training and implementation, as part of our national child support enforcement practice.***
Location(s) from which employees shall be assigned for this project:	***We plan to assign staff from our Nevada, California, Pennsylvania, Florida, Texas and Oregon projects and geographies, as well as from Deloitte's Development Center.***

Table 5- 1. Company Profile.

5.1.2 NRS 80.010

5.1 VENDOR INFORMATION
5.1.2 Please be advised, pursuant to NRS 80.010, a corporation organized pursuant to the laws of another state shall register with the State of Nevada, Secretary of State's Office as a foreign corporation before a contract can be executed between the State of Nevada and the awarded vendor, unless specifically exempted by NRS 80.015.

Deloitte is registered with the State of Nevada, Secretary of State's Office. A copy of our registration is provided on the following page.

SECRETARY OF STATE

STATE OF NEVADA

NEVADA STATE BUSINESS LICENSE

DELOITTE CONSULTING LLP

Nevada Business Identification # NV20081436471

Expiration Date: August 31, 2018

In accordance with Title 7 of Nevada Revised Statutes, pursuant to proper application duly filed and payment of appropriate prescribed fees, the above named is hereby granted a Nevada State Business License for business activities conducted within the State of Nevada.

Valid until the expiration date listed unless suspended, revoked or cancelled in accordance with the provisions in Nevada Revised Statutes. License is not transferable and is not in lieu of any local business license, permit or registration.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Great Seal of State, at my office on August 25, 2017

Barbara K. Cegavske
Secretary of State

You may verify this license at www.nvsos.gov under the Nevada Business Search.

License must be cancelled on or before its expiration date if business activity ceases. Failure to do so will result in late fees or penalties which by law cannot be waived.

5.1.3 Licensed in Nevada

5.1 VENDOR INFORMATION

5.1.3 The selected vendor, prior to doing business in the State of Nevada, shall be appropriately licensed by the State of Nevada, Secretary of State's Office pursuant to NRS76. Information regarding the Nevada Business License can be located at http://nvsos.gov.

Question	Response
Nevada Business License Number:	
Legal Entity Name:	

Is "Legal Entity Name" the same name as vendor is doing business as?

Yes		No	

If "No", provide explanation.

Question	Response
Nevada Business License Number:	***NV20081436471***
Legal Entity Name:	***Deloitte Consulting LLP***

Is "Legal Entity Name" the same name as vendor is doing business as?

Yes	***X***	No	

5.1.4 Licensing

5.1 VENDOR INFORMATION

5.1.4 Vendors are cautioned that some services may contain licensing requirement(s). Vendors shall be proactive in verification of these requirements prior to proposal submittal. Proposals that do not contain the requisite licensure may be deemed non-responsive.

Deloitte has been proactive in seeking to verify our compliance with the licensing requirements for services prior to our proposal submittal. Licenses required for this pursuit have been provided in Section IV: Vendor Licensing Agreements, as requested by the RFP.

5.1.5 Prior State of Nevada Contracts

5.1 VENDOR INFORMATION

5.1.5 Has the vendor ever been engaged under contract by any State of Nevada agency?

If "Yes", complete the following table for each State agency for whom the work was performed. Table can be duplicated for each contract being identified.

Yes	***X***	No	

Question	Response
Name of State agency:	***Division of Welfare and Supportive Services (DWSS)*** ***Project: SNAP/TANF Modernization***
State agency contact name:	***Steve Fisher, Administrator of DWSS***
Dates when services were performed:	***March 2015 to July 2016***
Type of duties performed:	***Project Management, Project Planning, Status Reporting, Requirements Specification, Business Rule Design and Development, Logical Data Model Design, Reporting Requirements, Security Requirements, System Design and Development, Integration interface Design and Development, Physical Data Model Design, Source-to-Target Data Mapping, Reporting Design Specifications, Testing, Implementation, End User Training, Post Implementation Support, Maintenance and Operations, Knowledge Transfer***
Total dollar value of the contract:	***$8M***

Question	Response
Name of State agency:	***Division of Welfare and Supportive Services (DWSS)*** ***Project: Health Care Reform Eligibility Engine***
State agency contact name:	***Steve Fisher, Administrator of DWSS***
Dates when services were performed:	***July 2012 to July 2017***
Type of duties performed:	***Project Management, Project Planning, Status Reporting, Requirements Specification, Business Rule Design and Development, Logical Data Model Design, Reporting Requirements, Security Requirements, System Design and Development, Integration interface Design and Development, Physical Data Model Design, Source-to-Target Data Mapping, Reporting Design Specifications, Testing, Implementation, End User Training, Post Implementation Support, Maintenance and Operations, Knowledge Transfer***
Total dollar value of the contract:	***$28M***

Question	Response
Name of State agency:	***Nevada State Public Charter School Authority (SPCSA)***
State agency contact name:	***Patrick Gavin, Director***
Dates when services were performed:	***May 2015 – September 2015***
Type of duties performed:	***Assistance in the investigation of financial and account records of selected Charter Schools and related matters. This investigation also involved interviews of staff, board members, and others. We prepared reports with our observations, procedures performed, and findings***
Total dollar value of the contract:	***$185k***

Question	Response
Name of State agency:	***Division of Welfare and Supportive Services (DWSS)*** ***Project: Supported State Based Marketplace(SSBM) Transition***
State agency contact name:	***Steve Fisher, Administrator of DWSS***
Dates when services were performed:	***June 2014 to December 2015***
Type of duties performed:	***Project Management, Project Planning, Status Reporting, Requirements Specification, Business Rule Design and Development, Logical Data Model Design, Reporting Requirements, Security Requirements, System Design and Development, Integration interface Design and Development, Physical Data Model Design, Source-to-Target Data Mapping, Reporting Design Specifications, Testing, Implementation, End User Training, Post Implementation Support, Maintenance and Operations, Knowledge Transfer***
Total dollar value of the contract:	***$15.7M***

Question	Response
Name of State agency:	***Division of Welfare and Supportive Services (DWSS)*** ***Project: AMPS***
State agency contact name:	***Steve Fisher, Deputy Administrator of DWSS***
Dates when services were performed:	***February 2010 to December 2012***
Type of duties performed:	***Project Management, Project Planning, Status Reporting, Requirements Specification, Logical Data Model Design, Reporting Requirements, Security Requirements, System Design and Development, Integration interface Design and Development, Physical Data Model Design, Source-to-Target Data Mapping, Testing, Implementation, End User Training, Post Implementation Support, Maintenance and Operations, Knowledge Transfer***
Total dollar value of the contract:	***$3.8M***

Question	Response
Name of State agency:	***Division of Welfare and Supportive Services (DWSS)*** ***Project: ACCESS NV***
State agency contact name:	***Steve Fisher, Deputy Administrator of DWSS***
Dates when services were performed:	***May 2011 to November 2011***
Type of duties performed:	***Project Management, Project Planning, Status Reporting, Requirements Specification, System Design and Development, Testing, Implementation, Post Implementation Support, Knowledge Transfer***
Total dollar value of the contract:	***$1.2M***

Question	Response
Name of State agency:	***Nevada Department of Motor Vehicles (DMV)*** ***Project: GENESIS***
State agency contact name:	***Ginny Lewis, Former Project Manager Nevada DMV (GENESIS Project)***
Dates when services were performed:	***April 1998 to November 1999***
Type of duties performed:	***Design, build, and implement a new, integrated Department of Motor Vehicle application***
Total dollar value of the contract:	***$12.5M***

5.1.6 Past State of Nevada Employee

5.1 VENDOR INFORMATION

5.1.6 Are you now or have you been within the last two (2) years an employee of the State of Nevada, or any of its agencies, departments, or divisions?

If "Yes", please explain when the employee is planning to render services, while on annual leave, compensatory time, or on their own time?

If you employ (a) any person who is a current employee of an agency of the State of Nevada, or (b) any person who has been an employee of an agency of the State of Nevada within the past two (2) years, and if such person shall be performing or producing the services which you shall be contracted to provide under this contract, you shall disclose the identity of each such person in your response to this RFP, and specify the services that each person shall be expected to perform.

Yes		No	***X***

5.1.7 Disclosures

5.1 VENDOR INFORMATION

5.1.7 Disclosure of any significant prior or ongoing contract failures, contract breaches, civil or criminal litigation in which the vendor has been alleged to be liable or held liable in a matter involving a contract with the State of Nevada or any other governmental entity. Any pending claim or litigation occurring within the past six (6) years which may adversely affect the vendor's ability to perform or fulfill its obligations if a contract is awarded as a result of this RFP shall also be disclosed.

Does any of the above apply to your company?

If "Yes", please provide the following information. Table can be duplicated for each issue being identified.

Yes		No	***X***

Deloitte Consulting LLP, as one of the leading providers of consulting services, is routinely involved in complex consulting projects, often involving large-scale systems implementations and multiple service providers. Although we are justifiably proud of our record of client satisfaction, such projects do occasionally give rise to disagreements over contract requirements, and we are occasionally, though rarely, involved in litigation with clients pertaining to our consulting services. We are confident that such matters will not affect our ability to provide consulting services, nor will they affect our ability to serve DWSS in connection with this proposed engagement.

5.1.8 Insurance Requirements

5.1 VENDOR INFORMATION
5.1.8 Vendors shall review and provide if awarded a contract the insurance requirements as specified in Attachment D, Insurance Schedule for RFP 3462.

We have reviewed the insurance requirements specified in RFP Attachment D, Insurance Schedule for 3462, and have provided an exception to the insurance requirements in Section XI: Other Informational Material, 11.2 Conditions and Provisions.

5.1.9 Company Background/History

5.1 VENDOR INFORMATION
5.1.9 Company background/history and why vendor is qualified to provide the services described in this RFP. Limit response to no more than five (5) pages.

Deloitte has over 45 years' experience providing consulting services to government and commercial clients throughout the U.S. and abroad, and is one of the most respected professional service organizations in the United States. Today, we are the largest global consulting firm, with 107 offices and over 64,884 employees in the United States. Within consulting we organize our capabilities through three primary service —Technology, Strategy & Operations, and Human Capital.

This breadth of disciplines and services enables us to bring innovative solutions that leverage each of these disciplines for the clients we serve. Our experience enables us to bring you the desired skills in system transfer, customization, implementation, and maintenance support. In addition to our Health and Human Services (HHS) and Child Support Enforcement (CSE) experience, there are many other capabilities and experiences that Deloitte brings which align with the requirements of the RFP. As an example, the system security services are provided through Deloitte Advisory.

Deloitte Consulting LLP is the legal entity that will be primarily responsible for delivering the requirements set forth in this RFP. Deloitte's Advisory subsidiary will also be providing system security expertise. The following figure further illustrates Deloitte's organizational structure, lines of authority and responsibility, and how the NCSEAS project fits within the Deloitte structure. The groups of our organization specifically involved with the NCSEAS projects are highlighted in green in the following figure.

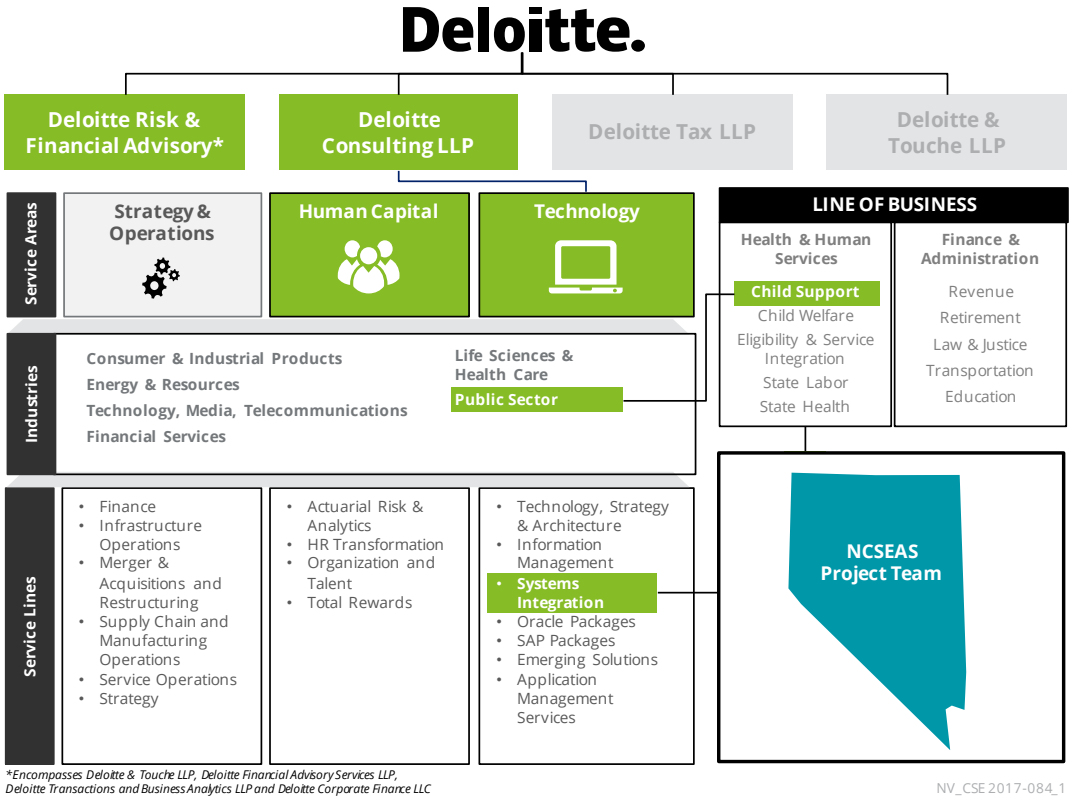


Figure 5- 1. Deloitte organizational structure.

HHS Experience

Within the Public Sector industry specialization, our State Government practice has a strong background serving Health and Human Services (HHS) clients. Over the past 45 years, our organization has continuously worked in this space — including Child Support, SNAP, TANF, Medicaid, State Children's Health Insurance Programs, and healthcare reform provisions. We specialize in the HHS market. This experience provides us with a deep knowledge of the core skills and abilities needed to develop, implement, and maintain HHS systems in a manner that mitigates risk. Deloitte is a recognized leader in providing HHS solutions in 46 states and territories with 45 years of experience in building, implementing, maintaining, operating and enhancing solutions. Over this period, we have worked together with our clients to successfully and timely design, build, implement, deploy, maintain and operate their portfolio of applications, while continuously enhancing and modernizing them. This success has included the six projects that we have done in Nevada within the past seven years, described in Section VII: 5.1.5 Prior State of Nevada Contracts.

Deloitte is at the forefront of technology modernization and innovation, actively helping HHS agencies find a path forward to achieving strategic objectives. For example, Deloitte supported 26 States in meeting ACA mandated deadlines, and we are currently conducting MARS-E and IRS compliance auditing. Deloitte brings these experiences and much more to DWSS. The following figure illustrates our extensive U.S. HHS experience.

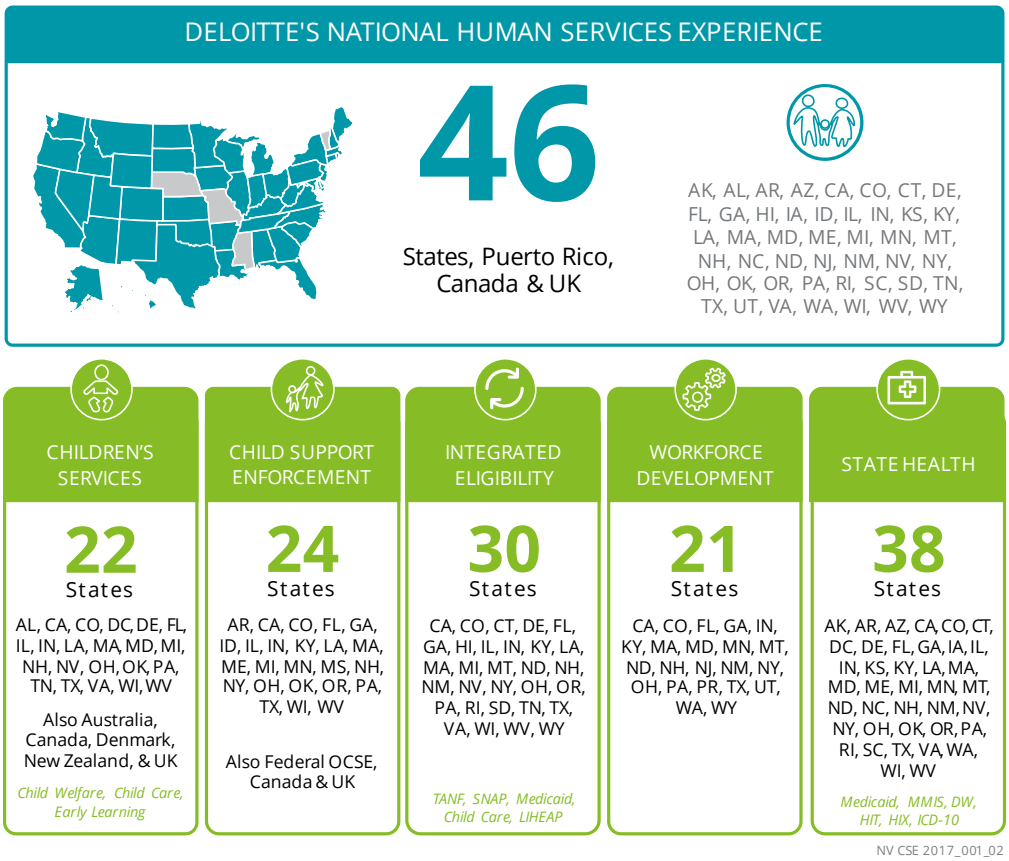


Figure 5- 2. Deloitte's National HHS Experience.

Deloitte Child Support Enforcement Practice

Our continuous presence within the Child Support Enforcement (CSE) marketplace is unmatched amongst our competitors. During the past 35 years Deloitte has partnered with 24 states and the federal government to design, develop, implement, and maintain large-scale, federally certified CSE systems. We have teamed successfully with CSE agencies throughout the US, the UK and Canada, to implement new systems, enhance existing systems, and introduce innovative solutions in the areas of people, process, and technology.

We have conducted business process reengineering and developed technology roadmaps for five states, giving us deep insight into modern child support process and system requirements. Deloitte has become a CSE market leader by understanding how automated systems can enable and drive efficient and proactive CSE case management. We are currently serving three of the largest and most complex child support agencies in the country: Florida, Pennsylvania, and California.

Deloitte is currently providing services to the Oregon Department of Justice for the transfer and customization of the CA CSE system. Deloitte also implemented Florida's Child Support Automated Management System (CAMS), and Pennsylvania's Child Support Enforcement System (PACSES), both of which are comparable in size and scope to Nevada's system and services requirements.

In addition, our teams have worked with many of the most complex local jurisdictions including Los Angeles County, Philadelphia and Allegheny Counties, New York City, and Cuyahoga County in Ohio. Our experience in large jurisdictions similar to Clark County, Nevada provides our team with a first-hand understanding of the unique challenges counties will have related to CSE system modernization, and how to mitigate against any potential risks or barriers to Nevada's success. The following table provides the benefits Nevada gains from Deloitte's strengths.

Strength of Deloitte	*Benefits to Nevada*
Experience in projects of the magnitude, nature, complexity and scope of the NCSEAS project	• ***An experienced team completing projects on time and on budget*** • ***An organized team with the ability to leverage project management knowledge and assets, and bring accelerators to enhance the phases of the project***
Experience with the transfer system CA CSE	• ***Learning curve is shorter because of our role as the maintenance and operations contractor of the California transfer system, CA CSE. We are intimately familiar with not only the system framework, but also with the enhancements made since federal certification over nine years ago*** • ***Deloitte has over 100 people that know the California CA CSE system which will improve the likelihood of successful delivery of NCSEAS*** • ***Our knowledgeable staff leverages many years of combined child support experience***
Experience with using CA CSE as the basis of a new child support system	• ***A faster successful proof of concept (POC) stand-up because we use lessons learned in standing up the POC in Oregon, should that ultimately be relevant to Nevada*** • ***An understanding of the various CA CSE Pages that better guides the Joint Application Design and Joint Technical Design sessions***
Deloitte is a financially stable organization	• ***A firm with advisory services and system integration experience with the financial capacity to sustain a number of large projects*** • ***Ability to support projects of a similar size and scale to NCSEAS***

Strength of Deloitte	*Benefits to Nevada*
	• *Significant experience in simultaneously managing numerous multi-million dollar projects* • *A firm that has disciplines dedicated to each aspect of the scope of services for the NCSEAS project including software development, reporting, training, project management, infrastructure, testing, and security specialists*
Deloitte is a market leader providing HHS expertise	• *Access to the entire breadth of client services across a wide range of HHS clients provides you insights into other state leading practices for large-scale system replacement implementations* • *Deloitte has done system projects and integrated all human service programs including Integrated Eligibility, Child Welfare, Children Services, Child Support, Labor, Motor Vehicles, Financial, and Court systems*
Deloitte is the largest professional services firm in the world	• *A full bench of professionals that can be scaled up and down to meet Nevada's current and future needs* • *Ability to leverage the depth of Deloitte's offerings, capabilities, and experts to meet current and future service needs* • *Access to our nationally known HHS, child support, security, human capital, and analytics professionals who lead public sector change with new ideas, approaches, and innovations*
National child support enforcement practice market offering	• *Access to our national CSE thought leaders, including former IV-D Directors Margot Bean (Federal OCSE, New York and Guam), China Widener (Ohio), Bill Strate (North Dakota), and Deloitte's National CSE Practice Leader John White, for child support technology innovation, policy and program innovation, business intelligence, and Deloitte's CSE toolkit* • *Our support and leadership of national CSE associations (NCSEA, WICSEC, and ERICSA) provides workshop opportunities for our clients, with full post-conference briefings through end of project*
Diverse public and private sector client community network	*Inclusion in our HHS client network which includes the following services:* • *National point of view documents* • *Peer advisory meetings with our clients* • *National client learning conference calls* • *National vendor relationship network* • *Cross program innovations* • *DBriefs, Deloitte's ongoing WebEx Series for Technology Executives*

Table 5- 2. Features of Deloitte and Benefits to Nevada.

Deloitte's Technology Practice

The following table shows how our SI practice addresses the RFP requirements.

Capability	*Relevant Activities*	*Relevant Tasks*
Program Management, Functional, and Test	• *Functional* • *Performance Testing* • *Program Management* • *Testing*	• *User Acceptance Testing and User Training* • *Technical Training and Knowledge Transfer* • *Project Management* • *System Testing* • *Implementation* • *Certification* • *Enhancements* • *Transition Services*
Systems Development	• *Architecture and Design* • *Custom Development*	• *Post-implementation Warranty Services* • *Operations and Maintenance* • *System Security Plan* • *Design* • *Construction* • *Enhancements*

Capability	*Relevant Activities*	*Relevant Tasks*
Solution and Platform Integration	• ***Business Process Management*** • ***Platform Integration*** • ***Solution Integration***	• ***Application Life Cycle Management and Source Code Management*** • ***Project Facility*** • ***Data Conversion and Migration***

Table 5- 3. Our Capabilities to Meet the RFP Requirements.

Deloitte's Human Capital Practice

Our human capital practice focuses on providing strategies for enhancing individual and organizational performance and productivity. The practice has worked with numerous government clients to coordinate comprehensive training, organizational change management and implementation services for State agencies undertaking similar modernization efforts throughout the US. Our training and implementation team members bring knowledge and skills from these similar successful system modernization experiences to design and deliver both a training program and implementation plan that meets the needs of each of the groups impacted by the NCSEAS implementation, and supports the successful adoption of the NCSEAS solution. In addition, these team members have experience delivering an incremental knowledge transfer method that has been successful in other similar modernization efforts, including CSE modernization. It allows State project resources to gradually learn the skills needed to maintain the system once it has been implemented.

Deloitte's Advisory Services

Deloitte's Advisory function helps clients create and protect value by taking a risk-intelligent approach to managing technology and business risks. Our security and privacy practice, which is a component of Advisory, helps DWSS address pervasive information and technology risks such as cyber security, identity and access management, data security breaches, operational resilience and system outages, privacy, and application integrity. We have worked closely with the CSE agencies in Oregon, Florida, Pennsylvania, and California to address the special requirements of protecting federal tax information (FTI) and personal information (PI) inherent to automated child support systems. As a result, we have in-depth knowledge of the array of security related standards. This includes IRS Publication 1075, which documents requirements for handling FTI and PI, NIST Special Publication (SP) 800-53 (Security Controls), SP 800-111 (Storage Encryption Technologies) SP 800-52, 800-77 and 800-113 (encryption processes for data in motion) and Federal Information Processing Standard (FIPS) publications. Our Security Risk Management Framework has a common repository of information security requirements containing authoritative sources from more than 300 different laws and industry sources, including IRS 1075, NIST SP 800 and HIPAA as applicable for the NCSEAS solution.

5.1.10 Length of Time Providing Services

5.1 VENDOR INFORMATION

5.1.10 Provide a brief description of the length of time vendor has been providing services described in this RFP to the public and/or private sector.

Deloitte Consulting has over 45 years of comparable health and human services experience and 35 years of comparable CSE experience. Deloitte has shown repeatedly that we have the technology, refined processes, and experience to implement multiple HHS solutions of this size and scale at the same time.

Our recent successes in HHS include helping 24 states, including Nevada, achieve their Affordable Care Act goals. State integrated eligibility systems such as the Texas Integrated Eligibility Redesign System, New Mexico's Automated System Program and Eligibility Network, Michigan's Bridges, and Montana's Healthcare Information and Montana's Eligibility System are proof that Deloitte is capable of deploying large, integrated, federally compliant systems within tight time frames.

Deloitte's CSE portfolio includes some of the most challenging and successful programs in the country: Oregon, California, Pennsylvania, Florida, Texas, Indiana, Michigan, Kentucky, Wisconsin, and New York City. Child support enforcement programs that face the most difficult issues turn to Deloitte to assist with their business needs, implement new systems, and achieve top performance. The following figure depicts the CSE agencies we have worked with during the past 35 years.

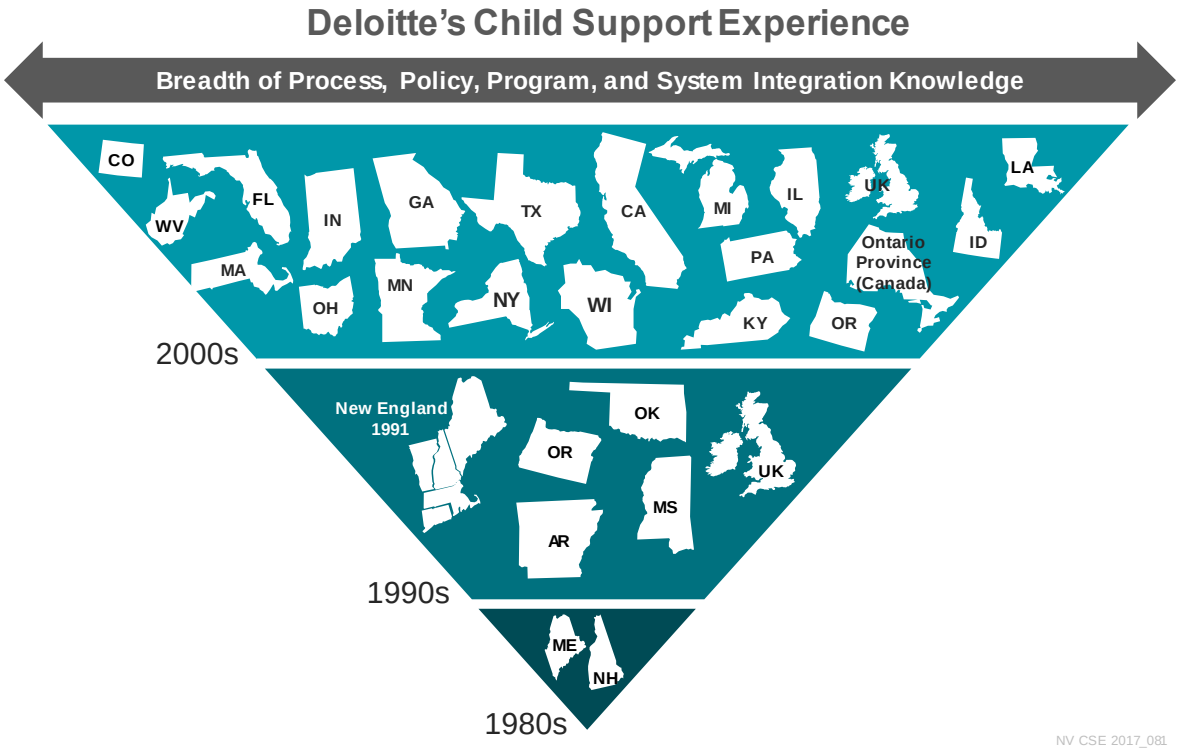


Figure 5- 3. Deloitte's Child Support Enforcement Experience through the Decades.

Our Child Support Enforcement Experience

Deloitte implemented the first integrated CSE system in the country in New Hampshire in 1991, and has led the way in CSE technology innovations ever since. We designed, developed, and implemented the latest large-state CSE system to be fully certified by the federal Office of Child Support Enforcement, Florida's Child Support Automated Management System (CAMS), in 2013. Our long history shows we are the team that can deliver a CSE system that reflects your vision.

Deloitte has first-hand knowledge of the current state of the CA CSE system, which is the NCSEAS transfer base. Deloitte has been primarily responsible for CA CSE maintenance and operations since 2011 and has delivered over 70 maintenance builds with over 1200 system fixes, 400 change requests, and 180 major system enhancements. In the last few years, we used CA CSE as the transfer base to Oregon for its new CSE system, Origin. We successfully stood up a proof of concept for use in Joint Application Development and Joint Technical Development sessions. This gave our team deeper insight into the CA CSE system in the context of transferring to another state.

Since 1991, Deloitte has designed, developed, implemented, or maintained a number of large-scale, federally certified CSE systems, teaming successfully with numerous agencies to transfer and implement new systems, enhance existing systems, and introduce innovative changes in the areas of people, process, and technology. We have applied this combination of business and technical knowledge in implementations across the country, including maintenance, enhancement, and operations for the CSE systems in California, Pennsylvania and Florida. This demonstrates Deloitte's continued commitment to improving CSE case management systems by leveraging modern technology.

Deloitte's nationwide network of CSE professionals has assisted county, state, federal, and international governments in implementing large-scale systems integration, including testing and code conversion, as well as business process assessment projects for the past three decades.

Deloitte's large-scale system implementation success is recognized nationally, as several projects have been selected as National Association of State Chief Information Officers (NASCIO) award finalists. This includes Kentucky's Kynect health insurance exchange, New Mexico's Unemployment Insurance Tax and Claims systems, Washington's Healthplan Finder in the Digital Government to Citizen category, and Connecticut's ConneCT integrated eligibility system in the Data, Information and Knowledge Management category.

In Pennsylvania, where we have been collaborating with the CSE program for more than 25 years, our efforts have continually brought innovations to their system and business operations. Our enhancements have enabled Pennsylvania to be the first CSE program in the nation to achieve over 80 percent on all federal CSE performance measures.

Pennsylvania has continued to improve this high level of performance through the most recent federal fiscal year, and remains the only state to exceed 80 percent on all federal measures. The table that follows documents improvements Pennsylvania has made during the last ten completed federal fiscal years on several key federal performance metrics.

Performance Measure	*FY06*	*FY09*	*FY16*	*Total Increase*
Establishment of Orders Percentage	***84%***	***89%***	***91%***	***7%***
Collections on Current Support	***74%***	***81%***	***84%***	***10%***
Collections on Past-due Support	***75%***	***82%***	***85%***	***10%***

Table 5- 4. Federal Performance Metrics in Pennsylvania.

The Pennsylvania CSE program has earned numerous awards for their program performance. The following table provides a sample of the most recent. We bring the staff, innovations and lessons learned from our work in Pennsylvania to Nevada on day one to help improve the State's CSE performance measures.

Award	*Year*
NASCIO Award - Outstanding Achievement in the Field of Information Communications Technology Innovations; Recognition Award Winner for Automated Outbound Text Messages	***2014***
Harvard Kennedy School of Government - Ash Center "Bright Idea" for Payment Score Calculator	***2012***
Center for Digital Government - Horizon award for the Payment Score Calculator and Long Term Service Award	***2012***
Computer World Honors - Gold medal for Predictive Modeling and Performance Improvement Module (PIM)	***2012***
NASCIO Award. Outstanding Achievement in the Field of Improving State Operations; Recognition Award Winner for Child Support Data Exchanges	***2011***
NASCIO Award - Outstanding Achievement in the Field of Data, Information and Knowledge Management; Recognition Award Winner for Pennsylvania Child Support Portal	***2010***
Office of Child Support Enforcement (OCSE) - Exemplary Leadership Award to Dan Richard, Director, Bureau of Child Support Enforcement, Pennsylvania	***2009***
Office of Child Support Enforcement (OCSE) - Commissioner's Award for Innovative Technology for PIM	***2009***
Office of Child Support Enforcement (OCSE) - Outstanding Program Performance Award	***2008***
Computer World Honors - Gold medal for Domestic Relations Section (DRS) Business Intelligence Dashboard	***2007***
Office of Child Support Enforcement (OCSE) - Commissioner's Award for Innovative Technology for Domestic Relations Section (DRS) Dashboard	***2006***
Office of Child Support Enforcement (OCSE) - Outstanding Program Performance Award	***2005***
Computer World Honors - Gold medal for Child Support Self Service Web site	***2005***

Table 5- 5. Pennsylvania Child Support Awards.

Pennsylvania is just one of the states where our work resulted in improved child support program performance. Some examples include:

<u>Florida.</u> Our partnership with Florida to build their CSE system (CAMS), resulted in a modern statewide system that is easy to use, highly automated, gives only cases needing a decision to caseworkers, includes business intelligence to suggest the next enforcement action, and is easy to modify. This has enabled Florida to improve performance as seen in the following table:

Performance Measure	*FY06*	*FY16*	*Increase*
Establishment of Orders Percentage	***74%***	***83%***	***9%***
Collections on Current Support	***54%***	***63%***	***9%***
Collections on Past-due Support	***64%***	***70%***	***6%***

Table 5- 6. Federal Performance Metrics in Florida.

Florida has improved 25 places in the national federal performance rankings, from 37th overall in FY2010 to 12th overall in FY2016. In addition, over 85% of ordered cases received a collection in FY2016. We simultaneously reduced Florida's ongoing maintenance expenditures.

California. ***Deloitte assumed maintenance and operation responsibilities of CA CSE in 2011. Over the past six years, our nearly 100 professionals assigned to the project have delivered over 70 maintenance builds with over 1200 system fixes, 400 change request and 180 major system enhancements. California continues to improve performance on the key federal performance measures, while improving its cost effectiveness rating.***

Performance Measure	*FY10*	*FY16*	*Increase*
Establishment of Orders Percentage	***82%***	***90%***	***8%***
Collections on Current Support	***56%***	***67%***	***11%***
Collections on Past-due Support	***60%***	***67%***	***7%***

Table 5- 7. Federal Performance Metrics in California.

With Deloitte's partnership in transforming and improving the child support services by maintaining and enhancing CSE systems and applications, California received a received a 2016 'Best of California' award from the Center for Digital Government for the VIOLA online CSE Application.

Indiana. ***Deloitte has had a long and successful relationship with the Indiana CSE program, ranging from system maintenance (2004-2009) to a business process analysis project that included the development of a systems and process implementation plan. The plan identified 25 key CSE program projects and gathered more than 15,000 requirements for their new CSE automated case management system (2009-2016).***

Our collaborative efforts with Indiana have improved performance of the existing system in managing and reporting case and participant data, and through the business process analysis project, realized cost savings, improved federal reporting, and more efficient business processes.

During our tenure, the Indiana CSE program consistently improved its national rankings across all the federal performance measures, moving from 39th in the country to 6th in overall performance on CSE measures.

Performance Measure	*FY04*	*FY16*	*Increase*
Establishment of Orders Percentage	***70%***	***94%***	***24%***
Collections on Current Support	***51%***	***65%***	***14%***
Collections on Past-due Support	***56%***	***73%***	***17%***

Table 5- 8. Federal Performance Metrics in Indiana.

As described in the following table, we provide systems replacement, business process improvement, systems maintenance and operations, systems planning and development, and enhanced customer services to a number of CSE programs that are of a similar magnitude, nature, complexity and scope to the NCSEAS project. This includes not only full system replacement projects, but also projects designing, developing, and implementing document generation.

Deloitte's Child Support Systems Projects	*Description of Project*	*Timeframe*
State of Oregon Department of Justice Origin System	• ***Multi-year contract to provide Oregon with project management, requirements, design, development, implementation, conversion, and training services for the Origin CSE system*** • ***Transfer of systems with California's CA CSE as the core, modifying to meet Oregon's requirements. Includes intake, establishment and financial management functions, paternity establishment, payment processing and fund distribution, enhanced compliance functionality, customer education and assistance, self-assessment, and federal and operational reporting*** • ***Conducted Joint Application Design sessions and Joint Technical Design sessions resulting in over 2200 design documents*** • ***Project moved into the system testing phase in August 2017***	***System Implementation: September 2015 to Present***
State of Florida Department of Revenue (DOR) Child Support Automated Management System (CAMS)	• ***Multi-year contract to provide Florida with project management, requirements, design, development, implementation, conversion, and training services for the CAMS Phase I and II System Replacement projects*** • ***CAMS Phase I provided master data, document generation, case management, location, compliance, enforcement, and call center capabilities, IVR, document generation, and transition to state staff*** • ***CAMS Phase II functionality included additional functionality to the CAMS Phase I system as well as intake, establishment, financial management functions, paternity establishment, payment processing and fund distribution, enhanced compliance functionality, customer education and assistance, self-assessment, and federal and operational reporting*** • ***Conducted 250 JAD sessions*** • ***Achieved federal certification in 2013*** • ***Ongoing assistance provided for operations and maintenance tasks***	***System Implementation: February 2012*** ***Operations and Maintenance: July 2012 to Present***
Commonwealth of Pennsylvania Department of Public Welfare, Pennsylvania Child Support Enforcement System (PACSES)	• ***During initial implementation, from 1991-2001, Deloitte provided child support project management, quality assurance, training, and implementation services. During this time, Deloitte successfully managed PRWORA certification of the system*** • ***Since 2002 Deloitte has served as the PACSES application vendor providing ongoing system enhancement and maintenance, including project management support, application design and development, operations and technical support, user support services, subject matter expertise, batch operations, help desk, and innovations development and deployment*** • ***Enhancements include data warehouse, reporting, business intelligence, dashboards, predictive analytics, a***	***System Implementation: October 1997 to February 1999*** ***Enhancement, Maintenance and Operations: 2002 to Present***

Deloitte's Child Support Systems Projects	*Description of Project*	*Timeframe*
	Performance Improvement Module (PIM) to help focus child support enforcement actions by case workers, document management and imaging, customer portal, text messaging, and mobile self service • ***Currently executing the first phase of PACSES modernization, transitioning the legacy mainframe application to an open systems platform. This includes the complete transfer of functionality for the Case Intake, Case Management, Locate and Intergovernmental business areas to a solution with a services-based architecture and contemporary user experience, along with required legacy data conversion and implementation support services***	
State of California ***Child Support Enforcement System*** ***(CA CSE)***	***Deloitte's provides enhancement, and operations and maintenance services in support of the CA CSE including:*** • ***Activities necessary for the successful operation of the CA CSE System, including providing technical architecture and infrastructure knowledge related to CA CSE hardware and software systems*** • ***Activities necessary for the support of CA CSE System Infrastructure, such as network servers and desktops, including those distributed throughout California in local CSE agencies*** • ***Performing activities necessary for the support of CA CSE System Help Desk support*** • ***Over 1200 system fixes and maintenance change requests and over 180 major enhancements*** • ***Enhancements include a mobile solution, the Virtual Interactive On Line Application (VIOLA), eFiling and eReporting, a Web solution to support TouchPay kiosks, document workflow, and Agile methodology transformation services***	***May 2011 to Present***
State of Georgia Department of Human Resources ***Child Support Services***	• ***Deloitte developed a data warehouse and dashboards to allow CSE staff to manage cases and measure/track federal CSE performance measures*** • ***Integrated and interfaced the CSE system with multiple information systems and loaded that source data into a single data warehouse and then extracted data to create effective performance reports and dashboards*** • ***Provided ad hoc reporting for CSE functions and implemented integrated security, federal and operational reporting, technical and functional training, and help desk*** • ***Developed 157 and 34a federal reporting, fatherhood program reporting, enforcement, and locate analysis reporting*** • ***Drill-down performance dashboards for workers and program executives including federal performance measures, operations and tracking as well as over 150 additional reports***	***March 2010 to January 2011***
Commonwealth of Kentucky ***Cabinet for Families and Children*** ***Department for Income Support***	• ***Kentucky engaged Deloitte to create a CSE customer web portal, a locate portal, and a data analytics tool to improve reporting to enable Kentucky to proactively manage their CSE program. This was accomplished by a complex interplay of different systems, customers, and technologies***	***August 2011 to May 2012***

Deloitte's Child Support Systems Projects	*Description of Project*	*Timeframe*
Child Support Enforcement	• ***Customer and locate portal solutions innovatively leverage new technologies for ease of use and the highest levels of security, privacy and accessibility*** • ***Business Intelligence platform provides completely new functionality using dashboards, predictive analytics, Federal and operational reports, ad hoc querying and drill down capabilities*** • ***Proactive performance monitoring across all measures and the capability to drill down to all levels of the agency, providing deeper insights into the characteristics of CSE cases for better case management and strategic targeting of resources***	
State of Indiana ***Department of Child Services*** ***Bureau of Child Support ISETS Maintenance, Business Process Analysis (BPA) and INvest Requirements***	• ***Successful enhancement, operations and maintenance of the legacy Indiana Child Support Enforcement System (ISETS) leading to improved performance*** • ***Conducted a Business Process Analysis of the policies, processes, organization, and technology solutions which resulted in 25 recommended projects*** • ***The BPA project resulted in the implementation/completion of ten of the recommended projects supported by the Deloitte team*** • ***Gathered requirements for the new CSE system, INvest, which conducted over 225 Requirement Joint Application Design sessions, developing more than 15,000 requirements for 83 business process models, 83 use cases and 283 services across the spectrum of CSE from case initiation, case management, establishment, locate, financials and enforcement*** • ***Developed requirements for enterprise content management, interfaces, reporting and a customer service portal***	***Operations and Maintenance: October 2004 to October 2009*** ***BPR: July 2009 to May 2011*** ***Requirements: May 2011 to December 2015***
State of Texas ***Office of Attorney General (OAG) – Child Support***	• ***The Deloitte team successfully documented the "As-Is" and "To-Be" business processes, assessed the child support organizational structure, developed performance metrics for future business process, provided a technology blueprint, and delivered long-term strategy and roadmap for project implementations*** • ***Over 100 recommendations were identified for technology, organization, and process improvements to improve the State's CSE performance. Examples of key deliverables include:*** – ***Enterprise Content Management (ECM) Assessment*** – ***Document management prototype*** – ***SOA readiness assessment*** – ***120 JAD sessions to develop functional requirements*** – ***Identity and access management requirements*** – ***Enterprise reporting system requirements*** – ***Product selection*** – ***Technical environment build-out reference architecture*** – ***SOA prototype and a client playbook comprised of Plans, tool guides, checklists, SDLC templates and Standards and Guidelines as the project method***	***January 2007 to August 2009***
Commonwealth of Massachusetts ***Department of Revenue (DOR) –***	• ***Deloitte was engaged by the Commonwealth to assist in their efforts to replace, unify, and enhance the COMETS CSE system (COMETS, COMETS IM, COMETS FM) by***	***August 2008 to February 2016***

Deloitte's Child Support Systems Projects	*Description of Project*	*Timeframe*
Child Support Enforcement (CSE)	***designing and developing the new and enhanced "COMETS HD" system*** • ***Deloitte developed the COMETS CSE Roadmap for Child Support Technology, which laid the foundation of the migration approach and identified the future state projects. Deloitte also collected high-level system requirements and drafted the Request for Response (RFR) and the Vendor assessment, and established the Program Management Office (PMO) processes*** • ***Deloitte also led and delivered PMO services for the COMETS HD program. In this role, Deloitte worked collaboratively with the DOR/CSE Program Management team and the COMETS HD System Integrator in order to facilitate the successful design, development, and implementation of the COMETS HD system***	

Table 5- 9. Deloitte Child Support Project Experience.

5.1.11 Financial Information

5.1 VENDOR INFORMATION	
5.1.11	Financial information and documentation to be included in accordance with Section 11.5, Part III – Confidential Financial Information.
5.1.11.1	Dun and Bradstreet Number
5.1.11.2	Federal Tax Identification Number
5.1.11.3	The last two (2) years and current year interim:
A.	Profit and Loss Statement
B.	Balance Statement

We have provided our financial information and documentation, as requested by the RFP, in Part III: Confidential Financial Information of our Response.

5.2 Subcontractor Information

5.2 SUBCONTRACTOR INFORMATION

Subcontractors are defined as a third party, not directly employed by the contractor, who shall provide services identified in this RFP. This does not include third parties who provide support or incidental services to the contractor.

Yes		No	*x*

Deloitte is not utilizing subcontractors for this project. There are staffing requirements for support or incidental services which occur from time to time in Deloitte's client engagements. To address these requirements, Deloitte's project teams obtain staff augmentation services from Contingent Workforce Services (CWS), a component of our Deloitte Human Resource (HR) model specializing in contractor procurement. CWS adopts a strategic sourcing model and runs a centralized contractor procurement process.

CWS has access to a wide range of Tier 1 vendors to support or incidental resources who have experience on CA CSE. Through this centralized sourcing, staffing, and payment process managed by CWS, Deloitte is able to address our clients' requirements.

5.3 Business References

We are proud of the work we have accomplished alongside our clients in the design, development, implementation, process improvements, enhancements, and maintenance of large-scale, federally certified CSE systems. In all projects, we successfully team with CSE agencies to transfer and implement new systems, new technology innovations, and the associated changes across people, process, and technology.

Our references demonstrate Deloitte's ability to embrace our clients' vision for the future and accomplish technology and business outcomes in a collaborative way.

The best judge of our capabilities are our clients. Ask your peers, including Oregon, with whom Deloitte is currently working to transfer and enhance the CA CSE solution. Your peers are best positioned to provide the most credible testimonials for our ability to perform on the NCSEAS Project. We are confident that they will provide insights into the unique value that Deloitte has delivered to their organizations and the value Deloitte will deliver to the Division of Welfare and Supportive Services (DWSS). Additionally, with our record of successful implementations serving Nevada citizens, Deloitte can predict issues, obstacles, and challenges unique to the state and knows first-hand how to mitigate them.

DISTINGUISHING FACTORS

- ***Deloitte brings the most current experience with CA CSE, the transfer system for NCSEAS***
- ***We bring up-to-date experience transferring CA CSE to Oregon***
- ***Deloitte brings innovation experience from our 25 years with Pennsylvania's CSE system (PACSES) and their business operations, making them consistently the top-performing state***
- ***We designed, developed, and implemented the most recent large state CSE system (Florida CAMS) to achieve Federal OCSE Certification***

5.3.1 Three Business References

5.3 BUSINESS REFERENCES
5.3.1 Vendors shall provide a minimum of three (3) business references from similar projects performed for private and/or public sector clients within the last seven (7) years.

In the following table, we provide a summary of the services that we provide for the required three references. We chose the references from numerous recently completed projects that demonstrate our ability to perform the Scope of Work described in your RFP.

Business Reference	*Summary of Services Provided*
Client Name: ***CALIFORNIA DEPARTMENT OF CHILD SUPPORT SERVICES (DCSS)*** ***Project Name: California Child Support Enforcement System (CA CSE)***	***Since assuming M&O contract for the new CA CSE in 2011, the Deloitte team has gained an in-depth knowledge and understanding of the CA CSE system and has significantly improved the system by delivering over 70 maintenance builds with over 1200 system fixes, 400 change request and 180 major system enhancements. Services include analysis, design, development, and testing of application changes. Coordinated with DCSS staff in the managing and upgrade of 25 development, testing and production environments***

Business Reference	*Summary of Services Provided*
	In addition, the Deloitte team collaborates with the DCSS staff to create or maintain multiple documents similar to the deliverables outlined in this statement of work. ***Significant enhancements include an award-winning on-line application (VIOLA), mobile application, e-filing, intergovernmental case processing improvements, and an electronic document workflow*** ***As a result of our successful partnership, we signed another two (2) years extension with DCSS in April of 2016***
Client Name: ***COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF PUBLIC WELFARE (DPW), BUREAU OF CHILD SUPPORT ENFORCEMENT*** ***Project Name: Pennsylvania Child Support Enforcement Systems (PACSES)***	***PACSES provides automation to improve caseworker efficiency and to introduce additional self-service functions for an increasingly technology-savvy case population. Deloitte has worked with Pennsylvania to manage the overall design, development, implementation, and enhancement of the automated child support system (PACSES) in various roles since 1991 and is currently providing enhancement and M&O services. Modernization initiatives completed as part of Deloitte's support of PACSES include the Child Support Web site (CSWS), Data Warehouse, Performance Improvement Module (PIM), Director's Performance Dashboard, Form generation capabilities, Predictive Analytics, SMS Text Messaging, Customer Service solutions such as on-line application and Mobile App, and Document Imaging. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform. This includes the complete transfer of functionality for these business areas to a solution with a services-based architecture and contemporary user experience, along with required legacy data conversion and implementation support services***
Client Name: ***FLORIDA DEPARTMENT OF REVENUE (DOR) Child Support Enforcement Division*** ***Project Name: Child Support Automated Management System (CAMS)***	***Deloitte successfully managed the phases of the System Development Lifecycle (SDLC) in planning, requirements gathering, design, develop, and implementation of a two-phased project for a new federally certified child support system (CAMS) directly similar in size, complexity and scope to NCSEAS. CAMS Phase I provided master data, document generation, case management, location, compliance, enforcement, and call center capabilities, IVR, document generation, and transition to state staff. CAMS Phase II included intake, establishment and financial management functions, paternity establishment, payment processing and fund distribution, enhanced compliance functionality, customer education and assistance, self-assessment, and federal and operational reporting. The CAMS integrated system went live in January 2012. In August 2013, CAMS became a federally certified child support system.*** ***Deloitte continues to provide services through 2017.***

Table 5- 10. Deloitte's Three Business References.

In the remainder of this section, we illustrate our proven ability to perform the services requested by DWSS and provide detailed business reference information for these three references.

5.3.2 Business References Demonstrated Experience

5.3 BUSINESS REFERENCES	
5.3.2	Business references shall show a proven ability of:
5.3.2.1	Developing, designing, implementing and/or transferring a large scale application with public and/or private sectors;
5.3.2.2	Developing and executing a comprehensive application test plan;
5.3.2.3	Developing and execute a comprehensive training plan;
5.3.2.4	Experience with comprehensive project management;
5.3.2.5	Experience with cultural change management;
5.3.2.6	Experience with managing subcontractors; and
5.3.2.7	Development and execution of a comprehensive project management plan.

For more than 45 years, Deloitte teams have successfully delivered large-scale complex integrated solutions across the HHS systems, including child support enforcement and integrated eligibility systems, which are similar in magnitude, nature, complexity, and scope to NCSEAS.

Our selected business references demonstrate our expertise in CSE, business process redesign, requirements gathering, fit-gap analysis, system design, integration, development, implementation, testing, training, operations and maintenance, certification, and transition services and our ability to manage complex projects to meet established schedules and budgets. To deliver high quality automated system transfer or replacement projects on time and within budget, we combine technical expertise, CSE program knowledge, and proven project management skills.

We have chosen three business references out of our extensive CSE experience in 24 states, the UK, and Canada that most closely align with your requested services. In the following table, we have mapped our three selected business reference initiatives to the scope of services as defined in RFP Section 5.3.2.

Services Requested by Nevada	*California CSE System*	*Pennsylvania PACSES*	*Florida CAMS*
Developing, designing, implementing and/or transferring a large scale application with public and/or private sectors	✓	✓	✓
Developing and executing a comprehensive application test plan	✓	✓	✓
Developing and execute a comprehensive training plan	N/A	✓	✓
Experience with comprehensive project management	N/A	✓	✓
Experience with cultural change management	N/A	✓	✓

Services Requested by Nevada	*California CSE System*	*Pennsylvania PACSES*	*Florida CAMS*
Experience with managing subcontractors	✓	✓	N/A
Development and execution of a comprehensive project management plan	N/A	✓	✓

Table 5- 11. Projects Meeting Reference Requirements.

5.3.3 Attachment E, Reference Questionnaire

5.3 BUSINESS REFERENCES

5.3.3 Vendors shall submit Attachment E, Reference Questionnaire to their business references.

5.3.4 It is the vendor's responsibility to ensure that completed forms are received by the Purchasing Division on or before the deadline as specified in Section 9, RFP Timeline for inclusion in the evaluation process. Reference Questionnaires not received, or not complete, may adversely affect the vendor's score in the evaluation process.

5.3.5 The State reserves the right to contact and verify any and all references listed regarding the quality and degree of satisfaction for such performance.

Deloitte has provided RFP Attachment E, Reference Questionnaire to each identified business reference with instructions for each reference to complete their respective forms and submit the completed forms directly to the Purchasing Division by September 20 before 4:30 pm PST.

All references have been provided before the 4:30 pm PST deadline on September 20.

It is acknowledged that the State reserves the right to contact and verify any and all references listed regarding the quality and degree of satisfactions of performance.

5.4 Vendor Staff Skills and Experience Required

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

The vendor shall provide qualified personnel to perform the work necessary to accomplish the tasks defined in Section 4, Scope of Work. The State shall approve all awarded vendor resources. The State reserves the right to require the removal of any member of the awarded vendor's staff from the project.

Most companies only have one key knowledge. **Deloitte has all three.**

= Nevada Deloitte Team

NV CSE 2017_002_07

Deloitte provides people with a blend of project management, technical, and functional and organizational change knowledge along with the core competencies and skill sets to successfully transfer and implement NCSEAS. To support your child support enforcement program vision, we have assembled a team of individuals that collectively have experience and success in the following key areas:

- ***Knowledge and experience with the California CSE transfer system (CA CSE)***
- ***Transferring CA CSE to another state***
- ***Experience with the current Nevada IT environment and system (NOMADS)***
- ***Experience with large scale child support technology implementations***
- ***Success with federal child support enforcement certification***
- ***Leading child support enforcement system, process, and policy practices***
- ***Client service commitment***

"I think it's a large part of what distinguishes Deloitte staff or many of them — the sense of interest in what we do, their knowledge of it, and their ability to communicate and talk through what we think we need and what we're going to get."

Dan Richard, former IV-D Director
Commonwealth of Pennsylvania,
Department of Human Services

The following table highlights the key attributes of a successful team and the individual set of experiences and skills we bring with our team to support success.

Key Attribute	*Deloitte Experience and Knowledge*
Current experience with maintaining and enhancing the California CSE System	***A critical attribute to the NCSEAS project success is team experience and knowledge with the components of the transfer system. Our team understands CA CSE better than any other vendor does. No other vendor has the opportunity to have developed the in depth knowledge we have obtained over the last six years. Using our experience with the current state of the CA CSE system, our team understands the aspects of CA CSE that align with Nevada's business needs as well as areas to be enhanced to meet your needs.***
Conducting a transfer and modification of CSE to another state	***Our intimate knowledge of the CA CSE child support system coupled with our understanding that business process reengineering activities and fit gap analysis is an important component in determining requirements is critical to providing a solution to meet Nevada's needs. We leveraged our proven business process reengineering tools and methodology previously used in Indiana while conducting Joint Application Design sessions to transfer CA CSE to Oregon. This gives us a deep insight into the existing functionality of the CA CSE system.***
Experience in the NOMADS Environment	***We bring extensive understanding of Nevada's DWSS technical and program environment, specifically with NOMADS, the legacy public assistance and child support enforcement system. Our knowledge and understanding of NOMADS kick-starts and guides our planning, design, development, and implementation activities. As detailed in their resumes, our team brings extensive system experience in NOMADS. We also bring an understanding of both the environment and the culture of the DWSS for the past seven years.***
Experience implementing large-scale CS systems	***Inherently complex, child support enforcement systems require experienced leaders who understand both technology and the child support enforcement program to navigate the transfer implementation intricacies. Our team not only possesses this understanding but also dedicates their careers to implementing and managing large-scale child support systems. Our key resources possess:*** • ***67 years combined experience delivering large complex systems*** • ***34 years combined experience designing and implementing large child support systems in Oregon, California, Florida, Texas, Michigan, and New Mexico*** • ***Deep knowledge and experience of not only the current state of CS CSE, but also transferring CA CSE to Oregon***
Understanding the federal certification process	***Ultimately, the goal is to achieve federal certification of NCSEAS. Our team brings years of experience in the certification of child support enforcement systems and our staff have been involved with nine successful federal certifications (CA, OH, PA, CA, MI, FL, TX, NY, Guam). Margot Bean, our Certification Lead, brings an intimate knowledge and expertise from her experience as federal OCSE Commissioner, three recently completed child support system certifications, and advising the current certification activities in Oregon. This provides a jump start to tracing how the current CA CSE system meets federal certification requirements for NCSEAS. Additionally, our proposed team comprises five members with Florida CAMS project experience, which is the most recent large state CSE system to be federally certified. All of our team members are trained in federal certification requirements and many have gone through the certification process with a state or states.***
Innovative ideas from recent child support implementations	***Our understanding of not only your business goals, but also the most modern child support enforcement system solutions, allows you to more effectively meet your vision. Our team's involvement in the most recent and on-going system implementations in Oregon, Florida, California, Texas, and Pennsylvania brings knowledge to enhance and supplement the innovative requirements for NCSEAS. We bring industry leading innovation and ideas around your goals to the system enhancement conversations and planning that is grounded in base system functionality. For example, our staff's achievement includes:***

Key Attribute	*Deloitte Experience and Knowledge*
	Driving innovative use of business intelligence in the Florida CAMS system ***Recognized leaders for driving innovation in Pennsylvania and Kentucky where the team delivered solutions in customer service, mobile messaging, business intelligence, dashboards, and data exchanges*** ***Delivering a customer portal for citizen with mobile capabilities and eDocument services, implementing new interfaces with various partners for electronic transfer of child support information, and enhancing the scanning and document management system in California*** ***Concerted effort to "think automation first" in Oregon Origin JAD sessions, focusing SMEs on automating the processes as defined in the detailed requirements rather than continuing existing manual processes***
Core values of client service and commitment	***You need a core management team with a shared set of core values around client service delivery and an unwavering commitment to the State of Nevada and this project. Our team works well together, and has a demonstrated ability to work with all the other partners that make up a successful child support system implementation, including the state and PMO, SMEs, and other vendors involved with DWSS. We connect with and build trusted relationships that will last long after the NCSEAS project is completed.***
Commitment to the State of Nevada	***We have a history of commitment to the State of Nevada and DWSS. The majority of our work on NCSEAS will be done in Carson City. Some development and testing will be done offsite. Deloitte contributes to a number of volunteer activities in Carson City and Reno during our annual Impact Day and holidays. Deloitte practitioners assigned to the NCSEAS project become a part of the community by participating in a number of community charity events, including our yearly day of community service.***

Table 5- 12. Deloitte's Key Staff Attributes to Lead to NCSEAS Success.

The key attributes detailed above are features that we believe are critical for the personnel devoted to this project, and differentiators that Deloitte brings to DWSS and the NCSEAS project. Throughout the remainder of this section, we describe our key staff and team members, the attributes of the team we propose, and how our team members exceed your expectations and requirements.

Overview of Deloitte Project Staff for NCSEAS

We reviewed your requirements and assessed how to best structure an organizational framework and roles that support the project.

The organization chart that follows includes key team members and their leadership roles within the project. It also includes other roles not defined by the RFP as key that we have identified as critical to the success of the NCSEAS implementation.

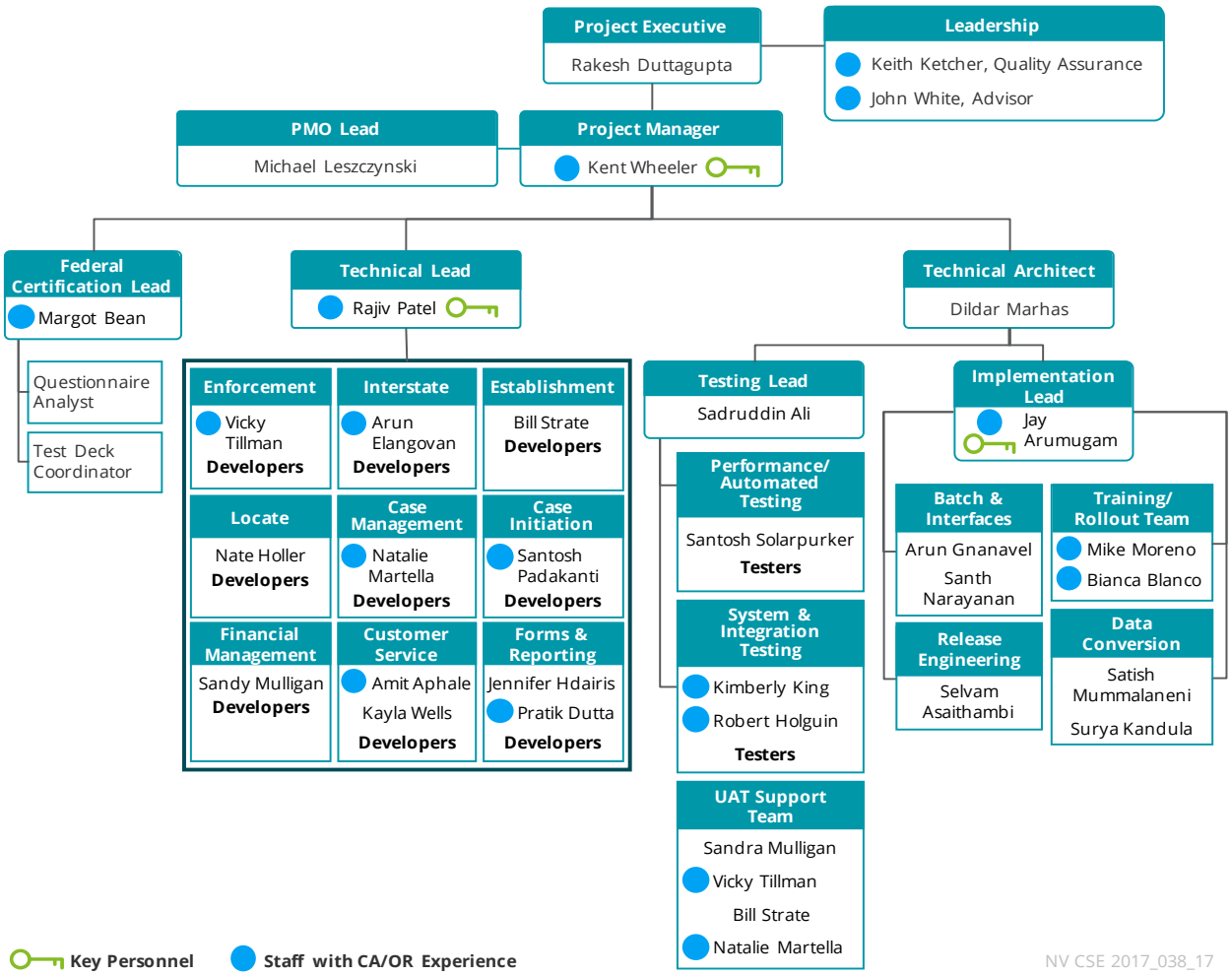


Figure 5- 4. Proposed Project Team Including Leadership and Advisors.

Deloitte will make every effort to deliver the key personnel above. When the project start date is determined, we will determine the finalized key staff above.

CA CSE System Experience

Based on Nevada's desire to transfer the CA CSE system, we leverage our resources from the team that delivered, enhanced, and currently maintains CA CSE. This staff participated in the resolution of more than 1,200 system fixes and executed more than 180 major enhancements over the past six years:

- ***Rajiv Patel, Technical Lead***
- ***Kim King, System and Integration Testing***
- ***Robert Holguin, System and Integration Testing***
- ***Keith Ketcher, Quality Assurance***

CA CSE Transfer Experience

Over the past two years, these team members have been working with Oregon to transfer and modify the CA CSE system into a new CSE system called Origin. They bring vital first-hand experience of this process:

- ***Kent Wheeler, Project Manager***
- ***John White, Executive Advisor***
- ***Margot Bean, Federal Certification Lead***
- ***Jay Arumugam, Implementation Lead***
- ***Arun Elangovan, Interstate***
- ***Vicky Tillman, Enforcement, UAT, Training***
- ***Natalie Martella, Case Management, UAT***
- ***Amit Aphale, Customer Service***
- ***Pratik Dutta, Forms and Reporting***
- ***Bianca Blanco, Training and Rollout***
- ***Santosh Padakanti, Case Initiation***
- ***Mike Moreno, Training and Rollout***

Experience in the Nevada IT (NOMADS) Environment

Having worked with you in Nevada on a number of systems including NOMADS, our team includes people who understand your information technology direction and preferences:

- ***Rakesh Duttagupta, NCSEAS Project Executive***
- ***Dildar Marhas, Technical Architect***
- ***Satish Mummalaneni, Data Conversion Lead***
- ***Jennifer Hdaris, Forms and Reporting***
- ***Santosh Solapurkar, Performance and Automated Testing***
- ***Selvin Asaithambi, Release Engineering***
- ***Santh Narayanan, Batch and Interfaces***
- ***Surya Kandula, Data Conversion***
- ***Arun Gnavanel, Batch and Interfaces***
- ***Santosh Padakanti, Case Initiation***

Experience Implementing Large Scale Child Support Systems

Rounding out the team are members who have deep child support enforcement system experience with requirements development, testing, implementation, and training in a variety of states. This includes:

- ***Bill Strate, Establishment and Intake, UAT***
- ***Sandra Mulligan, Financial Management, UAT, Training***
- ***Nathan Holler, Locate***
- ***Kayla Wells, Customer Service***
- ***Sadruddin Ali, Testing Lead***

Expertise in the Federal Certification Process

All of our team members have a working knowledge of the federal Certification Guide and understand its importance during any system effort. The following members have gained a deep expertise in the Guide from leading or supporting the federal certification process in a variety of states.

- ***Kent Wheeler, Project Manager***
- ***John White, Executive Advisor***
- ***Keith Ketcher, Quality Assurance***
- ***Margot Bean, Federal Certification Lead***
- ***Jay Arumugam, Implementation Lead***
- ***Sandra Mulligan, Financial Management, UAT, Training***
- ***Bill Strate, Establishment and Intake, UAT***
- ***Robert Holguin, System and Integration Testing***
- ***Vicky Tillman, Enforcement, UAT, Training***

In addition to the above practitioners with CA CSE, Nevada systems, and/or other CSE experience, we have also selected key personnel and project leaders based on the qualifications you identified in the RFP and our understanding of how the right leadership and relationships support such an important and impactful project. Our team works hand in hand with DWSS leadership from project initiation, through design and implementation, to maintenance and operation. Our project team members – including the key staff and advisors described in the following – meet or exceed the experience and background required to make this project successful.

Deloitte Leadership, Key Staff, and Advisors		
Personnel and Role	***Relevant Experience to DWSS***	***Years of Experience***
Rakesh Duttagupta, PMP ***Project Executive*** 	***Rakesh Duttagupta is a Principal with over 16 years of management consulting and systems integration experience, of which 10 years have been dedicated to Health and Human Services. He has provided project management services for a number of significant eligibility automation projects in the States of California, Texas, Nevada, and Wyoming. With project experiences in all phases of system development that is relevant to the NCSEAS project, Rakesh understands the significance of service quality as well as project communication and transparency. His experience managing large-scale public assistance projects involving multiple agency stakeholders and system interfaces means Rakesh is well suited to take on your business challenges. In addition to his systems implementation background, Rakesh has extensive experience in business process redesign, change management, and the facilitation of strategic visioning exercises. He has worked with numerous clients to establish a framework for guiding their organizations through business process changes and technology adoption. Rakesh has always committed to provide project transparency to project stakeholders through the utilization of formal meetings and informal touch points. Rakesh brings thought leadership and industry knowledge that will directly benefit Nevada with from day one.***	***16 Years***
John White, PMP ***Executive Advisor*** 	***John has over 17 years of experience with system implementation projects for child support programs and other HHS clients. He has 25 years of experience assisting public and private sector clients define and achieve their organizational visions through IT enablement and program modernization.*** ***John has extensive experience with large-scale systems projects, managing change across and within organization. John has been the Project Executive for the past ten years in Pennsylvania Child Support leading teams to deliver innovation in case management, imaging, self-service, data warehouse, predictive analytics, employer management, and mobile solutions. John has served as a project advisor and executive for child support clients including Oregon, Indiana, Massachusetts, Kentucky, and Ohio.***	***25 Years***
Keith Ketcher, PMP ***Quality Assurance*** 	***Keith has over 25 years of experience leading large, complex HHS systems projects. He led the solution development for CA CSE during his tenure with Accenture. He led the application development team with a peak headcount exceeding 200 people, and the maintenance and operations efforts after successful statewide deployment of CA CSE in 2008. Keith has successfully led a variety of HHS engagements and large teams in high-pressure situations with aggressive deadlines, including child support system implementations in Wyoming and Mississippi.***	***25 Years***

Deloitte Leadership, Key Staff, and Advisors		
Kent Wheeler *Project Manager* 	***Kent currently serves as the Project Manager for the Oregon Origin CSE system implementation, where he leads a team that is transferring and modifying the CA CSE system to meet Oregon's requirements. Prior to the Origin project, he was the Project Director of the Florida CAMS Project for almost seven years, leading the team to successful federal certification. He has spent the past 10 years focusing on helping state and tribal governments develop and maintain high performing CSE programs that are responsive to customer needs and federally compliant. With 30 years of experience with large-scale system implementations, he works effectively with both technical and non-technical teams and clients.***	***30 Years***
Rajiv Patel, PMP *Technical Lead* 	***With over 17 years of large system implementation, Rajiv Patel has been the Application Architect for CA CSE since 2011. He Leads a team of technical architects, developers, and data modelers to design and implement enhancements for the CA CSE system. In this role he has deep technical knowledge of the current CA CSE system, and has led the design and implementation effort for over 180 major enhancements and over 1,200 system fixes and maintenance change requests.***	***17 Years***
Jay Arumugam, PMP *Implementation Lead* 	***Jay has nearly 20 years in project management, software development, delivery management, and account management. He has focused on child support system design, development, implementation, and enhancements for 18 of those 20 years. For the past year, Jay has led Application Development for the Oregon Origin worker portal. In addition to Oregon Origin, Jay designed and implemented large-scale child support applications in Texas, Michigan, and New Mexico.***	***20 Years***
Michael Leszczynski *PMO* 	***Michael brings extensive experience in leading large public sector clients through major technology transformations, including as the PMO on the California OSI project where he implemented a change control process. Working in the technology industry for more than six years, Michael is known for his proficient knowledge of the entire software development life cycle (SDLC).***	***7 Years***
Margot Bean, PMP *Certification Lead* 	***As a leader within the national child support community, Margot has the unique experience of working at the federal, state and local levels of child support enforcement. She brings her extensive, hands-on knowledge of child support enforcement and the federal certification process to the team as a child support advisor and the federal certification lead. Additionally, she brings experience from the design phase of the transfer of the CA CSE system to Oregon.***	***30 Years***

Table 5- 13. Deloitte's Team Roles and Years of Experience.

Access to Experienced Incidental Support Staff

Deloitte has access to more than 10,000 technology practitioners and over 5,000 public sector practitioners. In addition, Deloitte will utilize their internal service called Contingent

Workforce Services (CWS). CWS is a team within Deloitte Consulting that was established in 2003 to streamline and standardize procurement of third party contractor resources, obtain competitive pricing, and mitigate risks when staff augmentation for support or incidental resources are needed for Deloitte projects. CWS maintains a large database of more than 700 suppliers in its custom web portal that can easily be accessed to address the project's staffing needs.

In the following section, we provide a summary of the key project staff and additional individual team members as identified in the RFP. A detailed resume for each is provided in Section VIII: Attachment H – Proposed Staff Resume(s), as requested by the RFP.

5.4.1 Project Manager Qualifications

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

The Project Manager assigned by the awarded vendor to the engagement shall have:

5.4.1.1 A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector of which two (2) years' experience within the last five (5) years has been in the Child Support Enforcement environment;

5.4.1.2 A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;

5.4.1.3 A minimum of two (2) years of experience with systems analysis and design;

5.4.1.4 A minimum of two (2) years of experience with systems development and implementation in a Service Oriented Architecture (SOA) environment;

5.4.1.5 Managed at least two (2) projects within the past five (5) years that involved designing business processes and procedures and developing new systems to support the new business processes;

5.4.1.6 Managed at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders;

5.4.1.7 A minimum of two (2) years of experience using Microsoft Project or similar software;

5.4.1.8 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and

5.4.1.9 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.

spotlight

Kent Wheeler

Role for NCSEAS Project:
Project Manager

Years of Experience	Experience Relevant to Nevada
At Deloitte..... 9 years, 11 months ***Child Support Enforcement .....9 years*** ***Large Scale System Implementation 30 years***	• ***Oregon Origin*** • ***Florida CAMS***

Experience Narrative

Key Relevant Experience	Education and Certifications
Recent Federally Certified Child Support Enforcement Implementation (FL CAMS) ***CA CSE system transfer Project Manager (Oregon Origin)*** ***Child support enforcement processes and technology***	• ***Randolph Macon College, Ashland VA*** • ***ITIL certified***

Meeting Project Manager Qualifications		
5.4.1.1 A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector of which two (2) years' experience within the last five (5) years has been in the Child Support Enforcement environment;	***30 years of project management experience*** ***10 years of experience in the last 10 years in the CSE environment***	EXCEEDS
5.4.1.2 A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;	***10 years within the last 10 years managing SA and development projects***	EXCEEDS
5.4.1.3 A minimum of two (2) years of experience with systems analysis and design;	***20 years of systems analysis and design; 10 years in Child Support***	EXCEEDS
5.4.1.4 A minimum of two (2) years of experience with systems development and implementation in a Service Oriented Architecture (SOA) environment;	***5 years of experience with systems development and implementation in a Service Oriented Architecture environment***	EXCEEDS
5.4.1.5 Managed at least two (2) projects within the past five (5) years that involved designing business processes and procedures and developing new systems to support the new business processes;	***2 projects managed within the past five years: Oregon Origin and FL CAMS***	MEETS
5.4.1.6 Managed at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders;	***2 projects within the past 3 years: OR Origin and FL CAMS***	EXCEEDS
5.4.1.7 A minimum of two (2) years of experience using Microsoft Project or similar software;	***10 years***	EXCEEDS
5.4.1.8 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and	***Demonstrated in Oregon Origin and FL CAMS System Implementations***	EXCEEDS
5.4.1.9 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.	***Shown in OR and FL CSE System Implementations***	EXCEEDS

Key Relevant Project Experience

Project	***Role Description***	***Timeframe***
Oregon Origin project	***Project Manager***	***10/2015 – Present***
Florida CAMS project	***Project Director***	***01/2008 – 10/2015***
Novant Health, Charlotte, NC	***VIP IT Operations***	***10/2005 – 10/2008***

5.4.2 Technical Lead Qualifications

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

5.4.2 Technical Lead Qualifications

The technical lead assigned by the awarded vendor shall have:

5.4.2.1 A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector of which two (2) years of experience within the last five (5) years in the Child Support Enforcement environment;

5.4.2.2 A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;

5.4.2.3 A minimum of two (2) years of experience with systems analysis and design;

5.4.2.4 A minimum of two (2) years of experience with systems development and implementation in a Service Oriented Architecture (SOA) environment;

5.4.2.5 Lead at least two (2) projects within the past five (5) years that involved designing business processes and procedures and developing new systems to support the new business processes;

5.4.2.6 Lead at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders;

5.4.2.7 A minimum of two (2) years of experience using Microsoft Project or similar software;

5.4.2.8 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and

5.4.2.9 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.

5.4.2.10 A minimum of five (5) years of experience developing software using object-oriented programming languages;

spotlight

Rajiv Patel

Role for NCSEAS Project: Technical Lead

Years of Experience

At Deloitte..... 13 years
Child Support Enforcement..... 6 years
Large System Implementation .... 17 years

Experience Relevant to Nevada

- ***California CSE***

Experience Narrative

Rajiv has 17 years of experience working on large system development, integration, and maintenance projects. He has 13 years of experience working in the public sector, including six years with the California Department of Child Support Services and other HHS clients. He has extensive experience leading and architecting application development and implementation efforts in large-scale automated system projects. Rajiv is currently the application architect for the maintenance and enhancement phase of CA CSE, which is one of the largest child support systems in the country. He leads a team of technical architects, developers, and data modelers to design and implement enhancements to existing child support application. Rajiv has led the design and implementation effort of over 180 major enhancements and over 1,200 system fixes and maintenance change requests for the CA CSE system over the past six years.

Key Relevant Experience

- ***Child support system technical processes***
- ***CA CSE project***
- ***Systems architecture and development***

Education and Certifications

- ***Master of Science, Computer Science, CA State University, Sacramento***
- ***Bachelor of Computer Engineering, University of Poona, India***

spotlight

Rajiv Patel

Role for NCSEAS Project: Technical Lead

Meeting Technical Lead Qualifications		
5.4.2.1 A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector of which two (2) years of experience within the last five (5) years in the Child Support Enforcement environment;	***17 Years project management*** ***6 Years Child Support Enforcement***	EXCEEDS
5.4.2.2 A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;	***10 Years managing systems architecture and development***	EXCEEDS
5.4.2.3 A minimum of two (2) years of experience with systems analysis and design;	***17 Years in systems analysis and design***	EXCEEDS
5.4.2.4 A minimum of two (2) years of experience with systems development and implementation in a Service Oriented Architecture (SOA) environment;	***9 Years in a SOA Environment(CA CSE, AOC)***	EXCEEDS
5.4.2.5 Lead at least two (2) projects within the past five (5) years that involved designing business processes and procedures and developing new systems to support the new business processes;	***4 projects within past 5 years: CA CSE, California CSE Electronic Lien Processing Interface with SECURE vendor project, CA CSE VIOLA Portal project, California CSE Electronic Document Workflow project***	EXCEEDS
5.4.2.6 Lead at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders;	***1 Project (CA CSE)***	MEETS
5.4.2.7 A minimum of two (2) years of experience using Microsoft Project or similar software;	***16 Years using Microsoft Project/Similar Software***	EXCEEDS
5.4.2.8 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and	***Demonstrated in CA CSE***	EXCEEDS
5.4.2.9 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.	***Demonstrated in CA CSE***	EXCEEDS
5.4.2.10 A minimum of five (5) years of experience developing software using object-oriented programming languages;	***Demonstrated in CA CSE***	EXCEEDS

spotlight

Rajiv Patel

Role for NCSEAS Project: Technical Lead

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
California CSE project	***Application Architect***	***07/2011 – Present***
California CCMS V4 Deployment	***Application Development Lead***	***01/2008 – 07/2011***
CCMS V3 Deployment – County of San Diego and Sacramento	***Application Development Lead***	***02/2006 – 12/2007***

5.4.3 Implementation Lead Qualifications

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

5.4.3 Implementation Lead Qualifications

The implementation lead assigned by the awarded vendor shall have:

5.4.3.1 A minimum of two (2) years of Child Support Enforcement IT system implementation experience. Experience must involve project management of an enterprise-wide architecture, networking, multiple systems integration, hardware and software and managing a technical team and its activities from inception through post implementation on a minimum of one (1) project of similar size and complexity to this project;

5.4.3.2 A minimum of three (3) years of experience leading the implementation of new business processes and procedures and new automated systems to support the new business processes;

5.4.3.3 A minimum of two (2) years of experience leading the implementation of applications in a SOA environment;

5.4.3.4 A minimum of three (3) years of experience performing data cleansing, conversion, and implementation activities for a similar sized project;

5.4.3.5 Completed at least one (1) project within the past three (3) years that involved the procurement, receipt and make ready of computer equipment and software;

5.4.3.6 Completed at least one (1) project within the past three (3) years that involved a phased implementation where systems activities were coordinated between the old and new system environments;

5.4.3.7 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and

5.4.3.8 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.

5.4.3.9 A minimum of five (5) years of experience developing software using object-oriented programming languages.

spotlight

Jay Arumugam

Role for NCSEAS Project: Implementation Lead

Years of Experience

At Deloitte..... 1 year
Child Support Enforcement..... 19 years
System Implementation.....20 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***Child support system projects for the states of New Mexico, Texas, and Michigan***

Experience Narrative

Jay currently leads application development for the Oregon Origin Worker Portal. As a certified Project Management Professional (PMP) and Information Technology Infrastructure Library (ITIL) certified Professional, Jay has nearly 20 years of experience in project management, software development, delivery management, and account management, with 19 of those years in child support enforcement projects. He has successfully led teams that included members in India, effectively facilitating communication and understanding for positive project outcomes. His experience includes designing and implementing large-scale CSE applications in Oregon, Texas, Michigan, and New Mexico. Jay has sound technical knowledge of the Software Engineering Institute's Capability Maturity Model (SEI CMM Level 4) and ISO 9001 quality processes and databases such as Oracle and DB2.

Key Relevant Experience

- ***California CSE system transfer project***
- ***Large child support system implementation***
- ***Child support business processes***

Education and Certifications

- ***Bachelor of Engineering in Electronics and Communication, University Of Madras, India***
- ***PMI certified PMP***
- ***ITIL Certified***

Meeting Implementation Lead Qualifications		
5.4.3.1 A minimum of two (2) years of Child Support Enforcement IT system implementation experience. Experience must involve project management of an enterprise-wide architecture, networking, multiple systems integration, hardware and software and managing a technical team and its activities from inception through post implementation on a minimum of one (1) project of similar size and complexity to this project	***19 years in CSE system implementations in 4 states (Oregon Origin, Texas TxCSES T2, Michigan MiCSES, New Mexico CSES)***	EXCEEDS
5.4.3.2 A minimum of three (3) years of experience leading the implementation of new business processes and procedures and new automated systems to support the new business processes	***19 years leading implementation of new processes/procedures/ automation in 4 states (Oregon Origin, Texas TxCSES T2, Michigan MiCSES, New Mexico CSES)***	EXCEEDS
5.4.3.3 A minimum of two (2) years of experience leading the implementation of applications in a SOA environment	***Over 5 years***	EXCEEDS
5.4.3.4 A minimum of three (3) years of experience performing data cleansing, conversion, and implementation activities for a similar sized project	***15 years (Texas TxCSES T2 and Michigan MiCSES)***	EXCEEDS
5.4.3.5 Completed at least one (1) project within the past three (3) years that involved the procurement, receipt and make ready of computer equipment and software	***1 project (Texas TxCSES T2)***	MEETS
5.4.3.6 Completed at least one (1) project within the past three (3) years that involved a phased implementation where systems activities were coordinated between the old and new system environments	***1 project (Texas TxCSES T2)***	MEETS
5.4.3.7 Demonstrated knowledge of Title IV, Part D of the Social Security Act	***Knowledge from 4 different CSE projects over last 19 years (Oregon Origin, Texas TxCSES T2, Michigan MiCSES, New Mexico CSES)***	EXCEEDS
5.4.3.8 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009	***Knowledge from 4 different CSE projects over last 19 years Oregon (Origin, Texas TxCSES T, Michigan MiCSES, New Mexico CSES)***	EXCEEDS
5.4.3.9 A minimum of five (5) years of experience developing software using object-oriented programming languages	***19 years in 4 different states (Oregon Origin, Texas TxCSES T2, Michigan MiCSES, New Mexico CSES)***	EXCEEDS

spotlight

Jay Arumugam

Role for NCSEAS Project: Implementation Lead

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Oregon Origin	*Application Development Manager (Worker Portal)*	*11/2016 – Present*
Texas TxCSES T2 project	*Batch Architect/Establishment and Enforcement Development Manager*	*05/2011 – 11/2016*
Michigan MiCSES project	*Batch Architect/Financial Management Development Manager*	*12/2001 – 05/2011*
New Mexico CSES project	*Case Management Lead/Financial Lead*	*03/1998 – 12/2001*

5.4.4 Individual Team Member Qualifications

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

5.4.4 Individual Team Member Qualifications

Each member of the Implementation Contractor's project team must meet at least one (1) of the qualifications below. All team members must bring experience in the Child Support Enforcement business and/or technical environment, including a working knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009. In addition, the aggregation of the individual qualifications of the team members must cumulatively meet all of the following requirements. These requirements are:

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;

5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project;

5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment;

5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces;

5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software;

5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software; and

5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language;

In addition to the key staff and project leadership above, we bring staff with deep industry and technical backgrounds. These individuals support the key staff both as advisors and as the team executing the day to day responsibilities. The individual team members are representative of the public sector resources available to us from our pool of qualified staff. The pool includes application track leads, technical and infrastructure staff, testing staff, and training staff whose experience and skills align with our key team and the goal of successfully implementing the NCSEAS project.

We understand that each of our team members must meet at least one of the qualifications listed above and, furthermore, that the State needs to approve each resource. We work with you at the onset of the project to obtain such approval for each team member.

The following table is provided to assist in verifying that the individual team members meet at least one of the requirements. Each of these individuals have experience in the Child Support Enforcement business and/or technical environment as well as working knowledge of the Automated Systems for Child Support Enforcement: A Guide for State 2009. To provide additional insight into these individuals and the experience and knowledge they bring to the project, we have provided summary biographies for each practitioner following the table. These highlight the key experience and knowledge they bring to the Deloitte team.

Team Member	5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;	5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project;	5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment;	5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces;	5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software;	5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software; and	5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language;
Arun Elangovan		✓	✓	✓			
Amit Aphale	✓	✓	✓	✓			✓
Robert Holguin			✓	✓	✓	✓	
Natalie Martella	✓	✓	✓	✓			
Kimberly (Kim) King			✓	✓			✓
Vicky Tillman	✓				✓		
Dildar Marhas	✓	✓	✓	✓			✓
Kayla Wells		✓	✓	✓			
Arivuselvam (Selvam) Asaithambi	✓	✓	✓	✓			✓
Sadruddin Ali	✓		✓	✓			✓
Arun Gnanavel	✓	✓	✓	✓	✓	✓	✓
Pratik Dutta	✓						
Jennifer Hdairis	✓	✓	✓	✓			✓

Team Member	*5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;*	*5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project;*	*5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment;*	*5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces;*	*5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software;*	*5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software; and*	*5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language;*
Nathan Holler	✓	✓	✓	✓			
Mike Moreno	✓				✓		
Sandy Mulligan	✓			✓			
Satish Mummalaneni	✓	✓	✓	✓	✓	✓	✓
Bianca Blanco					✓		
Santosh Solapurkar	✓	✓	✓	✓			
William (Bill) Strate	✓	✓					
Surya Kandula	✓	✓		✓			
Santosh Padakanti		✓					✓
Santhakumaran (Santh) Narayanan	✓	✓	✓	✓			

Table 5- 14. Matrix of Individual Team Experience.

The following summaries provide more detail about how each individual member provides value to the NSCEAS project.

spotlight

Arun Elangovan

Role for NCSEAS Project: Interstate

Years of Experience

At Deloitte..... 10 Years
Child Support Enforcement.....8 years
Large System Implementations.10 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***Florida CAMS***

Experience Narrative

Arun is a project delivery specialist with eight years of experience working on child support projects. He is currently on Oregon Origin and is working extensively to develop the child support partner interfaces. Arun is the secondary lead on the Interface Technical team. He completed mock-up screenshots, worked through design and development for partner interfaces, and assisted in the financial design delivery. Arun is the key contact person for all inter-agency activities. He started his child support career on the Florida CAMS project, where he led a functional and technical interfaces team, and prepared technical design documents for the conversion, forms, and reports teams.

Key Relevant Experience

- ***California CSE system transfer project***
- ***Child support policy, process, and technology***
- ***Child support systems development***

Education and Certifications

- ***Bachelor of Engineering, PSG College of Technology under the Anna University***

Meeting Individual Team Member Qualifications

5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin project	***Technical / Functional Interface Business Lead***	***04/2016 – Present***
Florida CAMS project	***Technical / Functional Interface, Conversion, Forms & Reports BA & Lead***	***12/2009 – 03/2016***

spotlight

Amit Aphale

Role for NCSEAS Project: Customer Service

Years of Experience

At Deloitte..... 10 years
Child Support Enforcement..... 1.5 years
Large System Implementation ..... 10 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***Nevada HCR-EE***
- ***Nevada SSBM***

Experience Narrative

Amit has over 12 years of experience in delivering modernized web based business applications using cutting edge web technologies. He has primarily worked on assignments spanning across public sector and consumer business.

He has more than 10 years of experience working on public sector engagements especially in the HHS and child support domain. He has knowledge and experience in project delivery throughout all phases of SDLC, including requirements, design, development, testing, and application support. He has worked with multiple public sector clients including the states of Nevada, Oregon, California, Montana, and Massachusetts to build enterprise applications.

Amit has worked with the State of Nevada to build their Supported State-Based Marketplace (SSBM) application and the modernized AMPS and Eligibility Rule Engine applications.

He has more than five years of experience in the role of a team lead and over three years of experience as an application manager.

Key Relevant Experience

- ***CSE environment***
- ***California CSE system transfer project***

Education and Certifications

- ***P.E.S. College of Engineering, University Of Marathwada, Bachelor of Computer Science and Engineering***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***2 years***	MEETS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***12 years***	EXCEEDS

spotlight

Amit Aphale

Role for NCSEAS Project: Customer Service

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Oregon Origin project	***Application Development Manager (Worker Portal, Customer Portal)***	***06/2016 – Present***
Montana CHIMES project	***Development Lead***	***11/2011 – 11/2012***
Nevada HCR-EE project	***Development Manager***	***03/2015 – 05/2016***
Nevada SSBM project	***Development Manager***	***06/2014 – 02/2015***

spotlight

Robert Holguin

Role for NCSEAS Project: System and Integration Testing

Years of Experience	Experience Relevant to Nevada
At Deloitte.....3 years Child Support Enforcement.....14 years	• California CSE • New Mexico CSES

Experience Narrative

Robert has over a decade of experience with system implementations and integrations for child support enforcement programs in multiple states, including 10 years working directly on the State of California Department of Child Support Services CA CSE system. He has extensive experience with large-scale systems projects, managing change across and within the organization while keeping high quality standards, including developing and implementing automated and manual test plans. His experience in child support automated financial transaction processing testing was essential to the successful implementation of the California Child Support State Disbursement Unit (SDU). During the CA CSE implementation phase, the SDU was transitioned from one SDU vendor to another during the CA CSE maintenance/enhancement phase. Robert led the CA CSE system testing effort for federal certification of all FSA88 and PRWORA functionality as specified in the Automated Systems for Child Support Enforcement: A Guide for States 2000. He started his career as an application developer on the New Mexico CSES system.

Key Relevant Experience	Education and Certification
CA CSE	• Bachelor of Arts – Psychology, New Mexico State University
Child support process, policy, and technology	• Certified: ITIL Foundation in IT Service Management
Federal system certification	• Certified Software Tester, CSTE

Meeting Individual Team Member Qualifications

5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	5 years	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	5 years	EXCEEDS
5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software	2 projects	EXCEEDS
5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software	2 projects	EXCEEDS

spotlight

Robert Holguin

Role for NCSEAS Project: System and Integration Testing

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
California CSE project	***Testing Lead***	***07/2011 – present***
California CalPERS – PSR	***Systems Specialist***	***08/2010 – 07/2011***
California CSE project	***Test Team Lead***	***03/2005 – 08/2010***
New Mexico CSES project	***Application Developer***	***11/2002 – 02/2005***

spotlight

Natalie Martella

Role for NCSEAS Project: Case Management, UAT Support

Years of Experience

At Deloitte.....3 years
Child Support Enforcement.....3 years
Large System Implementation .....3 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***Pennsylvania PACSES***

Experience Narrative

Natalie Martella has worked on child support projects since beginning her career with Deloitte. She started as an open system analyst on the PACSES project. Natalie has been with Oregon Origin since it started in October of 2015, where she is the case management and locate lead. She led over 45 JAD sessions covering over 600 requirements during the design phase. Natalie is currently leading system testing activities, managing testers and developers to successfully run over 350 test cases. Natalie brings a firsthand understanding of the CA CSE system being transferred, as she used the Proof of Concept CA CSE system to guide her JAD sessions in Oregon. She also understands areas where states can differ, given her work in two CSE programs.

Key Relevant Experience

- ***CA CSE transfer system project***
- ***Child support modules implementation***
- ***Large system implementation***

Education and Certifications

- ***Bachelor of Business Administration, Management Information Systems and Marketing, University of Pittsburgh***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***3 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***3 Years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***3 Years***	MEETS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***3 Years***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin project	***System Testing Lead***	***01/2017 – Present***
Oregon Origin project	***Case Management and Locate Lead***	***10/2015 – 01/2017***
Pennsylvania PACSES project	***Open System Analyst***	***09/2014 – 10/2015***

spotlight

Kim King

Role for NCSEAS Project: System and Integration Testing

Years of Experience

At Deloitte.....10 years
CA CSE.....4 years
Large System Implementation ...12 years

Experience Relevant to Nevada

- **California CSE**

Experience Narrative

Kim has over 12 years of testing experience in developing and executing test plans, testing of case management systems focused on submitting defects, and testing fixes by drafting, executing, and updating test scenarios, creating test processes and sub-processes, and test documentation standards as per IEEE and ISO. Kim's experience includes working on various State of California Health and Human Services projects such as CA CSE, DIA, ISAWS, CWS/CMS, and CalWIN. In addition, Kim has been involved in the planning and execution of migration related activities for case management systems. Kim also worked as a public assistance specialist for the Yolo County, California Department of Employment and Social Services.

Key Relevant Experience

- **CA CSE**
- **Testing in the HHS environment**

Education and Certification

- **Bachelor of Arts, Sociology, University of California, Irvine**

Meeting Individual Team Member Qualifications

5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	**5 Years**	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	**5 Years**	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
California CSE project	**Application Test Analyst III**	**05/2013 – present**
California Employment Development Department (EDD)	**Integration Test Lead**	**03/2011 – 04/2013**
California ISAWS project	**Migration Lead**	**01/2010 – 07/2010**

spotlight

Vicky Tillman

Role for NCSEAS Project: Enforcement, UAT Support

Years of Experience

At Deloitte.....12 years
Child Support Enforcement.....31 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***CSE systems experience in Florida CAMS, Michigan, Pennsylvania PACSES, Indiana, and Kentucky***

Experience Narrative

Vicky has over 30 years of experience in the child support enforcement program and over 12 years of experience implementing large-scale child support systems in various states including Oregon Origin, Michigan, Pennsylvania, Florida, Indiana, Kentucky, and Oregon. Each system had a different technology platform, including IBM mainframe, Microsoft web technology, and SAP ERP/COTS. These implementations provide a broad perspective on best practices and training approaches for child support solutions. She brings her current Oregon Origin experience as the functional lead for the financial management thread, and as training co-lead.

Key Relevant Experience

- ***Child support enforcement/multiple states***
- ***Child support business process modeling and analysis***
- ***Oregon Origin***

Education and Certification

- ***University of Kentucky, Business Administration***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***5 years***	EXCEEDS
5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software	***1 project***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin project	***Training Co-Lead***	***08/2016 – present***
Oregon Origin project	***Business Analyst – Functional Team***	***02/2016 – 08/2016***
Indiana Invest project	***Business Analyst/Subject Matter Expert for various Business Process areas***	***11/2012 – 11/2015***
Pennsylvania PACSES project	***Requirements Lead, Testing Lead***	***08/2016 – Present*** ***02/2012 – 11/2012*** ***02/2010 – 08/2010*** ***08/2005 – 03/2007***
Kentucky CSE project	***Subject Matter Expert/ Business Analyst/Tester/ Trainer***	***08/2010 – 02/2012***

spotlight

Dildar Marhas

Role for NCSEAS Project: Technical Architect

Years of Experience

At Deloitte..... 7 years
CSE Technical Environment ..... 6 years
Large System Implementation ..... 23 years

Experience Relevant to Nevada

- ***Nevada: AMPS, Access Nevada, HCR-EE, NOMADS, DWSS Technical Infrastructure***

Experience Narrative

Dildar has over 23 years delivery experience in systems engineering, application development, and complex systems integration utilizing state of the art technologies in the retail, manufacturing, government, and insurance industries, including eight years in public sector – state government with a focus on integrated eligibility, case management and legacy modernization. As the project manager and technical architect on multiple engagements, Dildar focuses on managing, designing, and implementing scalable architectures while advising clients on technical standards and best practices. He has successfully managed large technical teams throughout all phases of the software development lifecycle, including requirements gathering, analysis, design, implementation, and project management. He has worked alongside the State of Nevada DWSS for the past seven years, which provides him insight into the technical and operating environment for the NCSEAS project.

Key Relevant Experience

- ***Nevada HHS systems experience***
- ***Java Expertise***

Education and Certifications

- ***Bachelor of Engineering, Maulana Azad National Institute of Technology***
- ***Master of Technology, Indian Institute of Technology***
- ***PMI Certified PMP***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***3 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 Years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 Years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 Years***	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***17 Years***	EXCEEDS

spotlight

Dildar Marhas

Role for NCSEAS Project: Technical Architect

Key Relevant Project Experience

Project	Role Description	Timeframe
Nevada HCR-EE project	Technical Manager/Project Manager	07/2012 – Present
Wyoming WES Maintenance and Operations project	Transition Manager	06/2016 – 09/2016
Access Nevada enhancement	Technical Manager	05/2011 – 11/2011
Nevada AMPS project	Technical Manager	01/2010 – 06/2010

spotlight

Kayla Wells

Role for NCSEAS Project: Customer Service

Years of Experience

At Deloitte.....7 years
Child Support Enforcement.....7 years
Large System Implementations....7 years

Experience Relevant to Nevada

- ***Pennsylvania PACSES***

Experience Narrative

As a track lead on the Open Systems team of the Commonwealth of Pennsylvania's PACSES, Kayla has expanded her exposure, knowledge, and responsibilities in each of the phases of the system development lifecycle. This included gathering and revising requirements, initial documentation and mock-ups, design and development, implementation, and supporting the applications post implementation. As an application manager on PACSES, Kayla has overseen the successful deployment of multiple releases, completed estimation efforts for new work, and managed the day to day activities of those team members whom she supervises. Her projects include numerous customer service initiatives from requirements to deployment including customer online application and self-service, mobile website, and interfaces.

Key Relevant Experience

- ***Child support innovation design and implementation***
- ***Child support system customer service initiatives***
- ***Application lead***

Education and Certification

- ***Bachelor of Information Sciences and Technology, - The Pennsylvania State University***
- ***PMI Certified PMP***

Meeting Individual Team Member Qualifications

5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Pennsylvania PACSES project	***Open Systems Track Lead and Application Lead***	***08/2010 – Present***

spotlight

Selvam Asaithambi

Role for NCSEAS Project: Release Engineering

Years of Experience

At Deloitte.....7 years
CSE Environment.....5 years
Large System Implementation.. .15 years

Experience Relevant to Nevada

- **Nevada HCR-EE**
- **Nevada AMPS**
- **Nevada NOMADS**

Experience Narrative

Selvam has 15 years of software development experience in analysis, design, development, support, and unit testing of application software in web based environments and client/server architectures using Java and J2EE technologies such as Spring, Hibernate, Servlets, JSP, JDBC, XML, XSL, AJAX, and WebServices. He has worked for over seven years in a SOA environment for NOMADS in Nevada. Selvam has extensive experience working in the HHS environment, helping to implement components of child support, TANF, SNAP, and Medicaid.

Key Relevant Experience

- **HHS system implementation**
- **Child support environment**
- **JAVA**

Education and Certification

- **Bachelor of Computer Science and Engineering, Madurai Kamaraj University, India.**
- **ITIL Foundation Certificate in IT Service Management**
- **Java SE 8 Programmer**

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	**5 years**	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	**5 years**	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	**4 years**	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	**5 years**	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	**5 years**	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Wyoming WES project	**Technical Manager**	**06/2017 – Present**
Nevada SNAP TANF Expansion project	**Technical Lead**	**03/2015 – 06/2017**
Nevada HCR-EE project	**Technical Lead**	**12/2012 – 03/2015**
Nevada AMPS project	**SOA Consultant**	**05/2010 – 07/2012**

spotlight

Sadruddin Ali

Role for NCSEAS Project: Testing Lead

Years of Experience

At Deloitte..... 10 years
Child Support Enforcement..... 2 years
Large System Implementation ..... 16 years

Experience Relevant to Nevada

- ***Ohio Benefits (Integrated Eligibility)***
- ***Massachusetts COMETS HD***
- ***Massachusetts HIX***

Experience Narrative

Sadruddin Ali has over 16 years of experience in project management, technology transformation, business process reengineering, technology strategy, testing, and data management for large scale global implementations in the public sector and financial services industries. He was instrumental in recovery and successful realignment and delivery of projects at the Workplace Safety and Insurance Board (WSIB) at Ontario. He led the project management office for the Commonwealth of MA child support system replacement project. He also has proficiency in leading custom application development projects in the Child Support Enforcement (State of Wisconsin), HHS at Disaster Recovery (GOHSEP, Louisiana), HIX (MA), HCSIS (CoPA), SACWIS (DC, TN, PA-Allegheny, NJ), Transportation (PA), and Taxation (OH). He has technology proficiency in J2EE, Java, .NET, JSP, SharePoint, Webfocus, Websphere, Oracle, DB2, and a host of other tools.

Key Relevant Experience

- ***CSE experience/two states***
- ***HHS large system implementation***
- ***Java expertise***

Education and Certifications

- ***Drexel University: Masters of Science in Information Science, and Bachelor of Science in Chemical Engineering***
- ***PMP Certification***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***2 years***	MEETS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***3 years***	MEETS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***3 years***	MEETS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***9 years***	EXCEEDS

spotlight

Sadruddin Ali

Role for NCSEAS Project: Testing Lead

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Ohio Benefits (Integrated Eligibility)	***Project Manager***	***03/2017 – Present***
Wisconsin Child Support Document Generation Replacement	***Program Manager***	***03/2016 – 09/2016***
Massachusetts DOR COMETS HD	***PMO Manager***	***05/2015 – 02/2016***
Ontario System Integration/Portal Implementation	***Portal Manager***	***12/2013 – 06/2014***
Massachusetts HIX project	***Notices Manager***	***05/2013 – 08/2013***

spotlight

Arun Gnanavel

Role for NCSEAS Project: Batch and Interfaces

Years of Experience

At Deloitte..... 1.5 years
Child Support Enforcement..... 2 years
Large System Implementation ..... 14 years

Experience Relevant to Nevada

- ***Nevada SSBM***
- ***Nevada SNAP TANF Expansion***

Experience Narrative

Arun Gnanavel has 14+ years of software development experience in analysis, design, development, support, and unit testing of application software in mainframe and web based environments with client/server architectures using Java and J2EE technologies like Spring, JDBC, and XML. He is experienced in using code generation and code analysis tools and has extensive work experience in supporting the insurance industry, where he worked in the life, annuity, health, P&C, and auto sectors using the VANTAGE-ONE® product. Additionally, Arun has experience in SQL, PL/SQL and Stored Procedures in DB2. He also trained and worked in SQL query tuning for performance improvement, including 5+ years of experience in web technologies using Java Enterprise Edition Solutions. He is a PMI Certified Project Management practitioner. He has experience with the Nevada DWSS environment, including NOMADS, through his work as senior developer and deployment lead for the DWSS SNAP TANF Expansion project and the DWSS SSBM project.

Key Relevant Experience

- ***CSE environment***
- ***Nevada HHS***

Education and Certifications

- ***Bharathiar University – Bachelors of Engineering – Informational Technology***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***5 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***2 years***	MEETS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***3 Years***	MEETS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS
5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software	***2 projects: NV DWSS SNAP TANF and NV DWS SSBM projects***	EXCEEDS

spotlight

Arun Gnanavel

Role for NCSEAS Project: Batch and Interfaces

5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software and	***2 projects: NV DWSS SNAP TANF and NV DWS SSBM projects***	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***5 years***	MEETS

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Nevada SNAP TANF Expansion project	***Senior Developer and Deployment Lead***	***12/2015 – 08/2017***
Nevada SSMB project	***Senior Developer***	***06/2014 – 12/2015***
State Farm Benefit Payment Systems Modernization	***Project Lead***	***07/2012 – 06/2014***

spotlight

Pratik Dutta

Role for NCSEAS Project: Forms and Reporting

Years of Experience

At Deloitte..... 2 years
Child Support Enforcement..... 2 years
Large System Implementation ..... 2 years

Experience Relevant to Nevada

- **Oregon Origin**

Experience Narrative

Pratik has experience in various stages of system development, including requirements definition, design and writing specifications, technical architecture, development, and testing. In his two years on Oregon Origin, he has focused on gathering and developing detailed data reporting and business intelligence requirements, and developing the design for the reporting/data warehouse. Pratik also developed string and system test cases to test the system user pages and reports.

Key Relevant Experience

- ***California CSE system transfer project***
- ***Reporting and Business Intelligence***

Education and Certifications

- ***University of Southern California, Viterbi School of Engineering, Master of Science, Industrial and Systems Engineering***
- ***Sathyabama University, Bachelor of Engineering, Mechanical and Production Engineering***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***2 years***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin project	***Reporting/Data Warehouse Analyst and Tester***	***10/2015 – Present***

spotlight

Jennifer Hdairis

Role for NCSEAS Project: Forms and Reporting

Years of Experience

At Deloitte.....4 years
CSE Technical Environment.....4 years
Large System Implementations....11 years

Experience Relevant to Nevada

- ***Nevada HCR-EE***

Experience Narrative

Jennifer has 10 years of experience in the IT industry, in software development, and leading small developer teams. She is currently working as a senior developer and team leader for the Nevada health care reform eligibility engine project. While she was on the NOMADS project, she assisted with the eligibility rules engine, updated the existing systems to include eligibility rules changes, and ensured the synchronization of information between the multiple systems and databases using IBM process server, Websphere portal, web services, HATS services, and MQ server. She is an experienced Java/J2EE developer, with a strong background in WebSphere Portal and Application servers, portlet development particularly with Struts and JSF frameworks, web services, and IBM web content management. In addition to being a Certified Java Developer and Web Component Developer, she is also PMP certified and holds several IBM certifications.

Key Relevant Experience

- ***Nevada HHS systems***
- ***CSE environment***
- ***Thunderhead forms***

Education and Certification

- ***Bachelors of Computer Science, University of Jordan***
- ***PMI Certified PMP***
- ***Oracle Certified Professional, Java Web Component Developer, EE 5***
- ***Sun Certified Java Programmer 5***
- ***IBM Certified Solution Developer – IBM WebSphere Portal V6.0***
- ***IBM Certified Application Developer – IBM Workplace Web Content Management 6***
- ***IBM Certified Application Developer – Lotus Notes and Domino 7***
- ***IBM Certified System Administrator – WebSphere Portal V5.1***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;	***5 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 Years***	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***5 years***	MEETS

spotlight

Jennifer Hdairis

Role for NCSEAS Project: Forms and Reporting

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Nevada HCR-EE project	***Senior Developer and Team Leader***	***11/2013 – Present***
Nevada HCR-EE project	***Senior Developer and Team leader***	***10/2012 – 10/2013***

spotlight

Nate Holler

Role for NCSEAS Project: Locate

Years of Experience

At Deloitte.....5 years
Child Support Enforcement.....4 years
Large System Implementations....5 years

Experience Relevant to Nevada

- ***Wisconsin Child Support Document Management project***
- ***Pennsylvania PACSES***

Experience Narrative

Nathan has experience in project management, configuration management, enterprise content management, customer relationship management, information management, and risk management. He has effectively led client sessions for public sector clients during all phases of the systems development life cycle. He has led teams to gather and revise requirements, completed mock-up screenshots, and worked through design and development in child support projects including the Wisconsin Department of Children and Families Child Support Document Generation Replacement project and the PACSES project. He has managed initiatives through implementation to production and supported applications post implementation. In addition, Nathan has managed risk assessment as well as the procurement provisioning of new technological devices for a large financial services corporation.

Key Relevant Experience

- ***CSE system implementation***
- ***Child support modules implementation***
- ***Large system implementation***

Education and Certification

- ***Bachelor of Science, Information Sciences and Technology, The Pennsylvania State University***

Meeting Individual Team Member Qualifications

6.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***5 years***	EXCEEDS
6.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
6.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***4 years***	EXCEEDS
6.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***4 years***	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Delaware FOCUS project	***Functional Lead***	***04/2016 – Present***
Wisconsin CSE Document Management	***Functional Lead***	***10/2013 – 03/2016***
Pennsylvania PACSES project	***Performance Improvement Module (PIM), Child Support Self-Service Web Site CSWS), Employer Search Track Lead***	***07/2012 – 09/2013***

spotlight

Mike Moreno

Role for NCSEAS Project: Training/Rollout

Years of Experience

At Deloitte.....1 year
Child Support Enforcement.....9 years
Large System Implementation .....1 year

Experience Relevant to Nevada

- ***Oregon Origin***
- ***CiviTek Communications***

Experience Narrative

Mike brings over 10 years of experience in organization transformation activities, including designing and deploying child support payment portals, crafting stakeholder communications, and providing insight into governmental policy. Prior to joining Deloitte, Mike was the Chief Executive Officer of Civic Communications LLC, a communications and management firm providing services with expertise in research, training, and technical assistance through a network of professionals with expertise in policymaking, branding, marketing, communications, and organizational change. He also managed the Resolution Team, an escalated Child Support Help Desk in Florida

Mike is an active leader in the child support community and currently serves on the Board of Directors for the National Child Support Enforcement Association (NCSEA) and the Eastern Regional Interstate Child Support Association (ERICSA).

Key Relevant Experience

- ***Training and facilitation***
- ***California CSE system transfer project***

Education and Certification

- ***Florida State University – Master of Business Administration***
- ***Florida State University – Bachelor of Music***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***3 years***	EXCEEDS
5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software	***1 project***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin	***Training and Implementation Lead***	***08/2016 – Present***
CiviTek Communications	***Training Development and Delivery***	***06/2009 – 08/2016***

spotlight

Sandy Mulligan

Role for NCSEAS Project: Financial Management, UAT Support

Years of Experience

At Deloitte..... 11 years
Child Support Enforcement..... 15 years
Large System Implementation... 8 years

Experience Relevant to Nevada

- ***Child support systems experience in Florida CAMS, Pennsylvania PACSES, Indiana INvest, Kentucky, Michigan, Texas, and Wisconsin***

Experience Narrative

As a specialist senior with over 17 years of experience working in the public sector and a degree in computer information systems, Sandra has extensive experience in the implementation and/or maintenance of large-scale child support automated systems in various states including Florida CAMS, Pennsylvania PACSES, Texas, Michigan, Kentucky, and Arkansas. She has experience in business process refinement projects for child support programs in Texas, Indiana, New York, and Wisconsin, and data analysis and reporting redesign for federal OCSE. During her 15 years working in child support programs, she has played a major role in all phases of a child support enforcement system, including process analysis, requirements definition, design, development, testing, implementation, training development and delivery, and operations and maintenance.

She has a deep understanding of the enforcement and financial business process area and the Federal Reports, including the OCSE157 and OCSE34, and federal certification requirements for a child support system including a working knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009. She has developed training materials for new CSE system implementations and has delivered train-the-trainer sessions and end user training sessions.

On her last two projects, which were Integrated Eligibility systems, she provided subject matter expertise for the IV-A – IV-D interfaces during the System Test and User Acceptance phases of the projects.

Key Relevant Experience

- ***CSE systems/multiple states***
- ***Design sessions/multiple states***
- ***Federal test deck certification, Florida CAMS***
- ***CSE business process analysis and design***

Education and Certification

- ***Bachelor of Science, Computer Information Systems, DeVry University***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***4 Years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***4 Years***	EXCEEDS

spotlight

Sandy Mulligan

Role for NCSEAS Project: Financial Management, UAT Support

Key Relevant Project Experience

Project	Role Description	Timeframe
Rhode Island UHIP project	**Child Support Subject Matter Advisor / IVA-IVD Interfaces**	**05/2016 – 08/2016**
Virginia Enterprise Delivery System Program (EDSP)	**Child Support Subject Matter Advisor / IVA-IVD Interfaces**	**02/2016 – 04/2016**
Pennsylvania PACSES porject	**System Integration Testing Thread Lead**	**02/2015 – 02/2016**
Indiana INvest	**Customer Self Service Portal Lead /Financial Lead**	**02/2014 – 02/2015** **06/2013 – 01/2014**
Kentucky CHFS CSE Modernization project	**Training Lead**	**10/2011 – 02/2012**
Florida CAMS	**Financial Lead / Subject Matter Expert**	**01/2008 – 10/2011**

spotlight

Satish Mummalaneni

Role for NCSEAS Project: Data Conversion

Years of Experience

At Deloitte..... 6 years
Child Support Enforcement..... 6 years
Large System Implementation ..... 19 years

Experience Relevant to Nevada

- ***Nevada: NOMADS, HCR-EE, AMPS, ME, WPS, ACCESS Nevada, OASIS***

Experience Narrative

Satish has over 19 years of experience in designing, developing, testing, test automation, and implementing large IT systems that span web-based, client/server, and mainframe technologies. Along with his strong technology experience, he has extensive experience working in the Health and Human Services industry, including working on 10 different projects and over 19 years of working with Medicaid, SNAP, TANF, child support, child care, and E&T IT systems. Specifically, he has worked alongside the State of Nevada DWSS for more than 18 years, which provides him great insight into the technical and operating environment for the NCSEAS project. He understands the DWSS environment and NOMADS.

Key Relevant Experience

- ***Nevada HHS systems***
- ***Java expertise***

Education and Certifications

- ***MS in Engineering, MS University of Baroda***
- ***BS in Engineering, Nagarjuna University***
- ***PMI Certified PMP***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***10 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***6 Years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***6 Years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***12 Years***	EXCEEDS
5.4.4.5 Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems using the State's e-learning software Articulate and Camtasia or similar software	***1 project***	MEETS

spotlight

Satish Mummalaneni

Role for NCSEAS Project: Data Conversion

5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software and	***1 project***	MEETS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***12 Years***	EXCEEDS

Key Relevant Project Experience

Project	*Role Description*	*Timeframe*
Nevada HCR-EE	***Integration Manager***	***07/2012 – Present***
Deloitte Health Sciences and Government Practice project	***Integration Manager***	***12/2011 – 06/2012***
Nevada AMPS	***Integration Manager***	***07/2010 – 10/2011***
Nevada Child Care System (NCCS) project)	***Implementation Manager***	***10/2007 – 03/2010***
Nevada Deficit Reduction Act (DRA)	***Conversion Manager***	***01/2006 – 12/2006***
Nevada DWSS projects (NOMADS, ME, WPS, PDS, ACCESS nevada, OASIS)	***Technical Lead***	***09/1998 – 06/2010***

spotlight

Bianca Blanco

Role for NCSEAS Project: Training/Rollout

Years of Experience

At Deloitte.....2 years
Child Support Enforcement.....2 months
Large System Implementation .....4 years

Experience Relevant to Nevada

- ***Oregon Origin***

Experience Narrative

Bianca is a senior consultant in the Human Capital Digital Enablement practice with over 10 years of organizational development and change management experience. She has led end-user adoption activities (change readiness, leadership alignment, communications, and training) for enterprise-wide digital transformations. She has also worked in a variety of industries including public sector, high-tech, financial services, entertainment, and utilities. Her experience includes change readiness and management for technology adoption, talent strategy development, succession planning program design and implementation, training development and delivery, and organizational competency design.

Key Relevant Experience

- ***California CSE system transfer project***
- ***Training strategy and development***

Education and Certifications

- ***Claremont Graduate University – M.A., Organizational Behavior***
- ***University of California, Los Angeles B.A., Psychology***
- ***Prosci Change Management Certification***
- ***Korn Ferry/Lominger Leadership Architect***

Meeting Individual Team Member Qualifications

5.4.4.6 Completed at least one (1) project in the past three (3) years that involved the development of Tier 1 and Tier 2 Help Desk support processes including the development and implementation of user manuals, scripts, and training using the State's e-learning software Articulate and Camtasia or similar software	***1 project***	MEETS

Key Relevant Project Experience

Project	***Role Description***	***Timeframe***
Oregon Origin	***Implementation Lead***	***07/2017 – Present***
Walmart Workday implementation	***Workday Implementation***	***03/2017 – 07/2017***

spotlight

Santosh Solapurkar

Role for NCSEAS Project: Performance/Automated Testing

Years of Experience

At Deloitte..... 8 years
CSE Environment Experience.....3 years
Large System Implementations.....10 years

Experience Relevant to Nevada

- ***Nevada NOMADS***
- ***Wyoming WES***

Experience Narrative

Santosh has more than 10 years of experience in software testing for human health services, e-commerce, banking, and insurance. In addition, he has worked on multiple projects focused on implementation of Medicaid, SNAP, TANF, child support, child care, and E&T IT systems. His areas of expertise include test estimation, test execution, test management, manual and automated software testing, and performance testing of web, web services, online and offline batch, and databases.

Key Relevant Experience

- ***Child support environment***
- ***Test Estimation, Execution and Management***
- ***HHS project management***

Education and Certification

- ***Bachelor's in Industrial Electronics Engineering, Nagpur University***
- ***ISTQB***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;	***2 years***	MEETS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Wyoming WES project	***Technical Lead/System Administrator***	***05/2016 to Present***
Nevada NOMADS project	***Test Lead***	***08/2012 to 04/2016***

spotlight

Bill Strate

Role for NCSEAS Project: Establishment, UAT Support

Years of Experience

At Deloitte.....9 years
Child Support Enforcement.....30 years

Experience Relevant to Nevada

- ***Child Support Experience in Indiana, Massachusetts, Minnesota, and Kansas***
- ***Former IV-D Director of North Dakota***

Experience Narrative

Bill has been actively involved in leadership positions in the child support program since 1994, first as the IV-D Director of the North Dakota child support program and since 1998 in the private sector supporting the CSE programs in the states of Kansas, Iowa, Massachusetts, Minnesota, and Indiana. Bill has led efforts to improve the technology support for the CSE program in all those states as well as improve their underlying business process. Relevant to the NCSEAS project, Bill led the requirements gathering for Indiana's new automated system, INvest, by conducting over 100 JAD sessions and developing over 15,000 requirements for 83 Business Process Models, 83 Use Cases, and 283 Services across the spectrum of CSE from case initiation, case management, establishment, locate, financials, and enforcement. Bill recently analyzed child support business processes to create Deloitte's Support Beacon, a case management tool that suggests appropriate next actions on cases using predictive analytics. **As the Indiana Invest** ***Requirements Manager, Bill validated requirements against the Automated Systems for Child Support Enforcement: A Guide for States 2009.***

Key Relevant Experience

- ***Child support modules process design***
- ***Child support innovation***
- ***Child support System design***

Education and Certifications

- ***Juris Doctor, University of North Dakota***
- ***PMI Certified PMP***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***3 years***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Deloitte Internal Project, Support Beacon	***Product Owner***	***04/2016 – 05/2017***
Indiana INvest	***Project Manager/ Process Lead***	***07/2009 – 11/2015***
Minnesota Department of Human Services, Child Support Enforcement Division	***Business Process Lead***	***06/2008 – 07/2009***

spotlight

Surya Kandula

Role for NCSEAS Project: Data Conversion

Years of Experience

At Deloitte.....5 years
CSE Environment Experience.....3 years
Large System Implementation ...19 years

Experience Relevant to Nevada

- ***Nevada HCR-EE***
- ***Nevada NOMADS project***

Experience Narrative

Surya has 19 years of experience in designing, developing, testing, and implementing large IT systems that span web-based, client/server, and mainframe technologies. Along with his strong technology experience, he has extensive experience working in the public sector industry, including working on different HHS projects and over 17 years of working with TANF and Medicaid IT systems. Surya understands the Nevada environment, having worked on the NOMADS system since 1999. Surya is PMI certified PMP.

Key Relevant Experience

- ***Nevada HHS systems***
- ***Child support system environment***

Education and Certification

- ***Bachelors Of Engineering, Mechanical Engineering, Andhra University***
- ***PMI Certified PMP***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***5 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***5 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***5 years***	EXCEEDS

Key Relevant Project Experience

Project	Role Description	Timeframe
Nevada HCR-EE project	***Subject Matter Expert/ Project Lead***	***09/2012 – Present***
Nevada NOMADS project	***Subject Matter Expert/ Technical Lead***	***05/1999 – 01/2010***

spotlight

Santosh Padakanti

Role for NCSEAS Project: Case Initiation

Years of Experience

At Deloitte..... 7 years
Child Support Enforcement..... 1+ years
Large System Implementation ..... 12 years

Experience Relevant to Nevada

- ***Oregon Origin***
- ***Nevada HCR-EE***

Experience Narrative

Santosh has over 12 years of software development experience using JAVA, J2EE, Spring MVC, Spring REST, SOAP Web services, Hinernate, IBM, Websphere Process Server, and Tivoli Workload Scheduler. He is versed in all aspects of the software development life cycle (SDLC), and focuses on design and development work areas. He successfully led the interface development team in the Oregon Origin project. He also led teams in the Nevada Healthcare Reform Eligibility Engine project, and for an AIG project.

Key Relevant Experience

- ***California CSE system transfer project***
- ***Nevada HHS***

Education and Certification

- ***Vasavi College Of Engineering – Master in Computer Applications***
- ***Nishitha Degree College - Bachelors in Computer Science***

Meeting Individual Team Member Qualifications

5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***3 Years***	EXCEEDS
5.4.4.7 A minimum of five (5) years of experience developing software using Java programming language	***5 Years***	MEETS

Key Relevant Project Experience

Project	Role Description	Timeframe
Oregon Origin project	***Interfaces Lead***	***05/2016 – Present***
Nevada HCR-EE project	***Registration Lead***	***05/2015 – 04/2016***
AIG Claims Processing	***Developer***	***07/2012 – 04/2015***

spotlight

Santh Narayanan

Role for NCSEAS Project: Batch and Interfaces

Years of Experience

At Deloitte.....4 months
Child Support Enforcement.....3 years
Large System Implementation .....15 years

Experience Relevant to Nevada

- ***Nevada HCR-EE***
- ***Nevada NOMADS***
- ***Modernization of Nevada GCB's Open VMS Alpha System***

Experience Narrative

Santh is a senior software engineer with more than 18 years of software development experience dedicated to development of SOA application, web based applications, distributed n-tier applications, web to host integration, and OLAP and Data Warehousing. He has performed multiple roles throughout his career, including project lead, team lead, and lead architect. He has experience in Nevada on the HCR-EE project, where he designed and developed AMPS and PRISM. He has implemented an Agile Scrum Methodology to improve communication between engineering, product management, and the client.

Key Relevant Experience

- ***CSE environment***
- ***Nevada HHS***

Education and Certification

- ***Madras University, India – Bachelor of Engineering, Computer Science***
- ***Certified ScrumMaster from Scrum Alliance***
- ***Certified MongoDB for DBAs from MongoDB Inc.***
- ***Sun Certified Programmer for the Java™ 2 Platform***
- ***Sun Certified Web Component Developer for J2EE Platform***
- ***IBM Certified System Administrator for Websphere Application Server V5.0***

Meeting Individual Team Member Qualifications

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes	***3 years***	EXCEEDS
5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project	***4 years***	EXCEEDS
5.4.4.3 Three (3) years of experience within the last five (5) years developing systems in a SOA environment	***4 years***	EXCEEDS
5.4.4.4 Three (3) years of experience within the last five (5) years developing system interfaces	***4 years***	EXCEEDS

Key Relevant Project Experience

Project	***Role Description***	***Timeframe***
Nevada HCR-EE project	***Team Lead***	***04/2017 – 07/2017***
Nevada GCB Open VMS Alpha System	***Senior Application Developer/Architect***	***04/2014 – 04/2017***
Nevada NOMADS project	***Team Lead***	***10/1999 – 04/2003***

Availability of Supplemental and Incidental Resources

As needed, we have access to a pool of qualified staff of more than 10,000 public sector practitioners and 9,000 technology practitioners for any supplemental or incidental resources needed on the project. Additionally, we have resources available through our CWS department. We understand that the State will need to approve all resources and will work with you at the onset of the project to obtain such approval for any additional team members. The following summaries are provided as a sample to showcase the breadth and depth of the available resources.

Name of Individual	*Experience Description*
Achari Chintaluri	***14 years of experience in object-oriented analysis, design, development, and testing. He has experience with J2EE using most of the advanced features of Java including JDBC, EJB, Java Beans, JSP, Servlets, Struts, XML on windows, and UNIX platforms. Currently on CA CSE.***
Aish Padihari	***9 years of testing experience with over 3 years of experience on CA CSE as a test analyst conducting manual and automated tests. Currently supporting CA CSE.***
Alan Mayer	***Alan has 11 years of experience building and maintaining CA CSE, six as system architect. He has made major contributions in the areas of document management, imaging, high-volume printing, application development, form generation, infrastructure configuration, workstation configuration/troubleshooting, and production monitoring and troubleshooting.***
Alekhya Penamacha	***Experience in developing enterprise applications using object-oriented technologies. Currently supporting CA CSE.***
Ameya Varma	***5 years of experience on CA CSE and subject matter expert in the enforcement module. Designed, implemented, and supported functional areas such as Case Initiation, Case Management, Locate, and Establishment.***
Anna Hinh	***13 years of experience in information technology systems development on large scale custom client/server and web-based applications. She is experienced in managing and performing a range of testing including interface, functional, regression, screen navigation, page validation, and end to end testing. Experience with CA CSE as the support team lead for 56 LIV Testing Cycles and the system test lead for IV-A interfaces.***
Barbara Weber	***20 years working with various federal, state, and county governments on projects in the HHS area. During her five years on CA CSE, she was a senior business analyst on the CA CSE financials subsystem team, conducting JADS and developing system use cases. She also served on the system test team, developing and executing test plans for the financials subsystem. She was the SME for the delivery of the financial subsystem training for the counties. She has also provided her expertise to child support projects in seven states, and is versed in the federal certification process, particularly for the financials subsystem.***
Becky Wong	***15 years of large system experience in help desk operations and systems administration. Her responsibilities on CA CSE included researching and analyzing software, creating documentation of installation instructions for the client, liaising between software vendors and project team members for software support, first level support for company laptops , creating and maintaining project development images, and maintaining license count for software.***
Bontha, Madhusudhan	***11 years of IT experience on CS CSE in analysis, design, development, and implementation of data warehousing, client/server applications and web-based applications.***
Catherine Dudley	***15 years of large system development experience. She was the Performance Driven Enhancements Investigator for CA CSE, developing tests designed to expose weakness in component architecture, creating component performance profiles, analyzing load versus speed, and recommending architectural changes***

Name of Individual	*Experience Description*
	focused on improving performance. She also served as a data conversion application architect, and an application development manager.
Cicely Rodriguez	***7 years of experience on CA CSE as a senior tester on web based applications and projects, acting as liaison between business users and developers. Creates complete test plans with test cases, test scripts, and data requirements. Experience as a tester on the South Carolina child support system.***
Hung Pham	***10 years of experience on CA CSE as a software developer and tester, with hands-on knowledge of the end-to-end software development life cycle (SDLC), from design and development through testing, implementation, and ongoing application support. Strong object-oriented design (OOD) experience in Java as well as in such best practice development methodologies as agile, Rational Unified Process (RUP), and UML.***
Imran Mohammed	***6 years if experience as a system software specialist on CA CSE. Responsible for supporting all different environments, resolving any environment-related issues, and setting up new environments on the project.***
Janice Wiley	***21 years of experience in all areas of the software development life cycle (SDLC), including requirements gathering, design, development, testing, deployment, and maintenance. She worked on CA CSE for 7 years as a technical architecture team member, application development team Lead, and application development lead/release manager.***
Lois Helms	***10 years of experience in the design and testing of statewide automated child support enforcement system enhancements, with a focus on the IV-D/IV-A interface. She worked on CA CSE as a business analyst, Help Desk Level 2. She also helped counties with UAT testing and developed training.***
Luis Acosta	***25 years of experience in government HHS industry systems. He has prior experience working on interfaces across multiple agencies as the interface and onsite support lead for CA CSE. He also has recent experience in South Carolina child support, were he analyzed business requirements and general system design along with the requirement traceability matrix for all major functional areas.***
Mamatha Kethireddy	***Extensive experience as an application developer, Web Based, Java, IBM/WebSphere. Currently supporting CA CSE.***
Miriyala, Swetha	***Lead developer on CA CSE and subject matter specialist in the utilities module. Designed, implemented, and supported functional areas such as appointments, activity logs, combined logs, tasks, user profiles, security roles, mail processing, LCSA reference data, document images, and electronic document workflow.***
Muzhdah Martin	***As the financial production support member at CA CSE, her responsibilities involve resolving help desk tickets, production data fixes, and monitoring of daily batch operations.***
Praveen Chinta	***4 years of experience as an application developer for CA CSE. Involved in daily production support meeting to address high visibility issues and fixing production database issues related to case data management that cannot be addressed from applications.***
Ramaiah Nagasuri	***10 years of experience working currently as a data architect in IBM DB2 Database for CA CSE.***
Ramesh Kumar	***19 years of experience in developing large scale, HHS information systems. Focus now is in CA CSE as a senior database administrator – DB2/Oracle DBA.***
Sergio Brenes	***11 years of experience specializing in child support system performance testing using tools such as LoadRunner, Quality Center, Clear Case, Clear Quest, and Unified Functional Testing. He has prior experience with CA CSE as a performance tester for 5 years, and a system software specialist for 4 years.***
Surendra Chowdary	***7 years of experience with CA CSE. Responsible for efforts associated with defining requirements, designing and testing various case and financials modules of the application. Extensive experience with large-scale systems projects.***

Name of Individual	*Experience Description*
Vicki Dodge	***8 years of experience as a Genesys System Administrator (Customer Service Contact and Call Center) supporting multiple Genesys applications for CA CSE, consisting of 1,000 licenses and 59 individual sites.***
Vikram Akkati	***15 years of public and private sector experience and 8 years of experience implementing CA CSE. Designed and developed the class and sequence diagrams from use cases using Rational Rose.***

Table 5- 15. Sample List of Supplementation and Incidental Resources Accessible.

5.5 Vendor Staff Resumes

5.5 VENDOR STAFF RESUMES

A resume shall be completed for each proposed individual on the State format provided in Attachment H, Proposed Staff Resume, including identification of key personnel per Section 13.3.19, Key Personnel.

Deloitte takes great pride in its ability to deliver quality services and deploy highly qualified and knowledgeable teams to states across the U.S. Individually, and as a team, we provide insights driven by business and industry knowledge and experience to every professional engagement. Our clients include 46 state health and human services agencies, and Deloitte has experience developing and maintaining 27 HHS self-service solutions.

We have over 35 years of child support experience in 24 states and more than 300 dedicated child support practitioners. In the sections that follow, we provide information on our staffing approach, how we selected our team, and the actual delivery team for NCSEAS. For each of the key personnel we have provided the required three external references, all of whom may be reached for validating our past experience and success.

SECTION HIGHLIGHTS

Deloitte brings decades of combined CA CSE, NOMADS, Origin, and National CSE experience:

- ***Team members deeply experienced with child support enforcement automated system implementation and transfers***
- ***Two former state IV-D Directors***
- ***Former Commissioner of the Federal Office of Child Support Enforcement (OCSE)***

We handpicked each of our proposed key personnel based on the qualifications you identified in the RFP, supplemented by our knowledge of what it takes for a successful system transfer project. They bring aggregated experience with the CA CSE, Oregon Origin, knowledge of your current legacy systems including NOMADS, and other national child support enforcement system replacement projects including Florida's CAMS. This enables us to provide a variety of perspectives and demonstrated continuous success with project management, application customization, change management, user support services, technology, and client satisfaction.

The following table illustrate several qualities that differentiate the Deloitte team. In addition to our qualifications and skillsets, the Deloitte teaming approach creates an environment in which both the DWSS and Deloitte teams will succeed together to deliver excellence in the transfer and implementation of the CA CSE system for Nevada.

Differentiator		*Deloitte's Approach*
	Proven Team Dynamics	***Deloitte brings proven team dynamics to Nevada. Many of our team members have worked together on projects of similar scope and size, including those in Oregon, Pennsylvania, Florida, Nevada, and California.***
	Experienced Project Management	***Deloitte's proposed project management team has experience in planning, staffing, managing, leading, and developing large, high-performing teams.***
	Training	***Team members have prior training on project management and staff management tools, and child support process, policy and technology, specifically a Child Support Bootcamp that was developed and delivered to multiple groups of Deloitte employees over the past few years.***
	Rewards and Recognition	***Public recognition of good performance creates positive reinforcement, and Deloitte goes above and beyond to recognize project team members for their efforts and hard work. As a firm, Deloitte has been recognized for its leadership in promoting a diverse and inclusive workplace.***
	Conflict Management	***Conflict is natural in a project environment. Our project management team has experience in managing conflict using open and effective communication and encouraging collaborative problem-solving and decision-making.***
	Team Building	***Whether it is a five-minute agenda item during a weekly status meeting or an organized offsite event, Deloitte recognizes the importance of team building activities to help individual team members work together effectively.***
	Team Performance Assessments	***Deloitte conducts ongoing formal and informal assessments of the project team's performance throughout the life of the project. These assessments are initiated to resolve issues, modify communications, address conflicts, and improve team interaction.***

Table 5- 16. Differentiators for Resource Management.

Deloitte's tried and tested resource management approach helps us sustain a strong project team that can deliver large-scale and complex projects.

Deloitte's differentiated staff management approach enables Deloitte to hire and retain a talented pool of professionals. Deloitte prides itself on retaining and rewarding top talent and has been recognized repeatedly for building a world-class workplace environment.

As requested by the RFP, detailed resumes using RFP Attachment H, are provided in Section VIII: Attachment H – Proposed Staff Resume. With respect to RFP Section 13.3.19 we have identified the key personnel.

5.6 Preliminary Project Plan

5.6.1 Submitting Preliminary Project Plan

5.6 PRELIMINARY PROJECT PLAN	
5.6.1	Vendors shall submit a preliminary project plan as part of the proposal, including, but not limited to:
5.6.1.1	Gantt charts that show all proposed project activities;
5.6.1.2	Planning methodologies;
5.6.1.3	Milestones;
5.6.1.4	Task conflicts and/or interdependencies;
5.6.1.5	Estimated time frame for each task identified in Section 4, Scope of Work; and
5.6.1.6	Overall estimated time frame from project start to completion for both vendor and State activities, including strategies to avoid schedule slippage.

Deloitte has a comprehensive project plan that includes the proposed project activities, milestones, task interdependencies and estimated timeframes for each task identified in Section VI: 4 Scope of Work. Additionally, it covers the overall estimated time frame from project start to completion for both Deloitte and DWSS activities in implementation, maintenance and operation of the Nevada Child Support Enforcement Automated System (NCSEAS) solution. The Preliminary Project Plan ties each element of the RFP to the tasks in the schedule in a custom column.

Our plan is based on our understanding of your requirements and fit gap analysis (refer to Attachment L), tasks needed to implement, maintain and operate the solution and our previous experience implementing child support solutions, including transferring the California solution, CA CSE, to the State of Oregon.

The following sub-sections highlight specific aspects of our project plan. For reference, the full preliminary project plan can be found in Section IX: Preliminary Project Plan.

5.6.1.1 Gantt Charts

The Gantt chart in the following figure highlights the Inception, Elaboration, Construction, Transition and Operation phases of Deloitte's Enterprise Value Delivery (EVD) - our SDLC Methodology for transfer solutions.

The Inception, Elaboration, Construction, Transition and Operation phases are further broken down into sub phases. At a high level, Inception is the phase where the plans and tools are established. Elaboration includes the fit-gap analysis, requirements and design sessions that lead to the final design of the system. Construction is comprised of the activities to code and test the system. Transition includes the training, user acceptance testing and the deployment of the system. The Operation phase includes the ongoing maintenance and operation of the system and project close out.

The preliminary project plan assumes a project start of May 1, 2018. This Gantt chart shows the major phases of the project, followed by the primary tasks or modules that comprise each phase.

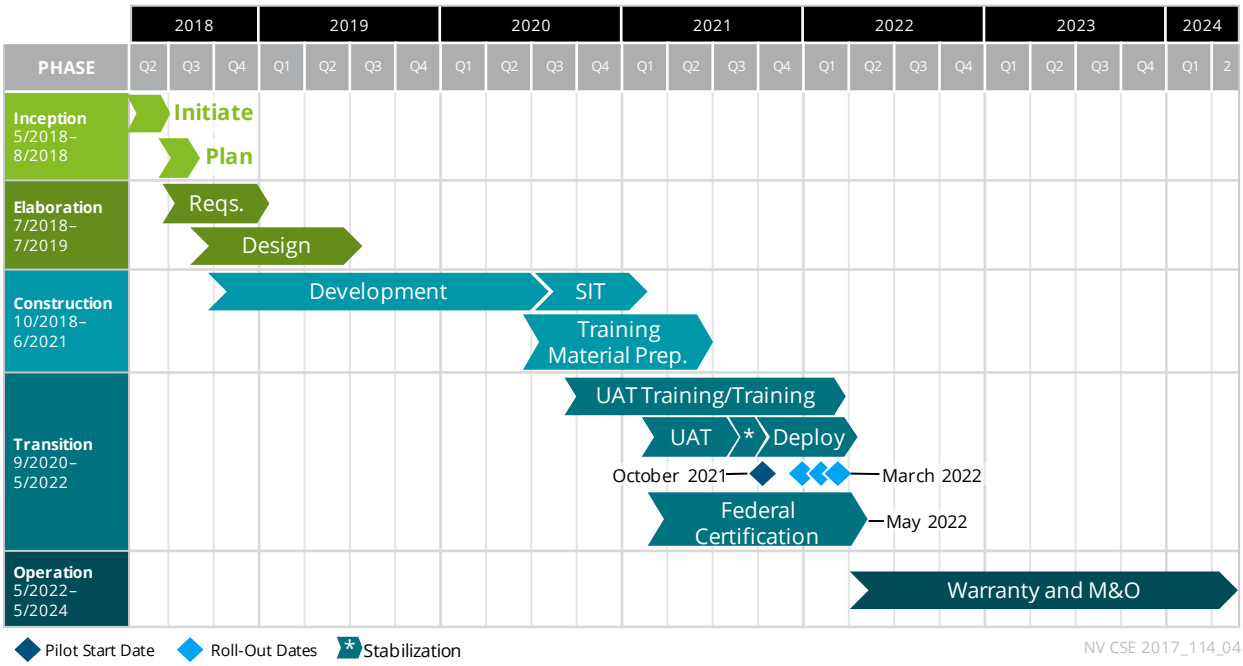


Figure 5-5. Gantt chart

The full set of tasks outlined in the preliminary project plan can be viewed as one large Gantt chart in the Microsoft Project file in Section IX: Preliminary Project Plan. The diagram provided above is intended to highlight the time-line of EVD phases and sub phases and major project milestones.

5.6.1.2 Planning Methodologies

The planning process for the preliminary project plan began with Deloitte's Project Estimator and Planning Suite (PE&PS) tool, which is based on Deloitte EVD methodology for a transfer solution. The process includes a level of effort estimation based on the scope of services for the project.

PE&PS then follows a sequential, deliberate, nine-step process for the CA CSE transfer solution that addresses:

- ***Project Schedule, deliverables and milestones***
- ***The EVD method tasks that will be used to determine the EVD phases and sub phases needed for the NCSEAS solution***
- ***The end-product details/scope of the transferred CA CSE system, such as how many reports and forms the system will include***
- ***Deloitte resources required to complete the Inception, Elaboration, Construction, Transition and Operation phases.***

A key estimating guideline for Deloitte and the PE&PS tool is that work-effort estimation is not a "once and done" activity. Following the PMBOK Guide management principle of progressive elaboration, Deloitte will revisit the PE&PS project estimate, which is based on

the Fit Gap Analysis between the NCSEAS requirements and the CA CSE solution, after requirements and detailed design components are accepted by DWSS, to refine and further validate the build and test work efforts for the Project.

Deloitte EVD methodology provides integrated methods and tools that drive and support project planning and execution. The following figure illustrates how the PE&PS estimate for the Project provides direct input into the project staffing, budget, and work planning activities:

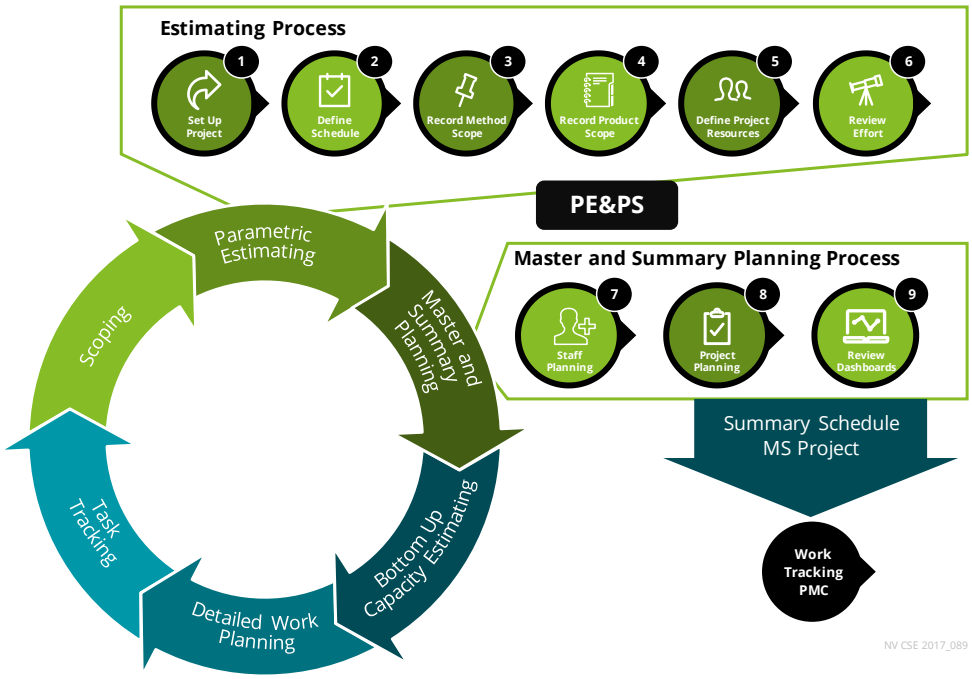


Figure 5-6. Deloitte's PE&PS Estimating Process Flow.

Deloitte has also used our experience in transferring the California solution to Oregon to validate estimates for tasks and the sequencing of tasks in project lifecycle. Following are the benefits of using PE&PS:

Benefit	***Description***
Consistency	• ***Consistency in the estimation approach for each major service area*** • ***Consistency in the data requirements to construct estimates*** • ***Consistency in output formats such as work plans and effort reports***
Reliability	• ***Availability of historical data allows for analysis and improvements to estimates***
Efficiency	• ***Integrates estimations with Deloitte's standard method and tools*** • ***Generates outputs to integrate with Project Management Tools***

Table 5-17. PE&PS Benefits.

5.6.1.3 Milestones

Phase	Sub-Phase	Milestone	Date
Inception May 2018 – Aug 2018	Initiate May 2018 – June 2018	Project Start	5/1/18
		Kickoff Project	5/17/18
		Approve Project Initiation and Management Deliverable	6/11/18
		Obtain Certificate(s) of Occupancy	6/20/18
	Plan July 2018 – Aug 2018	Approve Data Governance Plan	8/9/18
		Approve Data Conversion Management Plan	8/14/18
		Approve Development Hardware and Software Purchase Plan	8/22/18
		Approve Technical Approach Plan	8/23/18
Elaboration July 2018 – July 2019	Requirements Jul 2018 – Jan 2019	Approve Functional and Technical Requirements	1/15/19
		Approve Requirements Traceability Matrix	1/9/19
	Design September 2018 – July 2019	Joint Application Design Start	9/14/18
		Joint Application Design End	3/25/19
		Technical Joint Application Design Start	12/17/18
		Technical Joint Application Design End	3/25/19
		Approve Functional Design	7/29/19
		Approve Technical Design	7/29/19
		Approve Detailed Requirements	7/19/19
Construction Oct 2018 – June 2021	Development Oct 2018 – July 2020	Approve Business Continuity and Disaster Recovery Plan	7/1/19
		Approve Test Management Plan	8/19/19
	Test Aug 2020 – Feb 2021	Approve Training Management Plan	10/8/20
		Approve Training Materials for UAT	2/5/21
		System Testing Complete	2/26/21
		UAT Training Complete	3/5/21
Transition Sept 2020 – May 2022	UAT March 2021 – Aug 2021	UAT Start	3/1/21
		UAT Complete	8/31/21
	Stabilization Sept 2021 – Oct 2021	Stabilization Complete	10/27/21
	Train Sept 2020 – Mar 2022	Approve Web Based Training Development Plan	10/15/20
		User Training Complete	By Rollout
	Deploy Oct 2021 – May 2022	Pilot Start	10/27/21
		Pilot Complete	1/6/22
		Rollout 1	1/7/22
		Rollout 2	2/3/22
		Rollout 3	3/2/22
Operation May 2022 – May 2024	Maintain and Operate May 2022 – April 2024	System Certified	5/20/22
	Close May 2024	Project Completed	6/13/24

Table 5-18. Milestones.

5.6.1.4 Task Conflicts and/or Interdependencies

Deloitte develops our preliminary project plans using Microsoft Project, making it simple to highlight task conflicts and/or interdependencies between tasks. Deloitte's experience transferring the California system in Oregon has also given us unique insight into project interdependencies such as acquiring the transfer system to establish a proof of concept, which is needed for Joint Application Design. Deloitte also employed our extensive child support experience when scheduling the various tasks and activities. For example, Paternity Establishment tasks must be completed before Order Establishment tasks.

Furthermore, when tasks are scheduled and resource loaded, Microsoft Project automatically checks to determine if resources are over allocated, indicating a conflict in the tasks expected to be performed during that timeframe. Microsoft Project provides an overall Gantt chart view of the project that aligns the tasks, visibly highlighting any tasks that are conflicting with one another. Upon creation of the project plan, Deloitte addresses these as best as they are able to, and any remaining task conflicts are reviewed in detail with DWSS and any assistance the PMO vendor will provide at the start of the project. The goal of these reviews is to eliminate conflicts altogether or define risk mitigation strategies for conflicts that cannot be completely resolved at that time.

Microsoft Project also provides a way to highlight interdependencies between tasks. When scheduling tasks, Microsoft Project allows the user to drive the start or end date of a task based on another task. By determining the predecessors or successors for each task, it is possible to build task interdependencies within the project plan itself.

5.6.1.5 Estimated Time Frame for Each Task

The preliminary project plan submitted by Deloitte includes the tasks identified in the RFP. The tasks are scheduled with estimated start and end dates and total task duration. Once these dates are finalized and approved during the Inception phase, they are closely monitored through the project lifecycle.

The preliminary project plan adheres to the standard work breakdown structure format and contains start and end dates for major phases, activities, contractual deliverables, and milestones. The following table provides a sample of how tasks appear in Section IX: Preliminary Project Plan of our response, with clear time frames shown for each task. Tasks are broken down into subtasks, and the user can expand or collapse as desired to view dates and/or durations at the individual task level up through the phase as a whole.

Task Name	*Start*	*Finish*
4.3 Project Initiation and Management	*5/1/18*	*6/13/24*
4.4 Establishment, Maintenance, and Management of the Project Site	*5/2/18*	*5/6/24*
4.5 Project Schedule	*5/2/18*	*5/6/24*
4.6 Project Status Reports and Meetings	*5/7/18*	*5/6/24*
4.7 Technical Approach Plan	*5/7/18*	*10/5/20*
4.8 Business Continuity and Disaster Recovery Plan	*12/24/18*	*4/14/22*
4.9 System Capacity Plan	*1/10/19*	*10/27/20*
4.10 Development Hardware and Software Purchase Plan	*5/9/18*	*10/25/18*

Task Name	Start	Finish
4.11 Production Hardware and Software Configuration Plan	5/9/18	5/21/21
4.12 Database Development Plan	11/5/18	10/12/20
4.13 Application Development Plan	10/2/18	3/18/21
4.14 Ease of Use Management Plan	5/2/18	3/18/21
4.15 Database Configuration Management Plan	1/17/19	7/15/21
4.16 Data Governance Plan	5/1/18	7/7/21
4.17 Release Management Plan	6/8/21	1/6/22
4.18 Data Conversion Management Plan	5/15/18	1/20/22
4.19 Test Management Plan	5/9/19	7/1/21
4.20 Training Management Plan	7/1/20	2/28/22
4.21 Web-Based Training Development Plan	8/3/20	3/18/22
4.22 Security Management Plan	3/29/19	6/7/21
4.23 Operations Support Plan	4/1/21	8/8/23
4.24 Maintenance Transition Plan	10/4/21	2/12/24
4.25 Warranty Support Plan	10/21/21	11/10/22
4.26 Development and Operations Hardware and Software	8/9/19	5/24/21
4.27 System Requirements and Design	5/2/18	7/29/19
4.28 Development, Modification and Conversion of System Software Code	5/2/18	11/3/21
4.29 Legacy Data Conversion	9/4/18	1/4/22
4.30 Testing and Accepting New System	10/2/18	10/27/21
4.31 Training	5/29/20	4/11/22
4.32 System Implementation	8/30/21	5/5/22
4.33 Warranty Period	3/18/22	6/4/24
4.34 System Certification	10/15/18	5/20/22
4.35 Transition Maintenance and Operation of System to State	4/1/21	2/15/24
4.36 Project Closeout	3/19/24	5/14/24

Table 5-19. Task Time Frame.

5.6.1.6 Overall Estimated Time Frame From Project Start To Completion For Both Implementation Contractor And State Activities, Including Strategies To Avoid Schedule Slippage.

The overall estimated time frame is in line with the RFP. The high level phases match the expected phases that are discussed in the RFP Section 1 Project Overview.

Deloitte's preliminary project plan includes a projected overall time frame for the project, beginning in May 2018. Inception, Elaboration and Construction are planned to be completed in forty-two (42) months, Implementation and Operations follow subsequently for a period of six (6) and twenty-four (24) months respectively. This plan accounts for both Deloitte's activities as well as the activities performed by DWSS. These overall project dates are tentatively defined based on the timelines in the RFP. If the start date of the project changes, for reasons unknown at this time, the subsequent tasks shift and a new end date is determined.

The following table highlights common strategies and how they are used by Deloitte to prevent schedule slippage to the best of our ability:

Strategy	*Our Practices*
Create Detailed Project Plan	• ***Create a project plan that includes the project tasks and sub-tasks*** • ***Resource load and balance the project plan to prevent unrealistic task timelines based on resource available***
Manage tasks using project plan	• ***Refer to the project plan daily to guide tasks*** • ***Update the project plan immediately when tasks span longer than their expected duration to assess downstream impacts*** • ***Analyze impact from external dependencies, such as Agencies with Child Support interfaces***
Facilitate Internal, Cross-track Communication	• ***Hold cross-track meetings to assess the impact of one team's work on other teams***
Communicate with Leadership	• ***Provide frequent, detailed status reports and updates to Agency leadership, facilitating cross collaboration when issues arise***
Manage Risks and Issues	• ***Implement a tightly controlled risk and issue mitigation process***
Monitor Project Health Metrics	• ***Utilize dashboards available in PMC to monitor key project and performance metrics such as Actual versus Schedule Efficiency, Actual versus Baseline Efficiency and Schedule Performance Index***
Manage Scope	• ***Utilize the agreed upon change process for any changes to the baseline requirements and design***

Table 5-20. Schedule Slippage Mitigation.

5.6.2 Written Plan Addressing Roles and Responsibilities

5.6 PRELIMINARY PROJECT PLAN

5.6.2 Vendors shall provide a written plan addressing the roles and responsibilities and method of communication between the contractor and any subcontractor(s).

Deloitte is the single point of contact for DWSS and assumes full responsibility, accountability and authority for meeting the project's requirements under the contract. As an Implementation Contractor, Deloitte does not intend to team with any subcontracting company. This gives Deloitte the flexibility to make quicker decisions, and implement solutions faster during the project execution.

Firm	*Role*	*Responsibilities*
Deloitte	***Implementation Contractor***	• ***Single point-of-contact for DWSS*** • ***Overall implementation of the NCSEAS*** • ***Lead for the phases of the project – including requirements, design, development, testing, , training, data conversion, pilot, implementation, maintenance and Operations*** • ***Coordinate with other vendors on project (i.e. PMO Vendor, QA Vendor, IV&V Vendor) to drive implementation*** • ***Support Federal Certification Process***

Table 5-21. Deloitte Roles and Responsibilities.

5.6.3 Incorporating Project Plan into Contract

5.6 PRELIMINARY PROJECT PLAN	
5.6.3	The preliminary project plan shall be incorporated into the contract.

Deloitte confirms incorporation of the preliminary project plan into the contract. Please see Section IX: Preliminary Project Plan for the initial version of the preliminary project plan.

During the project initiation phase, we work with DWSS and other stakeholders (i.e., PMO contractor, QA contractor, and IV&V contractor) to refine this plan if necessary, resulting in a final detailed project plan to guide the management and execution of project phases, deliverables, and milestones.

Deloitte has worked successfully with the State of Oregon and many of the same vendors such as CSG to propose, refine and elaborate a project schedule in a collaborative environment.

Deloitte's adherence to the project plan is maintained throughout the lifecycle of the NCSEAS project, and we realize how imperative this is to the on-time delivery of Nevada's new NCSEAS solution. Deloitte will use our change control process to record any deviations to the project schedule that are attributed to scope and schedule. We will work with DWSS to establish a change control board to govern any changes to the overall schedule. The schedule will be baselined upon contract signing and deviations will be agreed to by both DWSS and Deloitte.

5.6.4 First Project Deliverable

5.6 PRELIMINARY PROJECT PLAN	
5.6.4	The first project deliverable is the finalized detailed project plan that shall include fixed deliverable due dates for all subsequent project tasks as defined in Section 4, Scope of Work. The contract shall be amended to include the State approved detailed project plan.

Deloitte acknowledges the submission of the finalized detailed project plan as the first project deliverable for the NCSEAS project. This finalized plan includes deliverable due dates for tasks, work products, and deliverables defined in RFP Section 4. We understand that the contract will be amended to include the State approved detailed project plan. We continue to update detailed project plan to reflect the changes in the schedule and submit the updated plan to DWSS on periodic basis for approvals.

5.6.5 Potential Risks and Mitigation

5.6 PRELIMINARY PROJECT PLAN	
5.6.5	Vendors shall identify all potential risks associated with the project, their proposed plan to mitigate the potential risks and include recommended strategies for managing those risks.

Deloitte has a successful track record using a proven proactive risk management approach, supported by standard tools and methodologies.

We recognize that there are certain types of risk that are common for this type of implementation.

Deloitte takes a proactive and systematic approach to risk identification to confirm that the relevant risks are identified and considered at the beginning of the project with the risk log

being completed with a listing of potential risks, an owner and a mitigation plan. Risk mitigation is a project commitment from the stakeholders and a proactive and methodical risk identification process is most effective in preventing risks from becoming issues.

The following table provides examples of potential risks and planned mitigation strategies that provides understanding of how Deloitte manages these potential risks. We participate in regular risk management meetings and our project leadership team will work closely with DWSS and your PMO Contractor to actively identify, mitigate and manage the risks identified as part of the project.

Identified Risk	*Mitigation Strategy*
External Agencies may have development projects underway that impact data exchanges/interfaces with the NCSEAS system OR Other agencies deprioritize their interfaces with the new NCSEAS system	***NCSEAS project will require numerous interfaces with stakeholders to meet business goals. Deloitte will assist with the planning and communication with those partners. It is ultimately the responsibility of DWSS to communicate at executive levels with the other partners to prioritize the interface requirements needed for a successful child support implementation. Deloitte will proactively identify project dependencies early in the project and work to develop mitigation strategies to reduce these risk.***
End Users may have challenges adopting the new system due to the changing business processes	***Deloitte's implementation and training approach is tailored specifically to address this risk. Deloitte team will work early on with Field Operations Team to identify changes in Business Process needed to seamlessly roll out new system and train users. The implementation and training teams will communicate with end users early and often to enable and prepare for change.***
Lack of communication among large number of stakeholders can cause problems with project direction, accountability, and morale	***Delivering a complex child support system requires coordination between multiple stakeholders, including the legislature, state executives, and other vendors. Lack of proper communication among stakeholders can lead to internal control breakdown, unclear direction, lack of accountability, and lowered morale. Deloitte participates in the project communication strategies outlined in the Project Communication Management Plan, and Stakeholder Communication Plan to help drive open and transparent communication practices across the project. We also define the right governance model that enables proper communications to confirm information is delivered to the right audiences at the right time.***
Having the right resources with the experience in the California system and Child Support implementations	***Deloitte has maintained and operated CA CSE for over six years and implemented over 82 changes to the CA CSE system. In addition, Deloitte has 350 Child Support practitioners at our disposal for this project of which have implemented multiple state CSE systems. Deloitte has over 150 resources across our practice that have California CSE experience.***
DWSS subject matter experts may not be available to the project team when required due to competing priorities	***Deloitte resources provide in-depth knowledge of the child support industry as well as a wealth of experience delivering large systems, including system transfer, custom development, and integration. Deloitte works in partnership with DWSS's Business and Functional Design Manager and Child Support Technology Chief to identify DWSS resources needed to meet the project timelines as early as feasible so that DWSS subject matter experts can be planned far enough in advance to schedule their time.***
Inadequate project planning may impact the delivery of the project on-time, within budget that meets requirements	***Deloitte develops a detailed project plan at the beginning of the project and adheres to the project plan. We use the project plan to drive project tasks and outcomes. We review the project schedule regularly and use it to measure and report progress.***

Identified Risk	*Mitigation Strategy*
If proper scope control measures are not applied, scope creep and deviation from the transfer paradigm may occur, resulting in schedule and cost-overruns	***As this is a transfer of CA CSE solution, there's a risk of deviating from the transfer paradigm and add more scope in the process. As we did in our recent transfer project in Oregon, we will use the functional prototype of CA CSE solution as a guideline during the JAD sessions and finalize design based on detailed requirements deliverable. We also define and communicate scope parameters (i.e. Fit gap analysis) for project team members related to requirements and design expectations.***
Competing Priorities of DWSS Staff	***Deloitte works in partnership with DWSS's Project Manager and stakeholders to identify DWSS resources needed to meet the project timelines as early as feasible so that DWSS subject matter experts can be planned far enough in advance to schedule their time.***
Communications breakdown – could impact the project in an adverse manner	***Lack of frequent and accurate communications may cause delays and budget over runs and jeopardize stakeholder buy-in. The Communication Plan and Stakeholder Communication Plans sets forth procedures to be followed for effective and timely communication.***
Delay in obtaining the CA CSE solution	***Deloitte supports DWSS in preparing the Memorandum of Understanding between CA and NV to transfer the CA solution before the start of the project. We have experience and lessons learned from the transference of CA CSE to Oregon.***
The code and other system artifacts transferred from CA may be incomplete	***Deloitte performs a thorough code review as soon as available to identify missing code, documentation, and system artifacts.***
Maintaining Business continuity during implementation when solution is being rolled out	***Deloitte plans the implementation activities with the stakeholders in advance and provide seamless data flow between current NOMADS system and proposed the NCSEAS solution***
Delay in Deliverable submission and review process may have a cascading effect on the schedule and may result in over allocation of the resources involved.	***Delay in deliverable submission and/or review could impact the schedule and budget. We'll support DWSS in identifying a core group of review team members whose input is require. In addition to this, we'll identify alternative reviewers early in the process. In accordance to Project Plan, we'll share schedule outlining anticipated receipt date of deliverables, and monitor schedule for overlapping review team members and dates. As with our other Child Support engagements, we will use the Deliverable expectation document to provide a clear view of the outline and high-level content of the deliverable prior to deliverable development. We establish quality assurance procedures that incorporate best practices of 'Do's' and Don'ts for writing deliverables for staff who are involved in deliverable development. We incorporate NV specific terms in this document to help our authors use the terms the DWSS users are familiar with. We'll encourage informal review cycles where appropriate.***
Unknown potential Regulatory/Policy/Legislation (Federal, State, and/or Department) changes could result in requirements and/or design changes.	***Lack of empowered Governance model or one that will not make needed decisions on a timely basis. We'll proactively analyze legislation or policy, provide our point of view where DWSS can request waiver, and communicate delay in compliance. We will identify the right governance structure with DWSS to be enacted day one of the project prior to project inception.***
Delays in project schedule due to in-experience in working in Nevada	***Deloitte has extensive experience in working collaboratively with DWSS IS Teams (RT&T, Operations, DBAs, E&P, and Project Management), Administration, and EITS teams for past six years. This has helped us in successfully align the project implementation methodology with DWSS processes.***

Identified Risk	*Mitigation Strategy*
Delay in data clean-up may result in inaccurate and unnecessary data being converted to NCSEAS	***We work with DWSS to identify data clean-up priority items. In Oregon, we are actively involved in assisting the Agency in monitoring the clean-up activities and helping with the prioritization of the clean-up based on the needs of the CA CSE data model.***
Rapid changes in technology being used may impact the technical architecture and or design	***We proactively monitor the changes in the technology landscape involved in NCSEAS and identify any impact it may cause to the solution. In Oregon, we proactively monitored and recognized that Angular JS we are using for the customer portal was changing rapidly to Angular higher versions. We worked with the Agency to find a way to fit the changes in the schedule so that the schedule is not adversely impacted*** ***We engage our IBM Alliance to understand the changes that are in the horizon much in advance and understand any impact that may have on the project.***
Political or Immigration policies may impact resource availability and result in project delays	***As a large systems integrator, we have dedicated immigration and legal departments who monitor such situations closely work with our project teams to mitigate risks associated with immigration. We have a dedicated organization who work with more than 100 top tier suppliers who can help find the appropriate resources in short notice. In Oregon, we demonstrated that we can efficiently manage our resource pool and mitigated the challenges imposed by the immigration law changes.***
Changing business processes may impact current organizational structure and impact customer adoption at implementation	***We recommend to implement a model program committee as we did in the current Oregon engagement. This committee will include DWSS leadership, DWSS Office/field staff, Deloitte, and other relevant stakeholders. This committee will help in determining what organizational changes are necessary to adopt the new system.*** ***Currently in our Oregon engagement, we provide regular previews of the working solution in its end-state form by way of web-casts and road shows. This approach mitigates the risk of users seeing the system for the first time after it is put in production and improves user adoption rate.***

Table 5- 22. Deloitte's Identified Risks and Mitigation Strategies for the NCSEAS Project.

5.6.6 Staff Location

5.6 PRELIMINARY PROJECT PLAN

5.6.6 Vendors shall provide information on the staff that shall be located onsite in Carson City. If staff shall be located at remote locations, vendors shall include specific information on plans to accommodate the exchange of information and transfer of technical and procedural knowledge. The State encourages alternate methods of communication other than in person meetings, such as transmission of documents via email and teleconferencing, as appropriate.

The successful delivery of the NCSEAS project depends on qualified resources who know Child Support Enforcement, know the CA CSE solution, have experience with transferring the same for another state, and know DWSS's technical and functional environment. We cover the team and our approach to identifying the most experienced individuals in Section VII: 5.4 - Vendor Staff Skills and Experience Required.

For the NCSEAS project, the Deloitte team is headquartered in Carson City, Nevada, augmented by team located in Deloitte's Solution Delivery Center.

The figure that follows captures the work that is done on-site vs in a Deloitte's Solution Delivery Center:

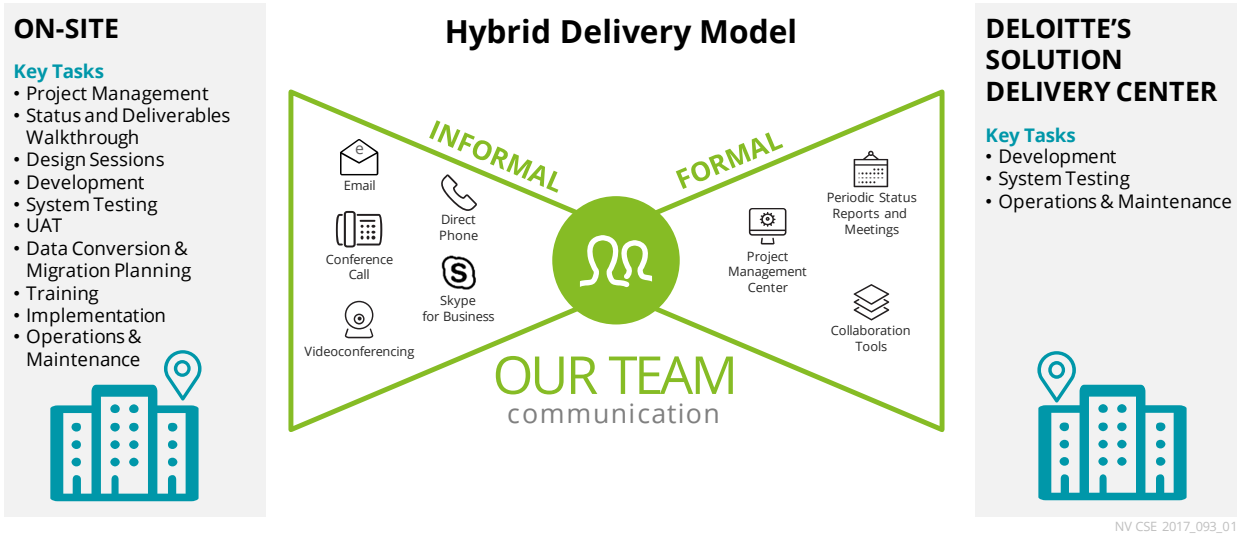


Figure 5-7. Hybrid Delivery Model.

On-Site Work

Majority of the NCSEAS project activities will be performed in NV. We work closely with you to align the right people to the right tasks and subject matter areas on-site. Our goal is to reduce the workload on your staff while providing us with the information we need to deliver the NCSEAS solution that meets your vision.

5.7 Project Management

5.7 PROJECT MANAGEMENT

Vendors shall describe the project management methodology and processes utilized for:

Project management methodology aligning to PMBOK

The project management methodology for the NCSEAS project is directly aligned with industry-leading frameworks. We will use standards defined in PMBOK for project management and the Software Engineering Institute's Capability Maturity Model Integration to define the foundational framework. The project management methodology included in Deloitte EVD methodology integrates these industry-leading practices with our project management methodology developed through numerous CSE and HHS engagements. It brings tools, templates, and examples as a foundation for the project deliverables.

SECTION HIGHLIGHTS

Building on a Foundation of Experience

- ***CSE experience in California, Oregon, Florida, and Pennsylvania***
- ***Project management approach to proactively manage issues and risk***
- ***Methodology tailored for transfer solutions and uses experience of CA CSE transfer***
- ***Robust tools, such as the Project Management Center (PMC), to track activities and measure the health of the project***

Collaboration Supported by the Project Management Center tool

Our project management approach is collaborative and begins with reviewing the project management plan and activities with the PM contractor, QA contractor, IV&V contractor, and DWSS leaders to confirm alignment with overall project governance and the project schedule defined by DWSS and the PM contractor. The approach includes rigorous project management discipline, and deep knowledge of functional and technical environments in large, complex information systems like NCSEAS.

The Project Management Center (PMC) supports and automates the project management methodology. PMC customizes Hewlett Packard's Project and Portfolio Management (PPM) software tool that is tuned for large-scale system implementation and transfer projects. We have successfully employed PMC on many large HHS/CSE projects and previous projects for DWSS and recommend it for the NCSEAS project's management approach. Once the PM Contractor and DWSS leadership identify and define the project planning structure and guidelines, the plans can be fed into the PMC tool to manage the conformance of project team members and their work to these plans. PMC is used for management of action items, change requests, issues, risks, and decisions. It comes with pre-defined and customizable dashboards, workflows, portals, and reports, providing insight into the project's health. DWSS and identified stakeholders are provided direct access to PMC so that they can monitor the progress of the project at any time, providing greater transparency of project status.

5.7.1 Project Integration

5.7 PROJECT MANAGEMENT	
5.7.1	Project integration to ensure that the various elements of the project are properly coordinated;

Methodology to create an integrated environment

Deloitte EVD methodology provides a consistent, efficient, and effective approach for managing successful projects that maintains alignment to the nine PMBOK areas to manage integration, scope, cost, time, quality, resources, communications, risk, and procurement.

The integration management thread of our project management methodology is modeled after PMI guidelines defined as the coordination of various project processes and activities to deliver a comprehensive, integrated solution.

All projects are faced with many moving parts, changing needs and constraints, which can affect the project's fixed resources, like time and cost baselines, scheduling constraints, staffing issues, iterative development issues, and much more. Deloitte EVD methodology finds ways to make progress and overcome these challenges to confirm that the Project Management Plan and Project Schedule are successfully implemented.

Strong communication and collaboration among Deloitte, DWSS, and additional stakeholders facilitates coordination between the various elements of the project to meet deadlines, avoid duplicative work, maximize resources, and produce high quality deliverables. We use the project schedule to track and monitor the project and timelines. It includes a list of assumptions and risks that are associated with the various impacted projects. Informal and formal status meetings verify integration and productivity of resources.

To achieve project integration and coordination throughout the scope of work defined in RFP Section 5, our EVD methodology uses the following principles:

Principle		Benefits to DWSS
	Employ existing knowledge and experiences from past DWSS and similar projects.	• ***Accelerated startup from familiarity with DWSS organization and processes*** • ***Effective collaboration methods***
	Utilize established toolsets that Deloitte brings to the NCSEAS project to assist with the collaboration and integration.	• ***Transparency of project activities*** • ***Measurement of project progress*** • ***Tracking of project health*** • ***Management of scope, timeline, and resources***
	Foster a collaborative environment that shares Deloitte's child support enforcement experience from California, Florida, Pennsylvania, and ongoing in Oregon, and specifically insights into how the CA CSE system can be transferred and customized to meet Nevada's requirement.	• ***Improved coordination and transparency among Deloitte, DWSS, and other contractors (PM, IV&V, and QA)*** • ***Proven yet appropriately configured solution for DWSS*** • ***Reduced risk due to thorough understanding of fit gap of CA CSE system***

Table 5 -23. Benefits of the Project Integration Guiding Principles.

Project Integration Processes Supported By Project Tools

In addition to the PMC, which is used to coordinate project activities, action items, change requests, issues, risks, and decisions across the NCSEAS project, Deloitte leverages parallel tools such as JIRA, Jama Contour, Microsoft Share Point and Skype for Business to support project integration. These tools have been used by Deloitte on other HHS projects. JIRA tracks defects and changes from identification through resolution. Jama Contour tracks software development activities from requirements analysis through deployments. Tasks are synchronized between JIRA and Jama Contour, allowing end to end traceability between requirement artifacts and EVD tasks. DWSS has visibility and transparency into NCSEAS processes and current status using JIRA and Jama Contour.

5.7.2 Project Scope

5.7 PROJECT MANAGEMENT
5.7.2 Project scope to ensure that the project includes all the work required and only the work required to complete the project successfully;

Deloitte's methodology for scope management consists of a thorough fit gap analysis of the requirements outlined in the NCSEAS's requirements and the CA CSE solution and managing the scope for any newly identified changes.

Fit Gap Analysis

NCSEAS project scope is managed to the RFP requirements. The intent is to leverage as much of the CA CSE system as it fits with NCSEAS's mandated requirements to identify gap and disparities between NCSEAS requirements and the CA CSE solution.

Completion of the fit gap analysis maximizes the time and productivity during requirements sessions. Deloitte has mapped NCSEAS functional and technical requirements to the CA CSE solution and performed analysis of the fits and gaps to identify the degree of fit or gap. Deloitte's approach addresses the gaps that also may draw on experiences from applying the CA CSE solution to the OR Origin solution. The Requirements Traceability Matrix is updated based on fit gap analysis outcomes. The fit gap analysis outcomes are used to form the scope and blueprint for the NCSEAS project. The following figure highlights the fit gap component of our methodology.

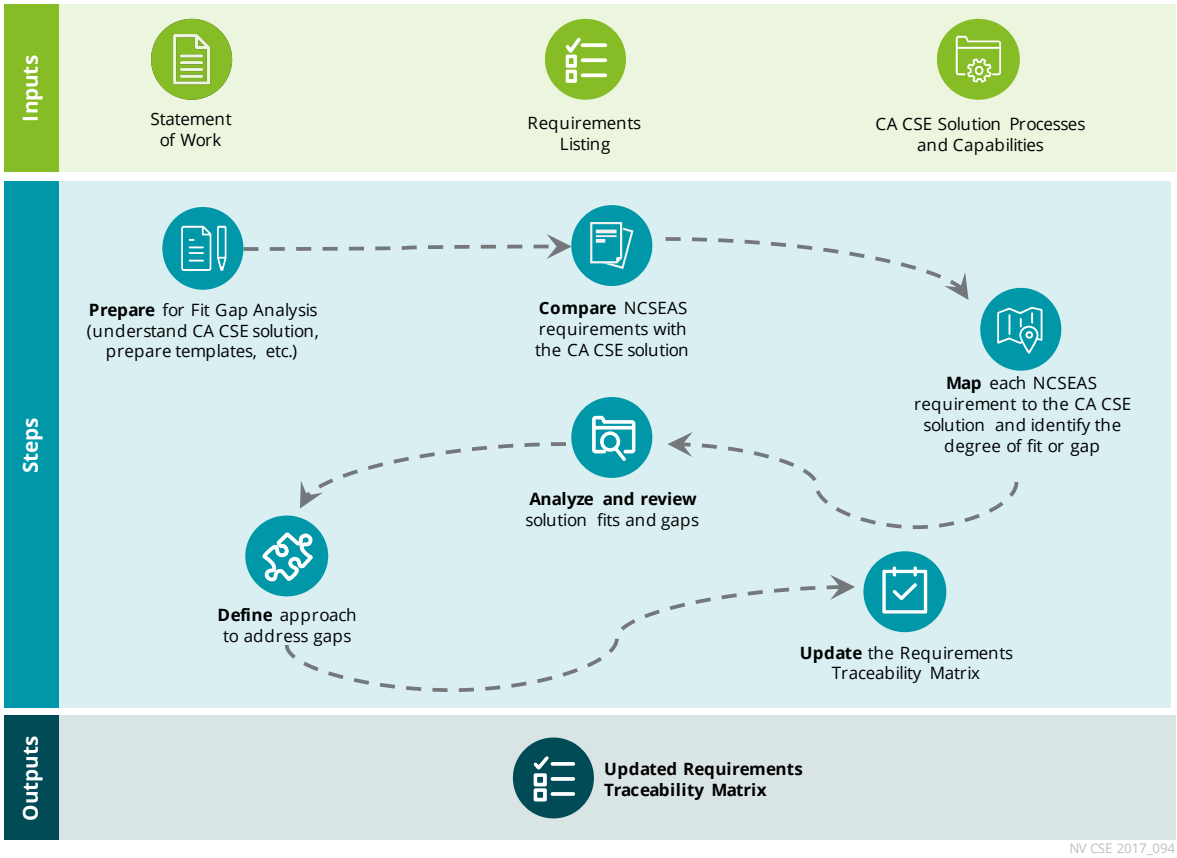


Figure 5 -8. Fit Gap Analysis Approach for NCSEAS.

Shared Scope Management Through the Change Control Process

Meeting federal mandates for completion of the NCSEAS project and preventing 'scope creep' so that only required work is completed for the project is facilitated by actively managing scope. Changes in scope are inevitable in the project the size of NCSEAS, our approach uses proactive identification, documentation, and sound project management procedures to manage scope changes on the project.

Project scope is first communicated to stakeholders during the project kick-off meeting. The initial scope is based on NCSEAS requirements and the fit gap analysis between NCSEAS requirements and the CA CSE system. These requirements are validated and then traced across the project lifecycle. Deloitte EVD methodology collects and manages the functional and technical requirements using tools and proven experience in gathering, developing, integrating and reporting requirements. For the NCSEAS project we are proposing the use of Jama Contour for managing requirements and traceability. Scope is captured through specification deliverables such as the Requirements Traceability Matrix, Technical Requirements/Design, Functional Requirements/Design, and Detailed Design.

Throughout the project, potential scope changes are identified as soon as possible and are discussed, analyzed, and documented for DWSS. Deloitte performs the impact and schedule analysis of changes and works with DWSS to bring the impact analysis and amended project schedule to the Change Control Board for review. The change control process

discussed in Section VII: 5.7.5 Requested Changes, will be used to efficiently manage any changes as they occur to keep the project timeline on track. In the event that changes need to be made due to internal or external factors, the overall scope of the project will be adjusted. If required, the detailed project budget and schedule will be updated and re-baselined to account for changes, and the information will be communicated to DWSS management and project leadership, as appropriate.

5.7.3 Time Management

5.7 PROJECT MANAGEMENT
5.7.3 Time management to ensure timely completion of the project. Include defining activities, estimating activity duration, developing and controlling the project schedule;

Project Schedule Estimation Methodology for Transfer Solutions

To support timely project completion, the Deloitte project management methodology leverages knowledge gained from experience with similar projects, understanding of the DWSS environment and team, and a proven estimating approach to determine task timelines and dependencies.

Specifically, we leverage estimation techniques that draw on assessment of the size, scope, and impact of changes to the CA CSE technical and application architecture, as opposed to the development of a new system. Additionally, we use historical data from the transfer of the CA CSE solution to the OR Origin system to improve our estimates. Our Project Estimator and Planning Suite (PE&PS) tool (referred in Section VII: 5.6.1.2 Planning Methodologies) is used to develop our staffing and effort estimates for the NCSEAS system. Our estimation tool was built by professional estimators, and was calibrated specifically for the NCSEAS project. The outputs from our effort estimation tool provide detailed breakdowns of the amount of effort that is required to complete the NCSEAS Project by: (1) project phases, (2) functional decomposition, and (3) deliverable.

This tool has been used to estimate system replacement efforts for other CSE systems, and has been tested and refined for accuracy. The goal is to develop an accurate estimate and capture the correct effort levels to successfully deliver the project. For illustrative purposes, we have included a snapshot of the tool in the following figure.

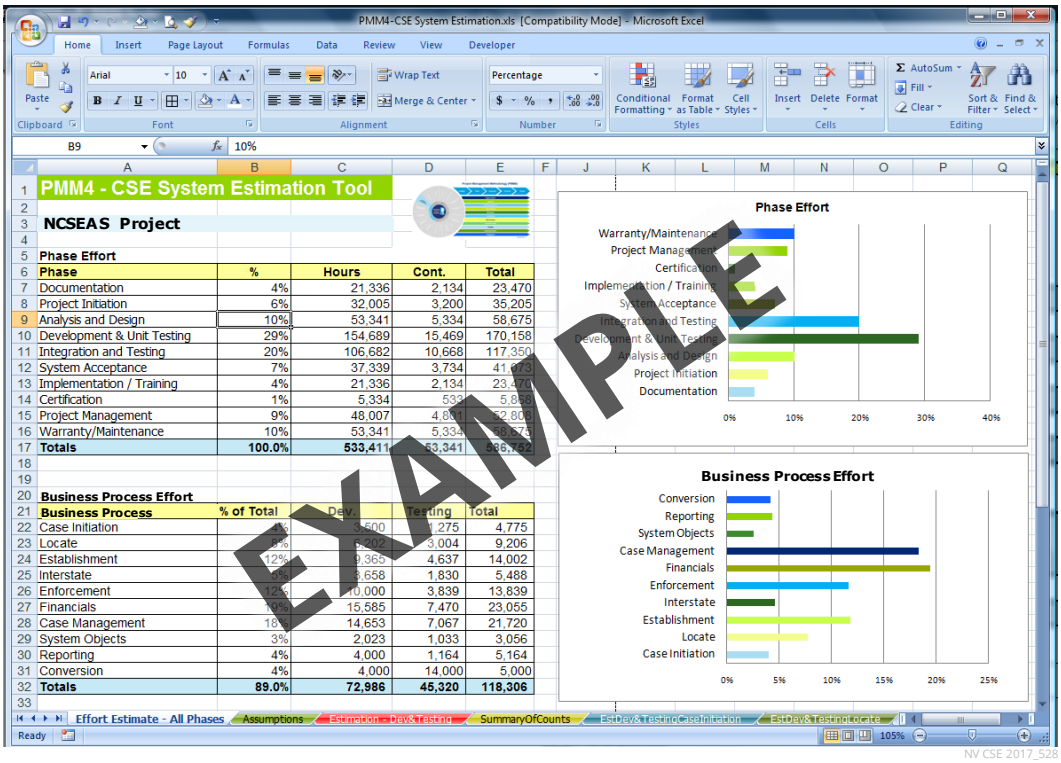


Figure 5-9. Deloitte Project Estimator and Planning Suite (PE&PS) Tool.

Iterative Time Management Process

We take an iterative approach to implement CSE business processes and technical components while transferring and customizing the CA CSE system for NCSEAS. The CSE components include the following business processes:

- ***Intake, Self Service, Enforcement***
- ***Case Management, Customer Service, Locate***
- ***Establishment, Interstate***
- ***Financials***
- ***Reports***

These components are part of higher level grouping and are placed into iterations, and each iteration covers requirements validation, design, development, and unit test of the included components. The iterative strategy saves time and reduces risk by allowing for lessons learned in prior iterations to be applied to subsequent iterations.

We manage time during each iteration through a process that involves three main steps as described in the following table: defining activities, estimating activity duration, and developing and controlling the schedule.

Step	*Description*
Defining activities	***As part of scope definition and the development of the project schedule, the Deloitte team works closely with DWSS to define the tasks required to execute the overall project and define the activities required to complete each task. Our project manager and our project team identify the logical and preferred relationships between activities. We accomplish this primarily through processes that leverage: (1) our team's experience with large-scale public sector system implementations, and (2) our team's practical functional understanding of the CA CSE system and (3) our team's lessons learned in transferring CA CSE to the OR Origin project.***
Estimating activity duration	***Outputs from our Project Estimator and Planning Suite (PE&PS) tool are used to create a detailed project schedule that includes the activities required to complete the deliverables required by the RFP within the timeframes outlined in our project schedule. We use Microsoft Project, and develop a fully loaded plan with tasks, deliverable, dependencies, and resource types and availability to derive our staff load, needs, onboarding, and off-boarding schedules. The Deloitte project management team staffs resources, working closely with dedicated Deloitte staffing managers. The Deloitte NCSEAS project leadership takes into account staff vacation schedules, and DWSS staff availability to foresee any stresses to the schedule. Team calendars are routinely updated to track upcoming activities and proactively address any scheduling changes. Section VII: 5.4 Project Schedule outlines the schedule format and details the specific tasks and subtasks identified for NCSEAS.***
Developing and controlling the schedule	***In order to determine whether a project is going to be delivered within the timeframes originally proposed, it is necessary to track the project at a level where corrective action can be made within a period of time to rectify any schedule issues. One method to do this is to measure the progress of major and minor milestones as they occur. Components are also tracked at a granular level to determine if items are on track or running behind, reasons for deviations, and mitigation steps to bring items back on track. Such tracking supports project transparency.*** ***The regular status meetings focus on reviewing the progress of these milestones and removing any obstacles that exist. The project schedule is also reviewed with executive management at the steering committee meetings to review the current point in the schedule, identification of completed activities, milestones as well as raise and provide mitigation strategies to any potential variances to the baseline schedule. As new tasks and subtasks are identified, they are factored into the project schedule and tracked accordingly.*** ***One of the key methods used for controlling schedule variance is the critical path method, a project management technique that analyzes what activities have the least amount of scheduling flexibility, and then predicts project duration schedule based on the activities that fall along the "critical path." Activities that lie along the critical path cannot be delayed without delaying the finish time for the entire project. The Project Manager monitors the critical path carefully to quickly adjust staff priorities and the project schedule. This is done so there is a transparent view of project progress and movement for the required stakeholders.***

Table 5 -24. Steps of Time Management Process.

PMC provides functionality to track a project's time management using effort tracking, time sheets, and earned value reporting. Project team members can view assigned and upcoming tasks, report the time spent on tasks, and provide feedback based on progress and status. These inputs are used to provide real time tracking and reporting of key project metrics including: overall project status, project health, actual versus budget hours by person, earned versus burned hours, and schedule progress. Additionally, the PMC's exception and reporting capabilities provide oversight to tasks or milestones that are starting or finishing late, tasks due in the upcoming weeks, tasks exceeding the baselined planned effort, the baselined effort versus the actual effort, and delinquent time sheets.

5.7.4 Management of Issues and Resolution Process

5.7 PROJECT MANAGEMENT	
5.7.4	Management of contractor and/or subcontractor issues and resolution process;

Deloitte does not expect to utilize subcontractors for this project. Work is expected to be completed by Deloitte staff who work closely with the NCSEAS staff, project leadership, and other key stakeholders. Staffing requirements for support or incidental services occur from time to time in Deloitte's client engagements. Should this occur, we will go through our CWS team.

Issues Management Methodology

The approach to issue response and resolution identifies issues and resolves them before they significantly impact the NCSEAS project. This avoids impediments to productivity, rework, and jeopardy of the NCSEAS solution quality and timeliness. The issue escalation process is described in the following table. Issues are managed through:

Differentiator	Deloitte's Methodology
Empowerment	***A project environment that empowers team members to proactively identify and escalate project issues.***
Transparency	***The PMC tool, which provides transparency into current project issues, supporting decisions considered, and actions to be taken.***
Collaboration	***The PMC tool provides the ability for NCSEAS system project team members to collaboratively identify, track, and manage issues and action items.***
Accountability	***The issue tracking and decision management process provides clear ownership of project issues. There is a clearly documented process for tracking issues and outstanding questions, documenting mitigation strategies, and addressing overall impact of the issue on the project.***
Authority	***Deloitte works with DWSS during initial project start up to identify a DWSS resource who is responsible for resolving issues and making decisions that cannot be resolved collaboratively by the project team.***

Table 5 -25. Issue Management Methodology.

Issue Management Roles and Responsibilities

Issue management is driven by effective communication between stakeholders and the Deloitte team. We work with DWSS to set parameters for reporting issues consistently. The table that follows defines roles and responsibilities across the Deloitte team, the DWSS project team, and the PM contractor for the NCSEAS issue management process.

Role	Responsibilities
PM contractor	• ***Define overall project management plan and issue management process.*** • ***Set up regular meetings to review the issue tracker and contingency approach.*** • ***Identify and document issues in the issues log.***
Deloitte project manager	• ***Work with the DWSS project manager and PM contractor to define project-specific requirements for the issue management process.***

Role	Responsibilities
	• *If tailoring is necessary, communicate the change to the PM contractor to update the project management plan and corresponding issues log and document the changes in the tailoring log.* • *Identify and validate issues in the issues log.* • *Review and approve issue resolution plans and assignments.* • *Track issues assigned to the team leads and escalate unresolved issues when necessary.* • *Report issue status in weekly and monthly meetings.*
Deloitte team leads	• *Assign team members to issues based on their availability, workload, subject-matter knowledge, and level of authority.*
Deloitte team members	• *Identify and document issues in the issues log.* • *Escalate issues when necessary.* • *Identify an action plan to close an assigned issue.* • *Manage assigned issues to closure.*
DWSS project manager and subject matter specialists	• *Identify and document issues in the issues log.* • *Communicate issues to the project team.* • *Review and approve proposed issue resolutions in a timely manner.* • *Complete necessary actions for issue resolution.* • *Support go-forward processes based on approved issue resolution.*

Table 5-26. Issue Management Roles and Responsibilities.

Issue Types

Based on experience working with other state agencies on similar child support enforcement projects, we have identified different types of issues, as represented in the following figure.

Issue Type	Description
Contract	*Contract issues, such as a signed agreement between Deloitte and the client.*
External	*Environmental factors largely outside the control of the project team, such as cultural, legal, or regulatory matters.*
Financial	*Issues related to the budget or cost structure of the project.*
Functional	*Matters related to the overall function of the product, such as requirements or design.*
Quality	*Deviations from quality requirements.*
Organization	*Internal, client, or third-party organizational or business changes, such as shifts in executive leadership roles.*
Performance	*Issues associated with the application's performance, such as response time, stress testing, and development environments.*
PM	*Project management issues, such as communications and status reporting.*
Governance	*The ability to properly manage the program, timely decision making in accordance with agreed upon contract, and escalation path for timely decisions and issue resolution.*
Resource	*Matters related to project resources, such as changes in key personnel.*
Schedule	*Issues related to the project schedule and related tasks, including those involving the project timeline.*
Scope	*Considerations related to project scope, such as process, module, and development objects.*
Technical	*Software or hardware, including infrastructure related to the project.*
General	*Any issue that cannot be categorized into one of the categories above.*

Table 5-27. Issue Types and Descriptions.

Issue Priorities

In order to assess the timeline needed for resolution and/or escalation, the issues log provides the following recommend priorities:

- ***Critical. The issue is jeopardizing overall project objectives and must be addressed immediately (within 24 hours).***
- ***High. The issue is having a significant negative impact on the project (for example, cost overruns or milestone delays) and must be addressed within a two week period.***
- ***Medium. The issue is having a negative effect and should be addressed, monitored, and controlled using regular project issue management processes.***
- ***Low. The issue has minimal effect and should be addressed as cost and schedule permits.***

Issue Escalation Levels

The following figure outlines recommended issue escalation levels (in terms of business days) for unresolved issues:

Escalation level	*Role description*	*Criteria*
Level 1	***Project manager or team leads***	***An unresolved issue that is past due by five or fewer days.*** ***High-priority and critical issues are brought to the project manager's attention immediately.***
Level 2	***Project sponsor, project director, project operations committee***	***Unresolved issue that is past due.*** ***Unresolved critical issues are brought to the project director or project sponsor immediately.***
Level 3	***Steering committee, executive leadership***	***Unresolved issues that are past due by more than ten days.*** ***Unresolved critical issues are brought to the attention of executive leaders immediately.***

Table 5-28. Issue Escalation Levels.

Issue Meetings

We conduct regular checkpoints with stakeholders to discuss relevant issues. The project management team works with the DWSS team to define meeting agendas and schedule the meeting time. We strive to use issue meetings effectively and emphasize a need-based approach. The participants for issue meetings depend on the issue for discussion, issue type, and issue priority. Meeting participants should have a direct relation to the issue. For example, if an issue is low priority and at the technical level, contract leadership is not involved in the issue meeting.

Issue Resolution Approach

Throughout the transformation of DWSS' CSE program, issues may arise and have an impact on multiple key stakeholders. Regardless of the source raising the issue (Deloitte, DWSS, or the PM contractor), issues are tracked together and resolved together. The team follows a five-step process to identify, analyze, escalate, communicate, and resolve issues for the NCSEAS project. The steps are described as follows.

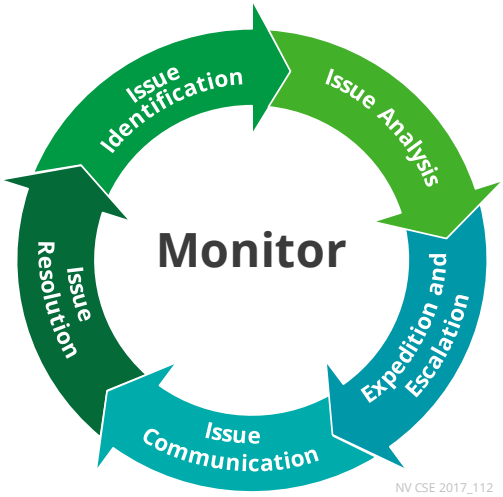


Figure 5-10. Issue Resolution Approach.

- ***<u>Step 1: Issue identification and documentation</u>. When issues arise, they are identified and documented in PMC. The identifying team is responsible for entering at least the minimum information, including the description of the issue, identification date, and priority. A unique issue identifier is provided for future reference to track resolution.***
- ***<u>Step 2: Issue analysis, assessment, and prioritization</u>. Project team members analyze the issue and perform an initial evaluation of the source, cause, dependencies, and business and system impacts. Each open issue is discussed at project management and team meetings. In these meetings, issues are given low, medium, high, or critical priority. Once the priority is determined, the issue is assigned to a project team member for resolution by a specified date. Issues that cannot be resolved at lower levels are escalated to the project management team and, if necessary, to the Project Steering Committee.***
- ***<u>Step 3: Issue expedition and escalation</u>. Depending on the effect of the issue on scope, budget, quality, schedule, and business users, the issue is escalated to the DWSS's project manager and/or executive leaders. Issues are reported in project status reports throughout the analysis and resolution process. The Deloitte team works with the DWSS's project manager to customize contingency plans along people, process, and technology threads to handle issues.***
- ***<u>Step 4. Issue communication, tracking, monitoring, and reporting</u>. The issue log, PMC or other project management tool provides a common repository for tracking, monitoring, and reporting issues. The PMC or other project management tool can display a dashboard of issue measurements (issues by status, issues by priority and status, active issues by priority, and active issues by team) and is used to monitor and control project issues, which are then published to communicate status and facilitate resolution in the appropriate management meetings. An example of the PMC Issue Manager Dashboard is included at the end of this process description.***
- ***<u>Step 5. Issue resolution and closure</u>. Deloitte's project team collaborates with the DWSS project manager and the PM and QA contractors to resolve issues and mark them complete in the PMC tool. The actual resolution date and comments are recorded when appropriate.***

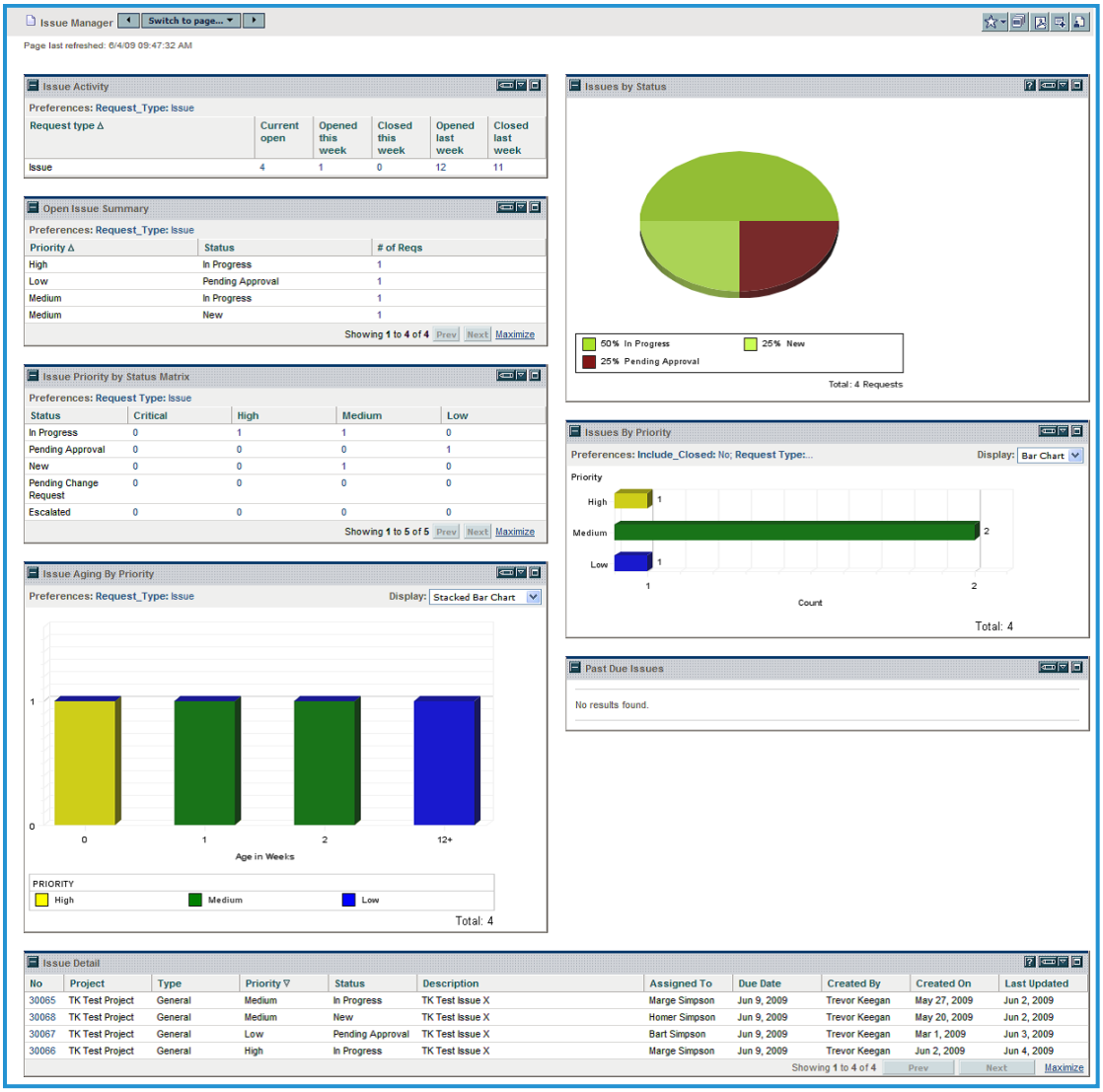


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Figure 5-11. Sample PMC Issue Manager Dashboard.

5.7.5 Change Requests in Project Time Frames

5.7 PROJECT MANAGEMENT	
5.7.5	Responding to and covering requested changes in the project time frames;

Our Change Management Methodology

Changes are inevitable during a project and we incorporate changes from identification to implementation. Deloitte collaborates with DWSS and the PM contractor to measure change requests against the project's intent, the DWSS's priorities, existing system functionality, and project resource constraints. The methodology involves change management, evaluation, review, and implementation as described in the following figure. Our approach adheres to DWSS's change control process and was successfully used on other state projects for DWSS.

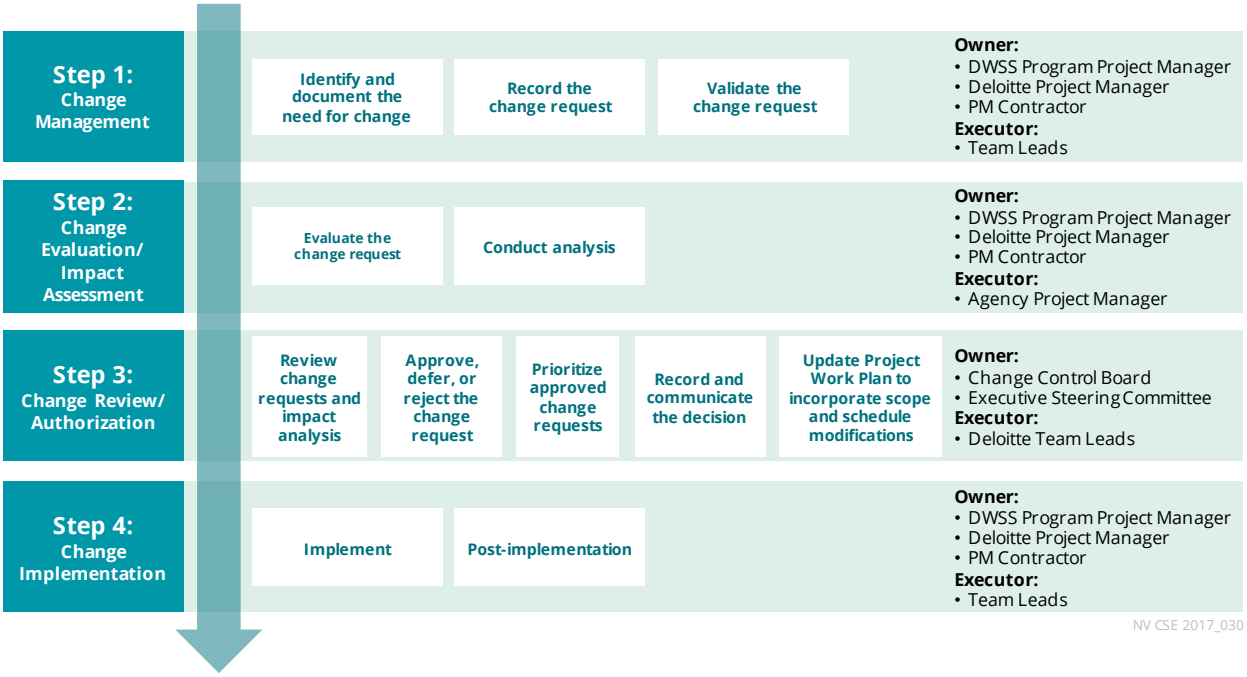


Figure 5 -12. Change Control Approach.

The change control approach leverages the PMC tool, which provides a consolidated, real-time view of the project change requests and their status by providing real-time dashboards, automated alerts, and detailed reports. PMC provides team members with the ability to capture the necessary information required to initiate the change request process. It enforces the appropriate level of rigor in the data collection process by determining the information required to make a decision on the change request is captured, and helps maintain consistency in the overall process. Workflow capabilities can be used to route change requests to appropriate project team members, thereby speeding up the overall process, while maintaining the necessary audit trails.

Change Request Processes Align with DWSS's Business Processes

The change control process addresses the following four circumstances:

- ***A change to the project scope, deliverables, complexity, role expected to perform, schedule, or budget as defined in the statement of work or contract terms and conditions prior to action on or implementation of any such elements***
- ***A change requested to already signed-off plans or deliverables that requires rework (e.g., requirements specifications, functional designs, architecture documents, or training materials)***
- ***A change requested to the baseline hardware, operating or applications software, database, tables, or user configuration***
- ***An assumption made by Deloitte or the DWSS team is discovered to be invalid and requires a different approach based on the changed assumption***

Should any of these circumstances occur, the following process steps and their corresponding benefits are in place to address the change request:

Step	*Benefits to DWSS*
Change requests are initially identified by logging the change request in the change request log available to Deloitte, DWSS, and the PM contractor.	• ***Identification opportunities from multiple stakeholders*** • ***Proactive change management culture is promoted*** • ***Reduced redundancy in identification activities*** • ***Transparency among stakeholders*** • ***Review of change request among stakeholders occurs prior to logging*** • ***Change Control Board reviews and approves or denies the change for further analysis***
Validation and impact analysis including scope and budget impact is performed by Deloitte and submitted to DWSS.	• ***Documented information is available to assess the requested change*** • ***Impact analysis is generated by practitioners familiar with the system's complexity***
DWSS brings the impact analysis and amended project schedule to the Change Control Board for review among change requestor, PM Contractor and DWSS process owner.	• ***Existing DWSS channels and processes for change requests are leveraged*** • ***Relevant stakeholders are involved*** • ***Impact of multiple change requests implemented simultaneously can be assessed***
Change Control Board approves or denies the change request and informs the Steering Committee of impacts to the project schedule.	• ***DWSS owns the decision to approve or deny the request as Deloitte attends, but does not vote at the meeting*** • ***Project schedule is updated and re-baselined including the change***
Approved changes are prioritized and the Deloitte PMO and PM contractor communicate the decision to the project team, interested stakeholders, and parties responsible for implementing the change.	• ***Change Request awareness of the stakeholders*** • ***Collaboration established prior to change implementation***

Table 5-29. Steps in the Change Request Process.

PMC may be used to store information about change requests including change request details, analysis and impact results and metrics, and implementation details. This would provide a consolidated place to log change request information and progress.

5.7.6 Responding to State Generated Issues

5.7 PROJECT MANAGEMENT	
5.7.6	Responding to State generated issues;

At Deloitte, we use a consistent process to handle issues irrespective of the source as explained in Section VII: 5.7.4 Management of Issues and Resolution.

5.7.7 Cost Management

5.7 PROJECT MANAGEMENT
5.7.7 Cost management to ensure that the project is completed within the approved budget. Include resource planning, cost estimating, cost budgeting and cost control;

Aligning Cost Management Methodology with PMI Guidelines and DWSS Requirements

The cost management thread of our project management methodology is modeled after PMI guidelines. PMI defines cost management through four core processes, aligned with DWSS requirements: resource planning, cost estimating, cost budgeting, and cost control. Since the NCSEAS project is fixed price, Deloitte commits to delivering the project within scope and at the cost that is provided in this proposal using our effective cost management methodology.

Meeting time and budget requirements

For each of the core processes to manage cost, we leverage experience on past projects and regularly analyze performance in relation to cost.

Process	*Process Purpose*	*Description*
Resource planning	***Determine the ideal mix of resources needed***	***We use past experience on similar projects, our CA CSE project, lessons learned from transferring CA CSE solution to OR Origin project along with the project schedule, historical information, scope statement, resource pool descriptions, and organization policies to determine an accurate resource mix. We regularly analyze the resource mix throughout the project and adjust the approach, as necessary to accommodate changing circumstances. Additional information on Resource Planning is included in Section VII: 5.7.8 Resource Management.***
Cost estimating	***Develop an estimate of the costs of the resources needed to complete project activities***	***To determine the accurate cost of the initial project and any changes that may occur over time, we leverage the approaches listed below. We further refine the estimates based on the following approaches:*** • ***Analogous estimating.*** ***The actual costs of previous, similar projects form the basis of cost estimation for the NCSEAS project and subsequent changes.*** • ***Parametric modeling.*** ***Mathematical models that have been used on previous projects and refined are leveraged to predict project costs.*** • ***Bottom-up estimating.*** ***Individual work teams analyze the work required for a particular change and estimate the cost of individual work items that are effected by a change. The individual estimates are used to determine the total cost of the change.*** • ***Computerized tools.*** ***Computerized models facilitate cost estimation, allowing project management to focus on the business need of the change instead of "recreating the wheel" to determine costs.***
Cost budgeting	***Allocation of the overall cost estimates to individual work items***	***Use cost estimation done before and during the NCSEAS project to establish a cost baseline for measuring project performance.***

Process	*Process Purpose*	*Description*
Cost control	***Aids in keeping a project at cost target***	***Control costs by measuring scope, schedule and cost together to indicate early on when schedule or cost performance varies too widely from established timelines.***

Table 5 -30. Deloitte's Cost Management Processes.

PMC allows the monitoring of costs through an Earned Value (EV) Summary on the Project Manager Dashboard. Within this summary, metrics such as Planned Value, Earned Value, Actual Cost, Schedule Variance, Cost Variance, Schedule Performance Index and Cost Performance Index are captured to provide real time insights into the NCSEAS cost management.

5.7.8 Resource Management

5.7 PROJECT MANAGEMENT	
5.7.8	Resource management to ensure the most effective use of people involved in the project including subcontractors;

Behind every successful project is a great team. At Deloitte, we plan to set up a good working environment, keep the team motivated and deal with any conflicts that might happen along the way.

Project Staffing Approach

We bring a team that has already delivered successful CSE projects in California, Florida, Pennsylvania, and transferring CA CSE project to Oregon. We also bring staff that have worked alongside with you for past seven years forging strong, productive, working relationships with DWSS staff.

The key project team members are staffed throughout the entire project. Our proposed "non-key," or supporting resources, are on-boarded using a 'just-in-time' approach. Using a just-in-time approach to staffing non-key resources for this project requires careful scheduling of resources and maintenance of a skills/needs inventory to confirm that qualified personnel are available for the various phases of the project. Our staffing approach emphasizes bringing people to the NCSEAS project who have the following experience:

- ***Firsthand knowledge of the CA CSE system from supporting development and maintenance***
- ***Transfer expertise gained from transferring the CA CSE system to OR Origin***
- ***National eminence in Child Support Enforcement***
- ***Familiarity with DWSS's systems, processes, and people from participation on projects in Nevada for the past seven years***

Staffing Process

Deloitte's national staffing model leverages resource managers and firm-wide resource management tools. This allows project managers to submit staffing requests and fill them with appropriate resources. As mentioned in Section VII: 5.4 Vendor Staff Skills and

Experience Required, we fill the required technical and functional project roles with a team that has direct CSE and DWSS experience.

We follow a robust onboarding and training process to provide new resources that join the project with the appropriate tools and resources to quickly ramp up their knowledge of the project tools and processes to contribute effectively. At a firm level, we are fully committed to providing quality training for our consultants so that they have the skills to meet or exceed our clients' expectations. We leverage our training facility, Deloitte University, to deliver training curriculums designed to build leadership and learning in targeted areas (such as the Public Sector, Health and Human Services, and Child Support Enforcement).

Special staffing circumstances occur from time to time in client engagements. To address these special circumstances, Deloitte's project teams obtain staff augmentation services from Contingent Workforce Services (CWS), a component of Deloitte specialized in contractor procurement. Please refer to Section VII: 5.7.4 Management and Issue Resolution for more information around CWS.

5.7.9 Communications Management

5.7 PROJECT MANAGEMENT
5.7.9 Communications management to ensure effective information generation, documentation, storage, transmission and disposal of project information; and

Communication Management Methodology

We deliver messaging at a time and in a way that resonates with recipients and examines changing needs at varying points in the project lifecycle, managing communications accordingly. Consistent communication among Deloitte, DWSS, and PM, QA, and IV&V contractors creates structure and sets expectations for project stakeholders and supports an environment that drives knowledge and transparency. Alignment of our organization with the DWSS allows clearer communication between staff members working on similar parts of the project.

The methodology is supported by a variety of formal and informal communication channels designed to deliver key messages and engage specific stakeholders. We understand the importance of DWSS's time and consider alternate communication methods to in person meetings (emailing of documents or teleconferencing). A sample of the communication channels we use is in the following table.

Communication channel	Key messages	Participants
Status reports	• ***Issues, risks, action items*** • ***Upcoming deliverables*** • ***Project status*** • ***Development status*** • ***Testing status*** • ***Defect counts*** • ***Upcoming tasks***	• ***Deloitte project team*** • ***Deloitte project manager*** • ***DWSS project manager*** • ***PMO contractor*** • ***QA contractor***

Communication channel	*Key messages*	*Participants*
Status meetings	• ***Content from status reports***	• ***Deloitte project team*** • ***Deloitte project manager*** • ***DWSS project manager*** • ***PM contractor*** • ***QA contractor*** • ***Stakeholders from status meetings***
Ad hoc meetings	• ***Technical topics*** • ***Functional topics*** • ***Project planning*** • ***Issues*** • ***Risks***	• ***Deloitte project team members*** • ***DWSS project team members*** • ***PM contractor team members*** • ***QA contractor team members***
Roundtable meeting	• ***Defect resolution*** • ***System performance*** • ***Upcoming activities*** • ***Coordination efforts between DWSS, Deloitte, and other contractors*** • ***Issues*** • ***Risks***	• ***Deloitte team leads*** • ***DWSS team leads*** • ***PMO contractor*** • ***QA contractor*** • ***IV&V contractor***
Steering committee meetings	• ***Project status*** • ***Change requests*** • ***Risks***	• ***Deloitte project leadership*** • ***DWSS project leadership*** • ***Other stakeholders***
Meeting minutes	• ***Agenda*** • ***Meeting notes*** • ***Parking lot items*** • ***Issues, risks, or action items*** • ***Decisions***	• ***Meeting participants*** • ***Meeting scribe***
Webinars	• ***Knowledge transfer*** • ***Technical topics*** • ***Functional topics***	• ***Deloitte project team members*** • ***DWSS project team members***
Email	• ***Day to day communication*** • ***Scheduling meetings*** • ***Technical topics*** • ***Functional topics*** • ***Project planning***	• ***Deloitte project team members*** • ***DWSS project team members*** • ***PM contractor team members*** • ***QA contractor team members***

Table 5-31. Examples of Communication Channels.

Collaborative Information Management

Project communications may be captured as information. The process to manage information involves generation, documentation, storage, transmission and disposal, as required. Our approach to each of these are detailed in the following section.

Information Generation and Documentation

Project activities generate information that may need to be documented and shared across project team members. Information that may be documented includes but is not limited to status reports, risks, issues, action items, defect history, and meeting notes. Selected samples of these documents are included in the following figures.

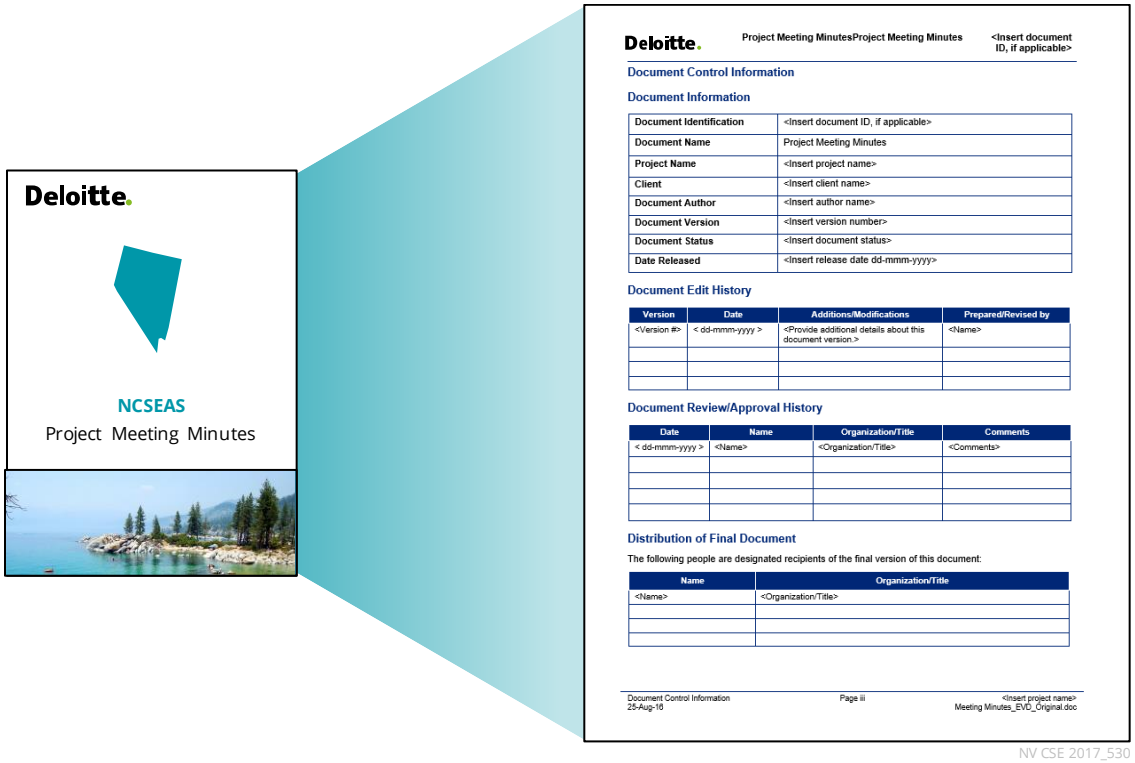


Figure 5-13. Sample Project Meeting Minutes.

PMC is a valuable tool for documenting information. Risks and issues can be logged in PMC which provides a centralized location to store project information. PMC has robust dashboards and status reporting capabilities that allows users to extract and present project status data efficiently. The following screenshots displays a sample PMC risk logged and PMC dashboard for issue management.

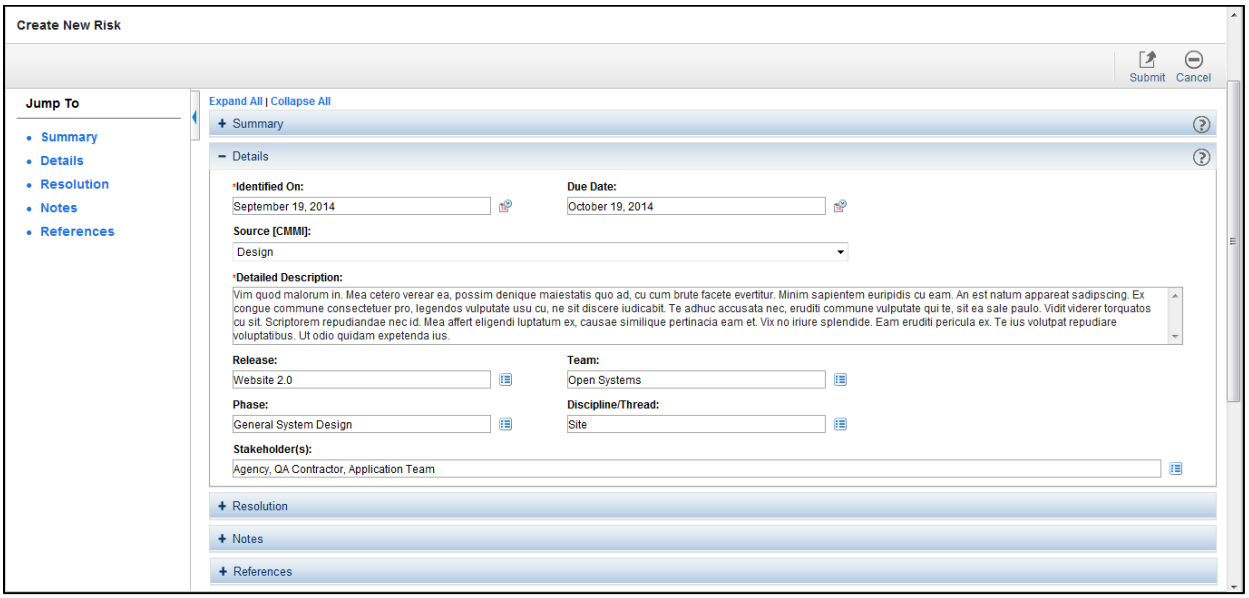


Figure 5-14. PMC Tool for Risk Tracking.

Specific tools used to generate, document, and track information are detailed in Section VII: 5.14 Project Software Tools.

Storage and Transmission of Project Documentation

Team collaboration software tools store project documentation in a central location that is accessible to designated users. With this type of tool, the focus shifts from emailing documents to sharing documents stored online as contributors work towards completion. Team collaboration software also provide multiple other functionalities, including shared calendar, integration with Microsoft Office applications, database creation and tracking. The versioning capabilities enable versions of the document to be securely stored and audited. Documents stored on a teaming site can be downloaded and saved at any time. The entire library can be downloaded and saved on a local network drive when the project is completed in an effort to make the knowledge and documentation transfer easy, efficient, and effective.

Internally, Deloitte leverages SharePoint as a team collaboration software tool. A project specific SharePoint is created for team members to collaborate and share information throughout the NCSEAS project lifecycle.

Upon approval and/or signoff, NCSEAS project documents from the Deloitte SharePoint would be transmitted to the DWSS SharePoint. Information that is uploaded to DWSS's teaming platform may include project deliverables, sign off forms, meeting minutes, notes, milestones, issues, tasks, and detailed communications.

Disposal of Information

Deloitte enforces strict security procedures that staff are required to follow to protect the information of our clients and the Deloitte team understands the level of confidentiality regarding project documents and information. Deloitte staff receive training in topics such as Confidentiality and Privacy, Safeguarding PHI and PII, and Ethics to verify awareness of safeguarding information.

Teaming sites, as well as defect management, testing, and project management tools are password protected to allow only appropriate users to utilize these tools. Information that is no longer relevant to be shared can be deleted by users with appropriate access. Deleting documentation that is no longer required protects DWSS and the project's information.

Confidential hard copy documents are also shredded, as appropriate, to protect secure information onsite. Electronic documents containing sensitive information (PHI and PII) are transmitted via encrypted emails and deleted from local machines once they are no longer needed.

5.7.10 Risk Management

5.7 PROJECT MANAGEMENT	
5.7.10	Risk management to ensure that risks are identified, planned for, analyzed, communicated and acted upon effectively.

Risk Management Methodology

Our approach for risk management is based on the principles defined by the Project Management Institute (PMI) for project management and also adheres to ISO/IEC standards for risk management. These risk management methods have been used on successful health information exchange, integrated eligibility, and child support enforcement projects. Our ongoing approach to risk management consists of the following components:

1. ***Risk identification***
2. ***Risk analysis***
3. ***Risk response planning***
4. ***Implementation mitigation strategy***
5. ***Risk tracking and control***
6. ***Risk communication***

This is depicted in the following figure.

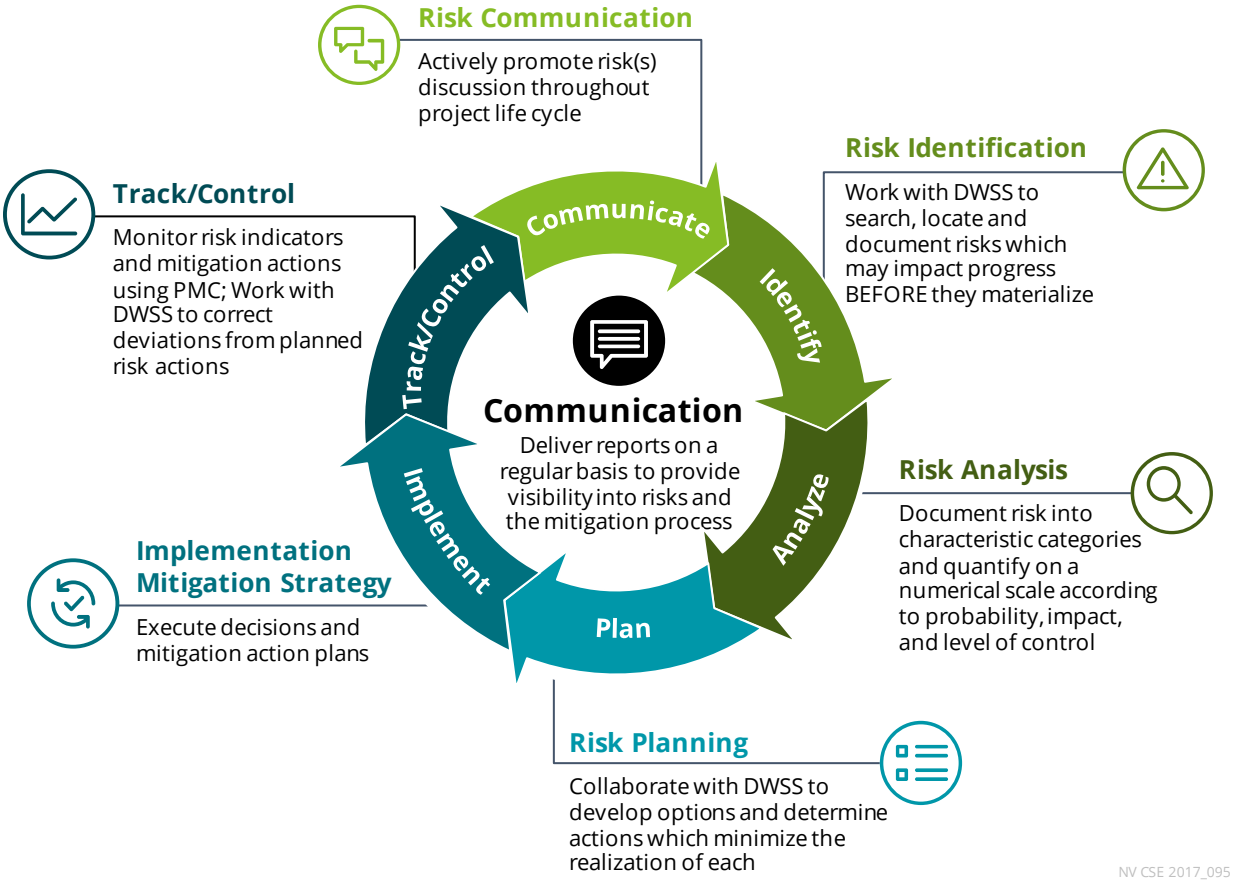


Figure 5-15. Risk management approach.

Our core approach to the NCSEAS project is one of collegiality and teamwork. We approach any risk on the project as a team activity and work closely with DWSS project staff to help mitigate them. Traditionally, on an integrated project such as this, the risks that are associated are not just to DWSS, Deloitte or other vendors – they require participation from each party for resolution, hence they are NCSEAS project risks.

Deloitte expects the PM contractor to provide the overall risk management approach and develop a risk management plan for the NCSEAS solution, which includes processes to manage risk and interact with the stakeholders who are responsible for construction risk mitigation strategies to minimize impact to the project. Deloitte integrates its proven risk management process, tools, and templates with this overall approach provided by the PM contractor. Deloitte believes that developed together, a tailored risk management approach can mitigate risks for the NCSEAS implementation.

Managing Risks From Identification To Closure

In managing risks for large projects of this nature, we use the following processes:

Risk Identification

Risks that are identified early have a higher likelihood of being mitigated. Risks should be documented as soon as they are identified to enable relevant stakeholders to become aware of the risk and agreed upon resolution.

Risks may be identified through the following sources:

- ***Client meetings.*** ***The Project Manager and team leads often lead the day-to-day interaction with DWSS client counterparts. Such meetings may identify additional requirements, changes in scope, or changes in priority, which in turn could pose a risk to the initiatives completion.***
- ***'Day to day' operations/project activities.*** ***The majority of risks are identified as a result of unforeseen changes encountered during the day to day operations of the project. These could include running into technical limitations, environmental factors, internal scope, time, or resources constraints.***
- ***Document reviews.*** ***Sometimes risks and issues do not become apparent until deliverables are consolidated in a single document; internal and external review of such deliverable documents could provide another avenue to identify risks and issues.***

As part of our risk approach, Deloitte has identified potential risks and mitigation strategies specifically for the NCSEAS project. We identified these risks based on our experience implementing other child support enforcement systems, most recently for the State of Oregon. This list can be found in Section VII: 5.6.5 Potential Risks and Mitigation.

Risk Analysis

Risks are analyzed to better understand its source or category, isolate the cause or trigger, quantify the probability of occurrence, and determine the nature and impact of the results if

realized. Deloitte's risk analysis process uses both qualitative and quantitative parameters to rate and prioritize risk by severity as shown in the following figure.

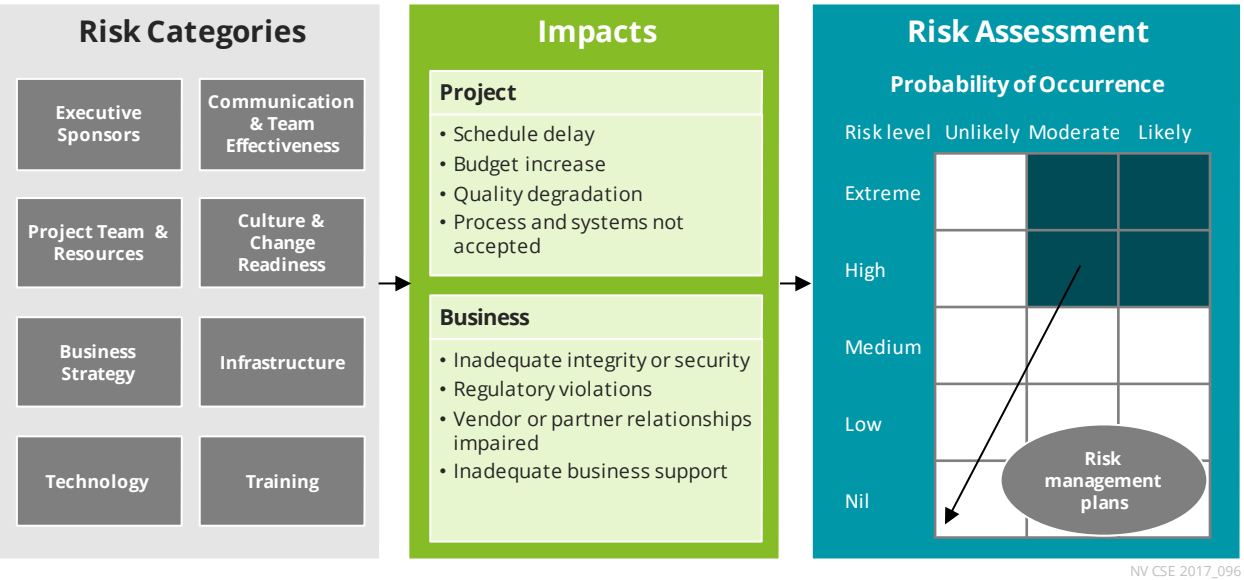


Figure 5 -16. Risk Analysis Categories, Impacts, and Assessment.

The DWSS, Deloitte, and PM contractor risk management teams collaborate to determine the initial risk probability and impact. Deloitte's risk scoring process determines a risk's severity by multiplying its estimated probability by its forecasted impact, and compares that score against the baseline severity scoring matrix.

Severity Scoring Matrix

Impact	Probability				
	1-Low	2-Low/Medium	3-Medium	4-Medium/High	5-High
5 – High	Low (5)	Medium (10)	High (15)	High (20)	High (25)
4 – Medium/High	Low (4)	Medium (8)	Medium (12)	High (16)	High (20)
3 – Medium	Low (3)	Medium (6)	Medium (9)	Medium (12)	High (15)
2 – Low/Medium	Low (2)	Low (4)	Medium (6)	Medium (8)	Medium (10)
1 – Low	Low (1)	Low (2)	Low (3)	Low (4)	Low (5)

Severity Scores

Score	Severity
1–5	**Low**
6–12	**Medium**
13–25	**High**

Figure 5-17. Risk Rating Matrix.

These risk-scoring baselines can be adjusted to meet project-specific requirements. Our team works with the PM contractor to define these scoring probabilities and identify the impact level and risk scores that suit the DWSS's requirements. Standard probability scoring is defined as follows:

- ***Level 1 – Low.*** ***Risk has a 1–20 percent probability of being realized***
- ***Level 2 – Low/Medium.*** ***Risk has a 21–40 percent probability of being realized***
- ***Level 3 – Medium.*** ***Risk has a 41–60 percent probability of being realized***
- ***Level 4 – Medium/High.*** ***Risk has a 61–80 percent chance of being realized***
- ***Level 5 – High.*** ***Risk has an 81–100 percent probability of being realized***

The risk evaluation details and identified owner for the risk is documented in the corresponding record in the risks log, PMC, or other project management tool.

Risk Response Planning

Risk response planning involves determining the proper strategy to address a risk based on its severity and impact areas. Risks may be addressed using one of the following four strategies:

- ***Accept.*** ***Accept the risk, but monitor it. Contingency plans may be developed and executed if the risk is realized***
- ***Avoid.*** ***Devise a strategy to avoid the risk, proactively, if possible***
- ***Mitigate.*** ***Determine actions to eliminate or reduce the risk and create the mitigation response plan***
- ***Transfer.*** ***Transfer the risk responsibility to another group***

An appropriate strategy is determined to address a risk in meetings with the PM contractor and DWSS leaders. This meeting defines tactical details, roles, and responsibilities, and timelines for executing the risk response strategy. A response plan for each risk is documented in the corresponding record in the risks log, PMC, or other project management tool.

Risk Implementation

Risk mitigation or contingency plans may include actions that should be taken with regards to a risk. Risk owners oversee the execution of mitigation or contingency plans and document actions taken to address a risk.

Risk Tracking and Control

Risks are regularly monitored and reassessed so that they can be effectively managed, responded to, and reported on throughout the life of the project. Risks are tracked consistently and provide access, visibility, and up-to-date status to the project's stakeholders. Tracking may be managed through a risks log, PMC, or other project management tool. PMC contains a Risk Manager Dashboard which provides a summary of the risks/issues and classifies potential risks that could affect the project by type, priority, potential impact and probability of occurrence.

The weekly status and any meetings specifically for risks are a platform to monitor the status of existing risks in an effort to proactively mitigate such risk from potentially

reoccurring. After evaluation and consultation with the DWSS project management team, PM contractor, and Deloitte project managers, existing project risks may be closed for the following reasons:

- ***The event that could have triggered the risk no longer exists***
- ***The mitigation plan to address the risk has been completed successfully***
- ***The risk event has already been triggered; therefore, the risk has now become an issue***

Risk Communication

Effective communication is essential to keep stakeholders informed during the risk identification, analysis, handling and monitoring/control phases in the lifecycle of a risk. Once a risk has been identified, it should be documented and tracked until the risk's closure. Deloitte proposes to use the Project Management Center (PMC) for tracking and reporting on risks. Deloitte has extensive experience using PMC on over 550 projects. PMC functionality allows for automated risk management including:

- ***Workflow-enabled risk/issue management***
- ***Risk Manager Dashboard for status reporting***

PMC allows DWSS to monitor the current status of risks through the Risk Manager Dashboard, thus providing high visibility to stakeholders.

Automatic reports generated through PMC may include risk activity, risk by status, open risk summary, risk priority by status matrix, risk by priority, risk detail, past due risks, and risk aging by priority. These reports are generated from PMC and monitored by the Deloitte management team. The DWSS Management team is also able to retrieve reports on an ad hoc basis.

Risks can also be communicated to DWSS through the Monthly Status Report and meetings with NCSEAS project management. The status of risks are reviewed during internal weekly status meetings and risk meetings. Once the risk had been addressed and mitigated, the joint project management team must agree to retire that particular risk item.

Open communication with DWSS allows quicker identification and resolution of risks, thus maximizing positive events and minimizing adverse events. On prior state projects with DWSS, we have collaboratively developed our risk management approach together.

In summary, the following are the differentiators of Deloitte's project management methodology which provides the State with a foundation of experience enabling DWSS to successfully manage and implement the NCSEAS solution:

- ***CSE experience in California, Oregon, Florida, and Pennsylvania with proactive risk management controls in place to work with multiple stakeholders tackling similar issues.***
- ***Project management approach to proactively manage issues and risk***
- ***Methodology tailored for transfer solutions and uses experience of CA CSE transfer to Oregon***
- ***Our understanding of the DWSS work environment, processes and tools***

- ***Robust tools, such as the Project Management Center (PMC), to track activities and measure the health of the project***

5.7.11 Our Distinguishing Factors

Our broad and deep capabilities allow us to work with all levels of leadership throughout the organization, to build the awareness, alignment, and agreement necessary to develop and implement solutions and most complex challenge. Deloitte's EVD methodology is our approach which enables requirements gathering and solution design in a collaborative manner through the use of project tested tools and templates. Our focus encompasses an integrated approach to communications, stakeholder engagement and preparation, training, and organizational alignment and transition. We utilize extensive experiences and lessons learned from other projects and work on building deep personal and professional relationships to deliver results and value to our clients.

5.8 Quality Management

5.8 QUALITY ASSURANCE

Vendors shall describe the quality assurance methodology and processes utilized to ensure that the project shall satisfy State requirements as outlined in Section 4, Scope of Work of this RFP.

QA is built into each stage of the NCSEAS project. Deloitte performs internal quality assurance that verifies approved requirements from the Scope of Work (SOW) to satisfy that DWSS is on the path to achieving federal OCSE certification.

Our team works closely with the QA contractor, the PM contractor, IV&V contractor and DWSS to verify that the artifacts, activities, and tasks meet the quality standards set forth for the project. This collaboration builds quality control and quality assurance procedures into each phase of the project. The following sections describe the internal quality assurance methodology and processes that Deloitte uses to satisfy DWSS's requirements outside of the activities performed by the QA contractor.

SECTION HIGHLIGHTS

Supporting quality using a consistent approach

- ***Aligned with industry standards, CMMI, IEEE, and PMBOK***
- ***Based on CSE experiences***
- ***Based on our working experiences with DWSS***
- ***Rooted in achieving federal certification***

5.8.1 QA Methodology that Aligns with PMBOK Standards

Elements of the CMMI, IEEE, and Project Management Book of Knowledge (PMBOK) standards are closely aligned with the internal quality assurance steps that we use to establish, promote, and monitor quality, stability and performance throughout the project, resulting in standard, disciplined, and consistent processes. These processes are repeatable and recognized across industry. As a result, stability is built in each phase of the NCSEAS project, which lowers risk to DWSS.

The following figure highlights the five-step quality assurance methodology used to maintain project quality for NCSEAS.

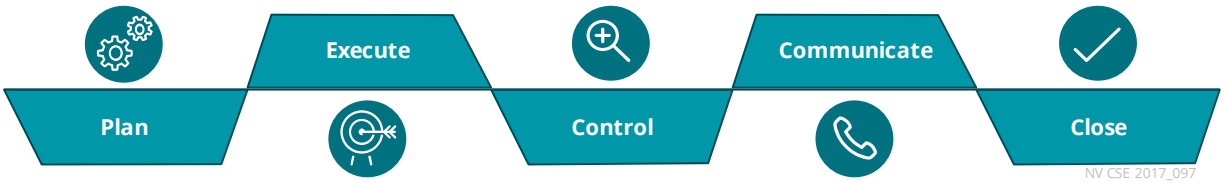


Figure 5-18. Five-Step Quality Assurance Methodology.

The "plan" step identifies each quality assurance activity. Subsequent steps, including the "execute" step, are performed by the Deloitte team members for each artifact, work product, process or procedure. The results of the quality assurance activities, along with the measurement data collected in the execute step, are analyzed in the "control" step, where they are used to efficiently control the quality of subsequent artifacts, work products, or procedures. The activities, roles, and responsibilities, and outcomes of our quality assurance methodology are conveyed to appropriate team members in the "communicate" step. Finally, the "close" step stores each quality assurance document in the project library and the individuals assigned to the associated quality assurance tasks are made available for other project tasks.

Deloitte brings to the NCSEAS project staff members with relevant and recent CSE experience to address quality assurance and save time. We also use our experience from the OR Origin project of building in a federal certification focus from the very start as we build and trace requirements. We review at each step along the way to ensure that SOW requirements, Federal Certification requirements, and State Formatting requirements are met and traced.

During the transfer of the CA CSE system to DWSS, our Subject Matter Experts (SMEs) use their knowledge of the functional and technical aspects of the CA CSE system when creating and reviewing documentation, code, test scenarios and project plans. Specifically, we plan for project members aligned with specific topics to assist with QA of each artifact. For example, our QA process involves practitioners with technical experience or familiarity with the NOMADS database to address technical design artifacts. We will augment our team as needed with project management practitioners to review PMO artifacts. Additionally, our team has access to our National CSE practitioners, including our CA CSE and Oregon Origin practitioners, to share lessons learned and best practices from a quality perspective for each business process and technical component of the transfer system. Involving the right team of people and using our working experience with DWSS counterparts, we can save time by quickly identifying the correct people to involve.

Communication across quality assurance activities is a key aspect of our methodology. The following key messages and communication channels are important during quality assurance.

Communication activity	*Key messages*	*Communication channel*
Communicate QA planning	• ***Overall approach to quality assurance to Deloitte team members*** • ***Review of artifacts, templates and Deliverable Expectations Documents (DEDs) with DWSS*** • ***Identification of appropriate QA participants for each artifact***	• ***All-hands meetings*** • ***On boarding process*** • ***Regularly scheduled QA meetings with DWSS and QA vendor*** • ***SharePoint documents***
Communicate QA results	• ***QA results and measurements*** • ***Corrective actions to be taken*** • ***QA improvement recommendations*** • ***Readiness recommendations***	• ***Status meetings*** • ***QA result summaries***
Maintain artifact review Record	• ***Classification and categorization of artifacts*** • ***Detailed information of artifacts (number of pages, version, author, review date)*** • ***Defects in artifacts***	• ***Artifact review record*** • ***Weekly status report*** • ***Monthly status report***

Table 5-32. Communication Activities for Quality Assurance.

5.8.2 Structured QA processes

Internal QA processes are carried out by the Deloitte team with the experience needed to effectively verify the following:

- ***NCSEAS solution meets the approved requirements outlined in the SOW***
- ***NCSEAS solution is on track for federal certification***
- ***System documentation sufficiently and accurately describes system capabilities***
- ***Project plans (e.g., Project Management Plan, Technical Approach Plan, Business Continuity and Disaster Recovery Plan) address SOW requirements and project processes are conducted consistent with the defined plans***
- ***Project artifacts conform with DED formatting and content expectations***
- ***Best practices from our experience with transferring the CA CSE solution to OR Origin are incorporated into QA processes***

Internal QA processes are applied to a variety of project artifacts such as design documents, code, test scenarios, and project plans. A selection of our QA processes are described in the following.

Plan QA Activities And Leverage Existing Resources

Effective QA planning process involves collaboration among the Deloitte team, DWSS team, PM Contractor, and the QA contractor.

DEDs are an important element of our QA planning process. Deloitte uses DEDs to provide a higher degree of artifact quality by outlining the structure, content and format of the artifact before starting work. DEDs are reviewed internally by the Deloitte project leadership and then sent to DWSS for review and agreement that the expectations for the

artifact are correct. We will leverage the existing DEDs from Nevada projects and incorporate our CA CSE transfer experience into the QA process. Through our extensive CSE experience in California, Oregon, Florida, and Pennsylvania we understand the need to focus on federal certification DED early in the project.

In addition to DEDs, Deloitte provides DWSS with early snapshots of deliverable to set expectations for the artifact outcome and take early corrective actions if the artifacts are not directionally correct. This helps to improve consistency in writing and reduced the number of comments.

The following table explains the QA planning process and benefits provided for this transfer solution.

Planning Process Step	*Benefits*
Review OR Origin QA activities for each artifact and phase	• ***The NCSEAS project can draw from an existing set of QA activities on the OR Origin project*** • ***Design documents from the CA CSE solution can be adapted to specifically meet DWSS requirements***
Assess OR Origin QA activities for their applicability to the NCSEAS project and identify NCSEAS specific QA activities	• ***Time periods for activities are based on the actual time such activities took for the OR Origin project***
Identify applicable project standards, templates, DEDs and checklists for the team	• ***DEDs are submitted to DWSS prior to artifact creation to establish a clear understanding of the structure, format and content for artifacts*** • ***Clear expectations avoid duplicative work efforts and save time*** • ***Checklists expedite the QA process and provide a consistent approach to QA***
Define the instructions for reporting QA results to evaluate specific artifacts, work products or procedures	• ***Collaboration among internal QA lead and the QA contractor determines metrics for each activity that measure the quality for a specific artifact, process, or service*** • ***Emphasis is on SOW requirements and the system is on track for federal certification*** • ***Deloitte refers to the Automated Systems for Child Support Enforcement: A Guide for States released by the federal government to identify the specific requirements for CSE system components (such as case initiation, locate, establishment, case management, enforcement, financial management, reporting, security and privacy, and customer service) that must be met so that the system can achieve certification***

Table 5-33. Planning Process Step Benefits.

Maintain artifact quality

As this is a transfer solution, many artifacts have a QA foundation from their creation during the CA CSE project. Our team's experience with the CA CSE system creates an understanding of which requirements and documents are transferrable to DWSS. We focus our effort on performing QA on the detailed fit gap analysis of the requirements and design. Deloitte reviews artifacts for QA prior to the artifact submission and approval process with DWSS and the QA contractor. Some key differentiators to Deloitte's approach to maintaining artifact quality for NCSEAS include:

- ***Leveraging CA CSE approved artifacts as a foundation for NCSEAS***
- ***Designating QA resources to work with artifact authors to confirm that DWSS specific style guides, templates, and previous artifact comments are incorporated at the beginning of artifact creation/update***
- ***Iterating the QA team review and author updates until project standards are met, SOW requirements are addressed and system is on track for certification***
- ***Deloitte project leadership review of artifacts***

The following flow describes our review of artifacts.

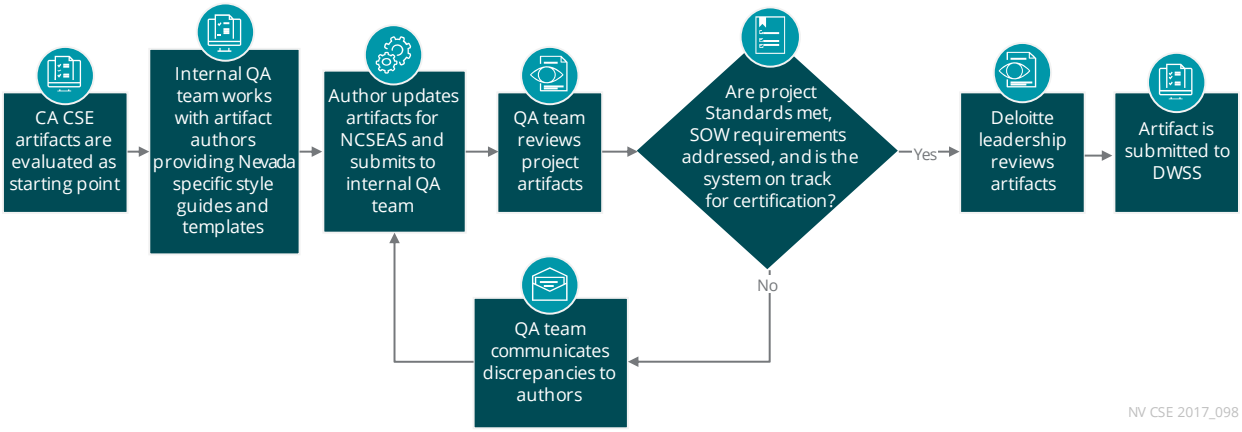


Figure 5-19. Deloitte Internal Artifact Review Process.

Communicate QA through the Artifact Review Record

An example QA communication process is the use of the Artifact Review Record, which provides a collaborative means of recording and monitoring artifact review activities as they occur.

Once an artifact is customized for DWSS based on the CA CSE solution artifact (or newly created artifact), the artifact is sent to DWSS for review. After the first round of comments are received, a meeting is scheduled among NCSEAS stakeholders versed in the artifact's subject matter to discuss the consolidated list of comments. Meeting to discuss the artifact saves time by avoiding emails being sent back and forth for clarification and facilitates the review process. In the artifact review meeting, the team reviews the comments (critical, major, or minor) and suggestions for artifact improvement based on the DED review criteria established for the document during the QA planning step. These comments and suggestions are tracked in the Artifact Review Record. The review team communicates necessary updates to the artifact creation team and QA team.

The DWSS Project Manager or owner of the artifact communicates their approval of the artifact by signing the Artifact Review Record. This record is stored in the team document repository for reference by team members. Results contained in the Artifact Review Record may also be presented in status meetings and reports. A sample Artifact Review Record is shown in the following figure.

Artifact Review Record	<enter review product>

Product:	*<enter review product>*	**Version:**	*<enter product version under review>*
Meeting Location:	<enter meeting location>	**Product Size:**	*<enter product size (that is, pages, LOC, and so on.)>*
Moderator:	<enter moderator's name>	**Review Date:**	<enter review date>
Recorder:	<enter recorder name>	**Author:**	<enter author 1's name>
Product Location:	*<enter file location or distribution>*		

	Name	Review Effort (hrs)	Meeting Effort (hrs)
Reviewers	<enter reviewer 1's name>		
	<enter reviewer 2's name>		
	<enter reviewer 3's name>		
	<enter reviewer 4's name>		
	<enter reviewer 5's name>		
	Total:	0.00	0.00

	Total	Open	Resolve
Critical Defects:	0	0	
Major Defects:	0	0	
Minor Defects:	0	0	
Suggestions:	0	0	
Total Defect/Suggest:	0	0	
Total Defects:	0	0	

Review Decision:	
PM or Owner Signoff:	<insert name of PM or Document owner and date it was approved>

Defect Severity Definitions

Critical – Defect that would result in a failure of the software product or an observable departure from specification (or any other input document). These defects may cause the system to hang, crash, produce incor unexpected results or behavior or corrupt user data. No known work around.

Major – Defect that would result in a failure of the software product or an observable departure from specification (or any other input document). These defects may cause the system to hang, crash, produce incorre unexpected results or behavior or corrupt user data. Work around possible but with significant additional effort to confirm expected product behavior.

Minor – Defects that deviate from specifications but will not cause the failure of the software product or an observable departure in performance. Minor defects could have a cosmetic impact in terms of navigation or

Suggestion – No impact on existing, defined functionality of software product. Request for additional feature or enhancement of existing specification.

General Review Criteria | Work Product Review Criteria

NV CSE 2017_532

Figure 5-20. Sample Artifact Review Record.

During the transfer of the CA CSE system to OR Origin, we built a style guide for the functional and technical design deliverables. The style guide was to address early structural and grammatical comments on the design deliverables to document the client style rules. A living document, the style guide was updated as additional preferences emerged. In addition, we locked down the DED templates so that the structure promoted the adhering to the agreed-upon format. Both the style guide and the locking of the templates assisted in standardization across the deliverables and the review process. Authors spent less time creating and responding to style and structure comments on the documents. Reviewers were aware of the standards for documentation and had fewer comments related to those standards. This allowed reviewers to focus on the substance of the deliverables instead of structure and/or grammar.

Maintain Code Quality

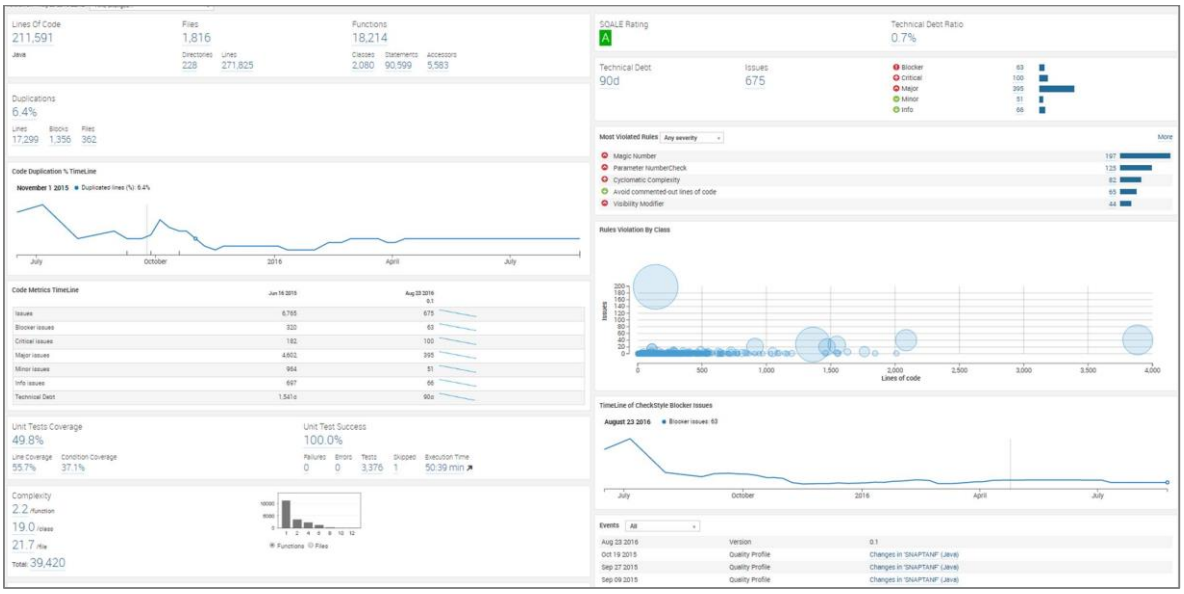
Code quality is monitored through code peer reviews, manual build reviews, and the use of tools and reports. More details on how we maintain code quality through our peer review process can be found in Section VII: 5.12 Peer Review Management.

Our developers use the Checkstyle plugin in Eclipse Integrated Development Environment (IDE) and SonarQube tool to review code and identify errors. The Checkstyle report gives insight into both code quality and code coverage. Code coverage is a measure of the amount of code that has corresponding unit tests created. Code quality is measured by how many of these unit tests are passing. A higher percentage of code coverage corresponds to higher code quality, assuming the unit tests are passing. As defects are found additional unit tests are added to help confirm a diverse and rich unit test bed.

During the HCR-EE project for DWSS we used the Checkstyle report to track code quality and coverage and drive the implementation of a high quality solution. The report allowed us

to identify how much of the code is duplicated, which should be avoided since code duplication increases the software size, maintenance needs and results in time and monetary costs. Monitoring Checkstyle violations over time allowed us to track code quality improvement.

The following figure shows a sample Checkstyle report.



NV CSE 2017_533

Figure 5-21. Sample Checkstyle Report.

Maintain system quality through testing

The processes for maintaining system quality draw on the CA CSE system and the existing processes used by Deloitte on other projects for DWSS. We leverage the existing bank of CSE test scenarios from CA CSE. After performing due diligence to verify these test scenarios are applicable for NCSEAS, we identify additional test scenarios for NCSEAS specific functionality, as needed. Through our experience on the OR Origin project, we have formed a methodology and approach to creating new test scenarios that will act as an accelerator. In addition, we leverage our extensive experience implementing the Oregon, Florida, and Pennsylvania CSE systems to include federal certification scenarios as a part of our system testing effort.

Functional and technical teams monitor test results to confirm that SOW requirements and federal certification requirements are met. The internal QA team assists the functional and technical teams to confirm the quality of test scenarios. Based on our transfer solution experience, we focus on optimizing time in the schedule while maintaining quality by completing design and construction activities for each module on separate timelines. This necessitates a thorough QA process for regression testing of the transfer solution, as it is incrementally customized as depicted in the following figure.

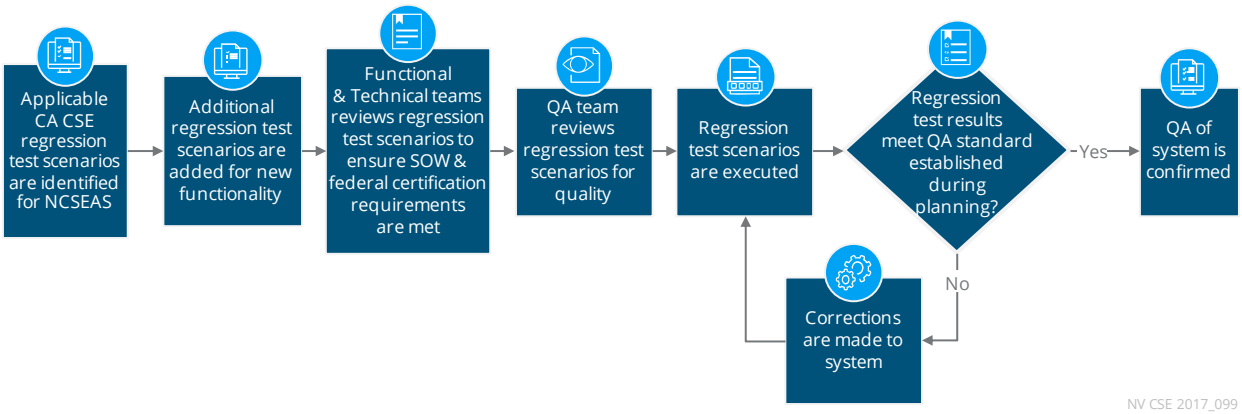


Figure 5-22. Regression Testing QA Process.

Deloitte Formally Monitors Project Quality Outside of the NCSEAS Project

On a quarterly basis, Deloitte performs a formal Internal QA Review of NCSEAS project processes. The review is performed by the Lead QA Reviewer, a Deloitte Principal/Managing Director outside of the project, who meets individually with the NCSEAS Deloitte leads (functional, technical, testing and PMO), as well as the Project Manager. The Lead QA Reviewer looks at the monthly and weekly status reports for the project to review project health. He or she also asks the leads about the processes being followed on the project, reviews best practices, and provides recommendations to make sure the project is aligned with Deloitte project standards.

This process was used on other projects for DWSS to keep project quality in check. During the HCR-EE project, a recommendation that came out of the Internal QA Review was to develop a regression suite of scenarios for AMPS, HCR-EE, and NOMADS applications and run the suite after each iteration of changes to the code. As a result, the project team built an automated suite of smoke test/regression scenarios to verify minimal impact to existing applications from changes implemented. The automated nature of this test suite reduced the time to verify system quality and was a sustainable solution that could be used for future changes.

Finalize Closure And Lessons Learned

When an artifact, work product, or procedure is ready to close, the Deloitte project manager directs closing activities and the retention of quality assurance records in the project document repository. A debrief meeting takes place to analyze and rationalize QA records and lessons learned on the project. These lessons are compared to similar instances, which are then reviewed and applied to the five step QA approach in an iterative manner to improve the quality of subsequent project activities.

We recognize the importance of staffing a technical writer on the QA team as soon as possible. The technical writer set up appropriate templates for design documents and

artifacts during the planning process. This avoided rework from not identifying the correct information and effective formatting during design document creation.

On other projects for DWSS, Deloitte realized that the quality of artifacts improved when DWSS had more time to review documents. Therefore, we began to submit artifact components as they were completed to provide DWSS with more time for review and feedback. This avoided situations where DWSS needed to review large artifacts in short amounts of time which compromised artifact quality. Deloitte and DWSS were able to find a process that benefited both teams, the project timeline, and project quality. Lessons like this from our prior experiences will be applied to the NCSEAS project to support project success.

Control Quality Through Improvement Recommendations

The process for quality improvement requires analysis of quality measurements (established during the planning process) and documentation of QA activity results provided by the QA contractor. The Project Manager uses this information to provide improvement recommendations that address defects in artifacts or work products. For example, our Project Manager may recommend that certain design documents be reverse engineered to match the system code and confirm quality. This improvement comes from our experiences when transferring the CA CSE solution to Oregon. Our Project Manager also may recommend process changes to avoid future occurrences of the defect. The artifact or work product is monitored until the improvement has been addressed.

5.8.4 Our Distinguishing Factors

Our proposed resources for the NCSEAS project consist of Leads and a Leadership team with extensive experience in the CSE domain and Health and Human Services (HHS). They have refined our approach to QA to cater to a transfer solution using their experience transferring CA CSE to Oregon along with CSE system transfer experience in other states to both ensure quality and achieve federal certification. The NCSEAS project will have access during QA cycles to Deloitte CSE federal certification domain experts including our Managing Director, Margot Bean, who is one of our CSE domain senior leaders. She has previously served as the federal OCSE Commissioner and certified CA CSE in that role. She also brings extensive CSE knowledge a state perspective, as she led the federal certification of the Guam transfer system as the Guam Director, and the PRWORA federal certification of the New York State system as the NYS Director.

5.9 Metrics Management

5.9 METRICS MANAGEMENT

Vendors shall describe the quality assurance methodology and processes utilized to ensure that the project shall satisfy State requirements as outlined in Section 4, Scope of Work of this RFP.

To capture, monitor, track, and measure specified project metrics throughout the system development lifecycle, Deloitte uses tools like PMC and excel dashboards to track and monitor real-time project performance. These tools provide DWSS with frequent, detailed status reports and updates for project transparency. This approach allows Deloitte and DWSS to determine the necessary set of metrics needed for the NCSEAS Project and applies other CSE projects' best practices.

SECTION HIGHLIGHTS

The metrics management methodology:

- ***Uses established tools to effectively monitor project progress***
- ***Is based on our EVD method established for all Deloitte technology projects***
- ***Uses a collaborative approach to improve efficiency and provide transparency***

5.9.1 Metrics Management Methodology

Our metrics management methodology was developed on other CSE projects, including most recently on the transfer of CA CSE to the ongoing Oregon Origin project. Based on our experience working with DWSS; scope, timeline and budget are high priority metrics. We manage metrics to allow for timeline and budget adherence. Deloitte's metrics management is based on our EVD methodology, which has been implemented in over 500 projects and is constantly improved by our Consulting Methods and Tools team within our Technology practice. Deloitte values metric management for the following key reasons:

- ***Better project planning:*** ***Data from past projects helps in developing plans for a new project and set realistic goals.***
- ***Controlling project performance:*** ***Metrics provide accurate information about the state of the project which can be used to take corrective actions in a timely manner.***
- ***Analyzing and improving project/organization processes:*** ***Metrics measure the capability of organization processes, track the changes in capability of the processes and identify improvement opportunities.***

Metrics management approach, features and benefits are highlighted in the following table.

Features	Benefits
Established metrics management methodology and tools developed based on national CSE experience.	***Deloitte understands how tools can be utilized effectively to capture appropriate project metrics and has used the proposed metrics management methodologies and tools on several CSE projects that have been successfully delivered on-time. Deloitte has also developed familiarity with the DWSS environment and can target their approach to accurately manage the metrics that are important to DWSS.***

Features	*Benefits*
Collaborative approach to metrics management and risk mitigation.	***DWSS and other key stakeholders have the opportunity to help determine the scope of metrics management and decide which metrics should be captured for appropriate monitoring of the NCSEAS project. Capturing the correct metrics lowers the overall project risk by managing and reporting on the key project areas.***
Use of the PMC tool for metrics management.	***Provides DWSS transparency with current status of the project; so DWSS knows exactly how the project is progressing in real-time and potential issues are mitigated before they affect time and budget.***

Table 5-34. Features and Benefits of Deloitte's Metrics Management Approach.

5.9.2 Metrics across Project Phases

We track the specific metrics around schedule, effort, and scope that are necessary to implement a large solution such as NCSEAS. Metrics may be for the historical trend, a single point in time snapshot or future oriented to track current progress against the plan. Some metrics, such as project management metrics, may be reported across the project phases. Other metrics, such as work product completion rate or test case execution rate may be more relevant to a specific phase. The following table highlights metrics commonly captured across the phases or relevant for specific phases based on our experience with reporting similar metrics to manage CSE projects for other states. We will work with DWSS to finalize the metrics that we will capture and track.

Project Phase	*Sample Metrics*
All	***Cost, Schedule, and Resources*** • ***Schedule Performance Index (SPI)*** – ***Effort variance (actual hours vs. planned hours) - comparison of work effort Estimate At Completion (EAC) versus planned hours with major variance explanation and % of hours consumed within a phase*** – ***Scope volatility – scope changes (count and hours) as a gross number and percentage of work in phase*** – ***Actual versus budgeted hours by person*** – ***Earned versus burned hours*** ***Artifacts*** • ***Contract artifacts and major milestone completion status– projected versus planned with major variance explanation*** • ***Overall project artifact completion status*** ***Issues and Risks*** • ***Issues and risks by status (new, in progress, closed) and priority*** • ***Issues and risks aging by priority***
Inception	• ***Statistical estimate to complete (Planned versus Actual versus Completed)***
Elaboration	• ***Scope variance*** • ***Artifact completion rate*** – ***Functional and Technical Requirements*** – ***Functional and Technical Design*** • ***Artifact comments, defects, and type***
Construction	***Development*** • ***Work product completion rate – can be specs or "widgets" as appropriate for the stage/phase*** • ***Defect density*** • ***Code quality***

Project Phase	*Sample Metrics*
	• *Phase yield* *Testing* • *Test case creation completion* • *System testing defects by system component and severity* • *System testing defects trend over time* • *System testing test execution completion rate*
Transition	• *UAT defects by system component and severity* • *UAT defect trend over time* • *UAT test execution completion rate*
Operation	• *Field system usage rates* • *System performance metrics* • *Production defects trends*

Table 5-35. Sample Metrics by Project Phase.

For more information on code quality metrics, refer to Section VII: 5.8 Quality Management and Section VII: 5.12 Peer Review Management. For more information on the metrics captured during testing, please refer to Section VII: 5.13 Testing.

5.9.3 Processes and Tools to support Metrics Management

PMC is the primary project management tool to track critical metrics. In addition to PMC we will also use Microsoft Excel and PowerPoint for progress reports. PMC has been used successfully as a metrics tracking tool for many large state projects, including Oregon Origin, where the CA CSE system is being transferred.

PMC is a user-friendly tool that supports practitioners in performing project management activities through a Web-based application interface. PMC provides a centralized platform to manage each phase and associated sub phase of a project: delivering preconfigured dashboards for project startup, predefining workflows, confirming easy accessibility, information sharing among the parties and producing real-time reports. PMC allows for transparency and collaboration between Deloitte and DWSS

Information is captured at several levels in the tool. At the highest level are the dashboards, which provide a summary view of different metrics, allowing designated team members to gather high level information about the overall health of the project. Further details about the PMC dashboards are explained in the following pages.

The key performance indicators DWSS ultimately decides to track to help assess the overall health of the project are presented to DWSS in weekly and monthly project status updates. The following table explains the principles for capturing metrics developed by Deloitte through previous experience working on similar system implementations. These principles are modified, as needed to meet the specific requirements of DWSS.

Principles	*Benefits*
Document and assign it	*Status information is captured in the PMC tool and provides DWSS with a single tracking mechanism for the project and the owner.*

Principles		*Benefits*
	Quantify and measure progress	***Performance is measured against the project plan and quantifies key metrics such as artifact comments status, # of outstanding issues, # of system defects, and # of completed test scenarios.***
	Agreed upon escalation procedures	***When and how issues are escalated is clearly delineated and is provided to both Deloitte and DWSS staff.***
	Meet regularly	***Regular meetings at different levels of the project team to discuss and record project progress and escalate issues as needed to higher authority for resolution is key to maintaining project progress.***

Table 5-36. Metrics Principles.

5.9.4 Dashboards

In the following subsections, we describe the various dashboards available in PMC.

Project Manager Dashboard

PMC provides a high level dashboard of the overall project status with the capability to drill down into the various components of the dashboard to see lower level details and explore the areas highlighted on the dashboard. Exception messages provide the project managers with a view into the health of the project and areas of the project that may need additional attention. Health metrics and calculations are defined in the project settings and can be defined for project, schedule, effort, and issues. Thus, DWSS is able to determine the types of metrics and information you believe are most important to the NCSEAS project and can customize the dashboard to prominently display this information. The following is a sample Project Manager Dashboard that shows the various metrics that users are able to drill into further for more information.

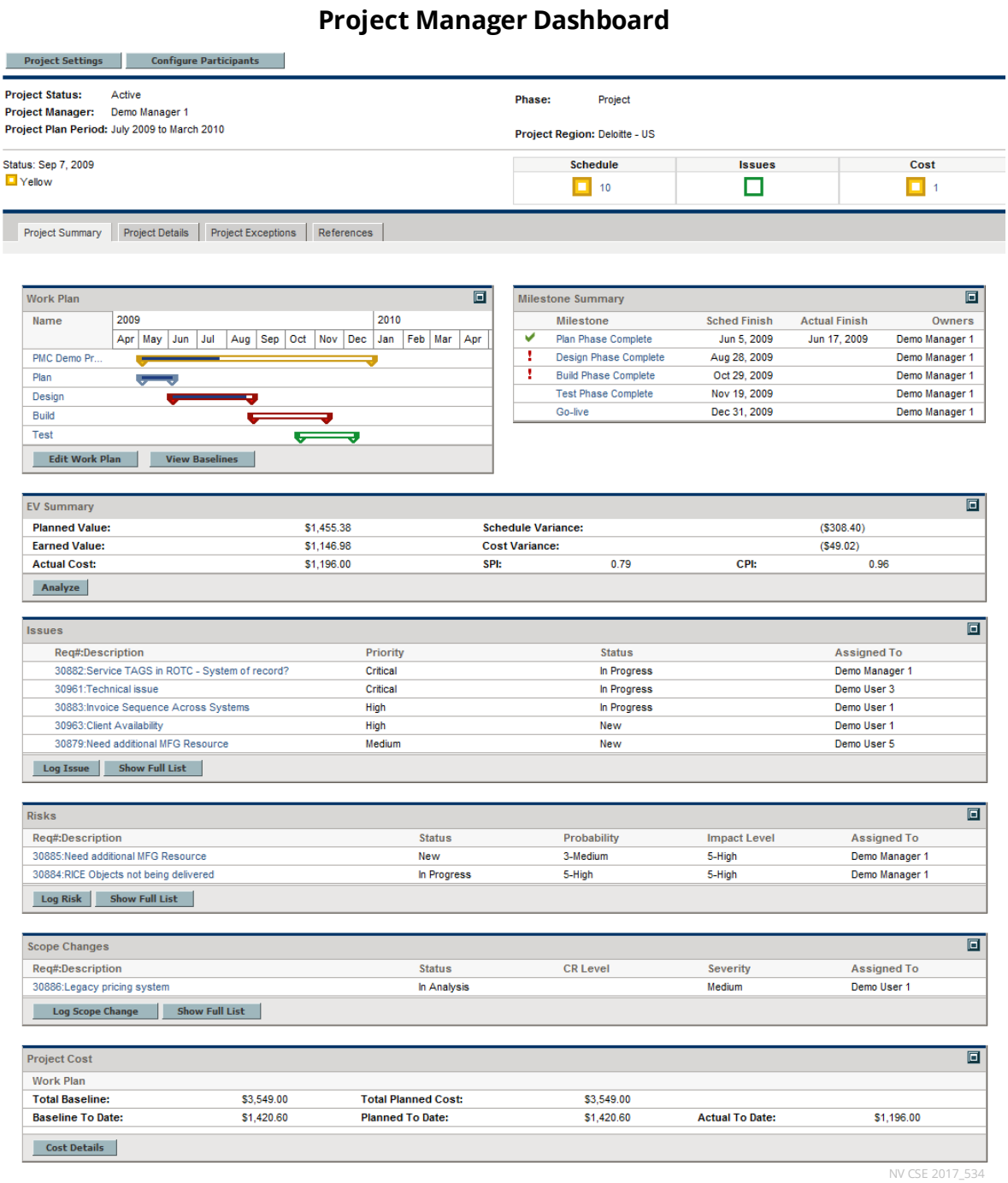


Figure 5-23. Project Summary Dashboard.

PMC Project Summary Dashboard provides a summary view of the project and allows for ease in ascertaining project completion status and other key information.

Work Plan Dashboard

The detailed project metrics information may be obtained from Microsoft Project or the PMC Work Plan Dashboard. The work plan provides the ability to filter the plan by: tasks

completed, tasks in progress, and tasks not started. Time spent and time remaining on the tasks is provided based on the actual work plan status and effort reported by the assigned team members to a task. The Work Plan Dashboard also provides multiple views of the plan. The following is a sample Work Plan Dashboard that shows the project plan incorporated into PMC along with the important project milestones and their status.

Work Plan Dashboard

Completed & Upcoming Milestones

Milestones Summary

Milestone	Description	Status	Scheduled Finish	Actual Finish	Owner
Project Planning	Update Work Plan	Complete	1/10/2011	1/10/2011	Jane Doe
Data Exchange 2.2	Integration of ABC and XYZ	Complete	1/22/2011	1/22/2011	Jane Doe
Data Exchange 2.3	Integration of ABC and 123	Overdue	1/20/2011	1/21/2011	Jane Doe
End User Training	Workgroup ABC module 4 training	In Progress	1/22/2011		John Doe

Project Gantt Chart

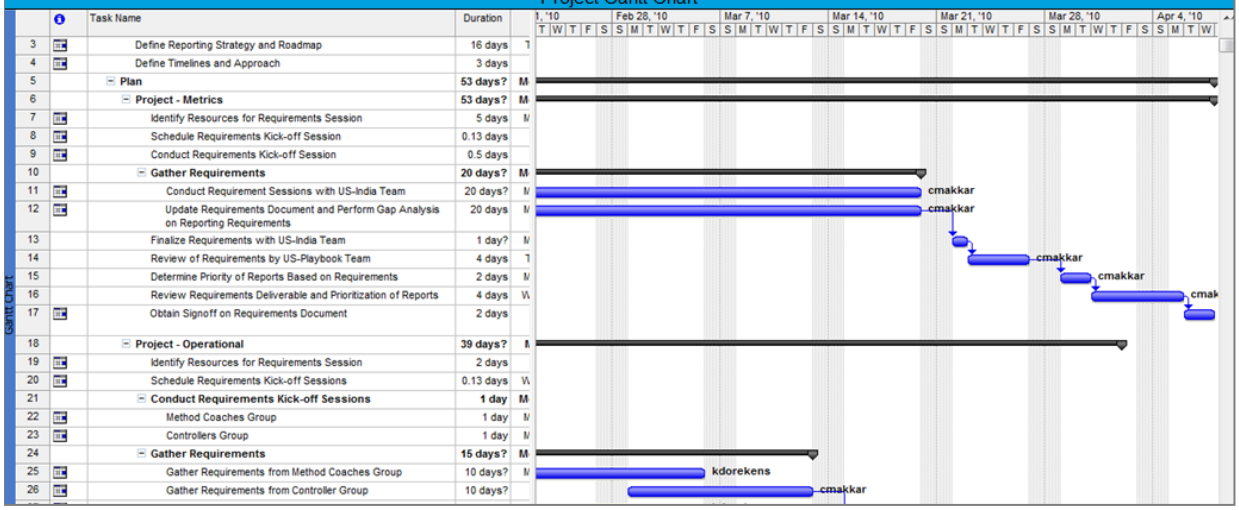


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Figure 5-24. Work Plan Dashboard.

PMC Work Plan Dashboard integrates with Microsoft Project to present a detailed work plan, tracks task completion, and highlighted status of upcoming milestones, helping to keep the project on track.

Risk Manager Dashboard

The Risk Manager Dashboard provides a summary of the risks/issues and classifies potential risks that could affect the project by type, priority, potential impact, and probability of occurrence. The following is a sample Risk Manager Dashboard that provides a high level summary view of the types of risks and issues that can be called out at a high level on the dashboard.

Risk Manager Dashboard

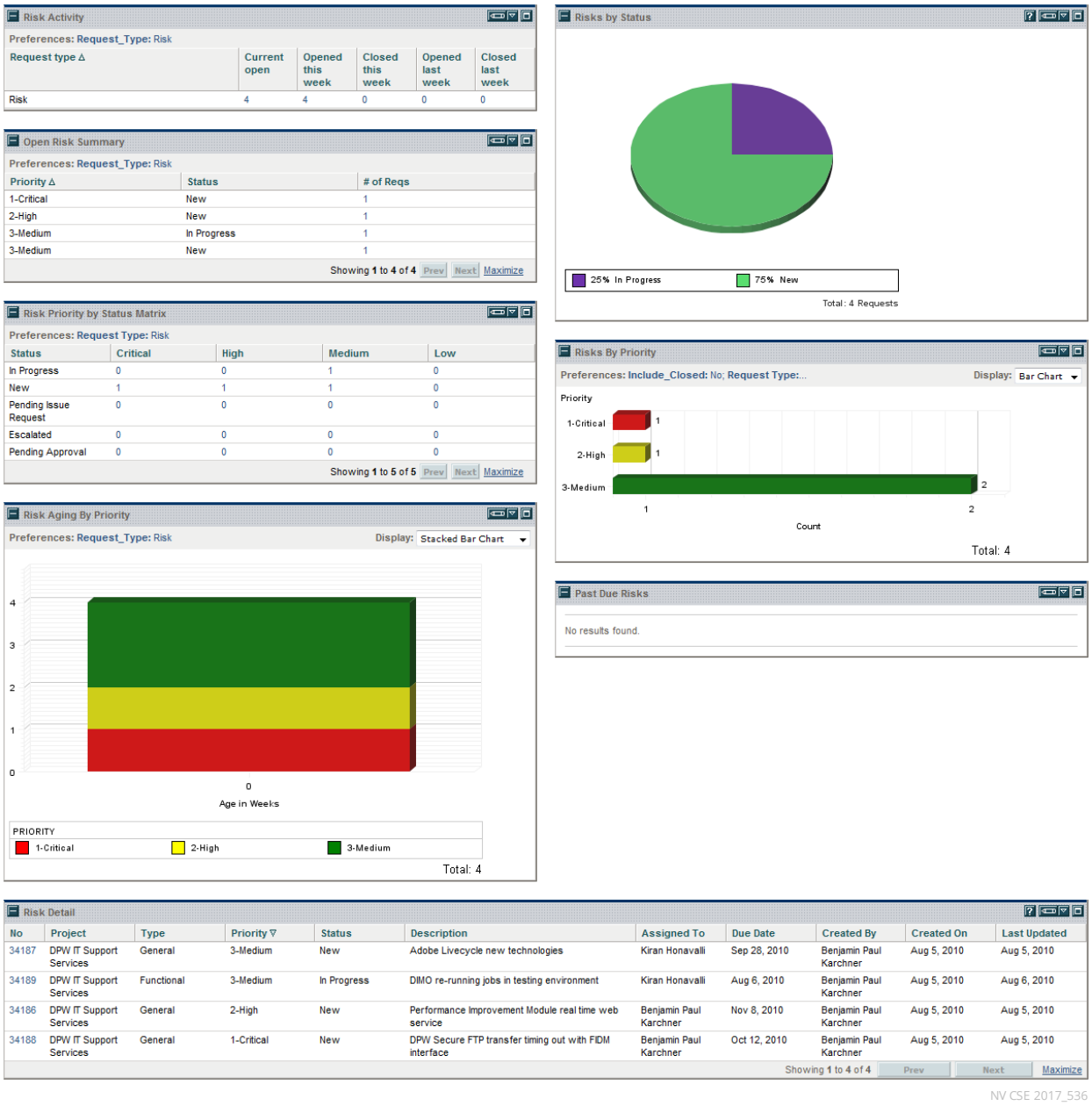

Figure 5-25. Risk Manager Dashboard.

PMC Risk Manager Dashboard clearly highlights risks to the project and is helpful to identify and resolve risks early to mitigate impact to project timeline or budget.

Resource Dashboard

The Resource Dashboard shows the project capacity, load, assignments and project resource utilization down to the task level. The following is a sample Resource Dashboard that shows a high level view of resources and their current assigned tasks.

Resource Dashboard

Resource Assignments

Resource Name Δ	Open Tasks	Task Effort	Open Reqs	Open Pkgs
Cherie Groff	30	78.3	0	0
Dana Crowe	36	110.3	0	0
Doris Hartman	56	123.5	0	0
Jack Bajor	6	32	0	0
Lauren Hughes	12	24.9	0	0
Ryan McFadden	60	318.9	0	0
Scott Meckley	28	109	0	0
Vivek Dhuri	16	58	0	0

Showing 1 to 8 of 8 Prev Next Maximize

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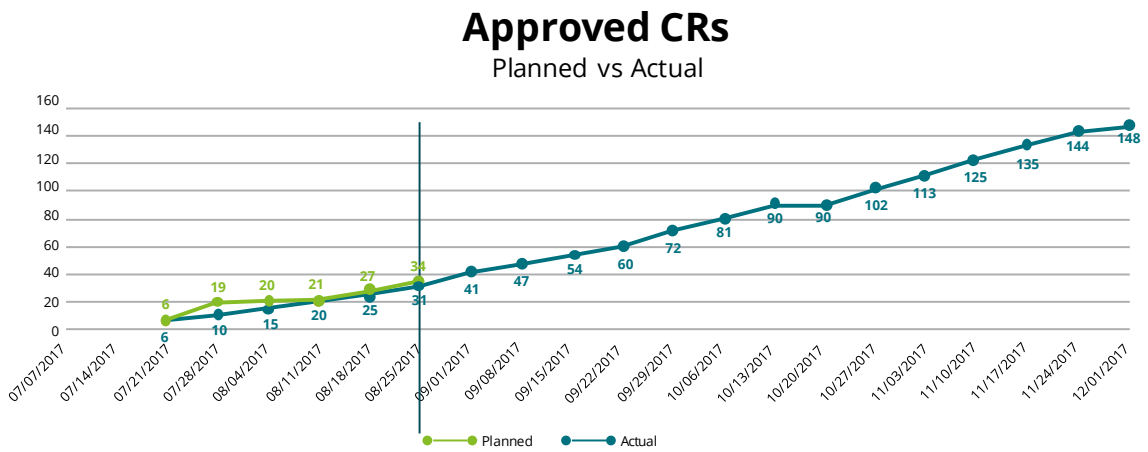
Figure 5-26. Resource Dashboard.

PMC Resource Dashboard provides a high level view of project resources and a quick reference point for determining the workload of each resource and their current utilization on tasks.

Development Status Dashboards

The Development Status Dashboards show progress of work of fit gap requirements development and approved new requirements during the Development Phase. The following sample shows the progress of approved Change Requests (CRs) against actual timeframes planned.



CR No.	Wk. Items	CR No.	Wk. Items	CR No.	Wk. Items
CR 17	19	CR 40	8	CR 53	8
CR 28	11	CR 41	5	CR 57	18
CR 37	16	CR 42	2	CR 63	2
CR 38	1	CR 47	3	CS TU	35
CR 39	15	CR 48	5		

Notes:
- Last CR work item completes on 11/27/2017
- Plan contains 148 work items
- CS TU (Customer Service Techinical Upgrade) is not a CR, it is included for work planning purposes
- **Pending Clarification on employer portal is holding up 9 work items**

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Figure 5-27. Approved CRs (Planned vs Actual) Dashboard

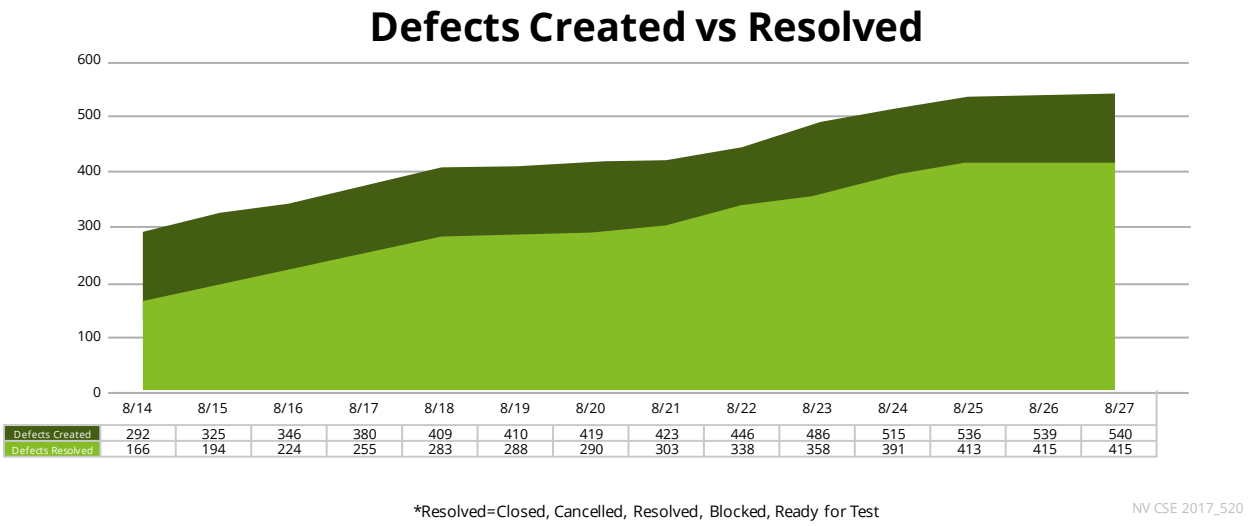


Figure 5-28. Defects Created Vs Resolved Dashboard

System Test Execution Metrics

The System Test Execution Metrics show various metrics reported on daily and weekly basis during the System Test phase. Some sample metrics are shown in the following figures.

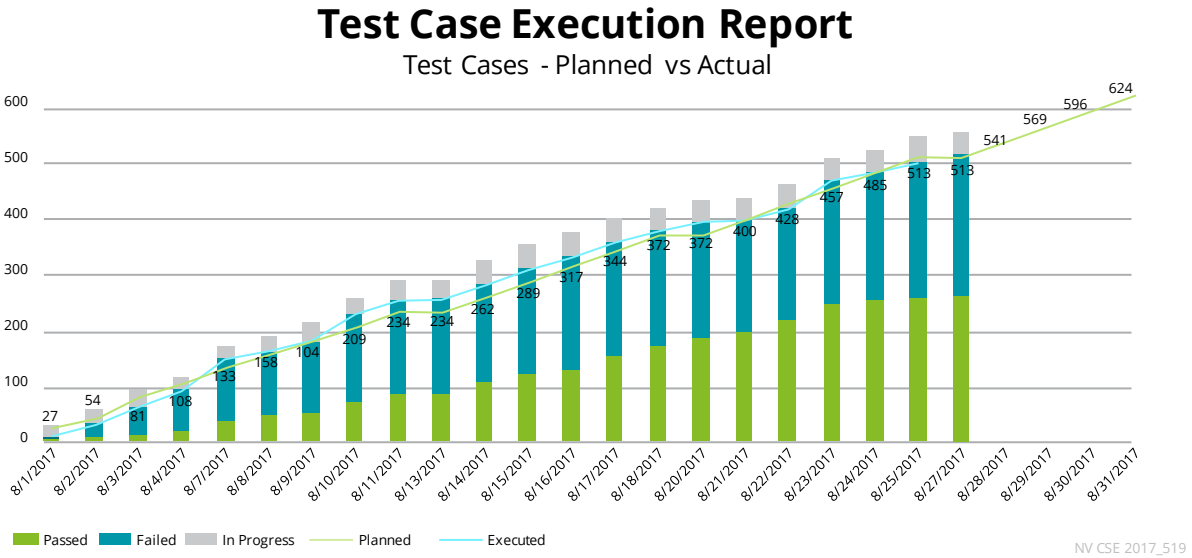


Figure 5-29. Test Case Execution Report (Planned vs Actual)

Online Procedure Status Dashboards

The Online Procedures Status dashboards show progress of developing Online Procedure documents. Some sample metrics are shown in the following figures.

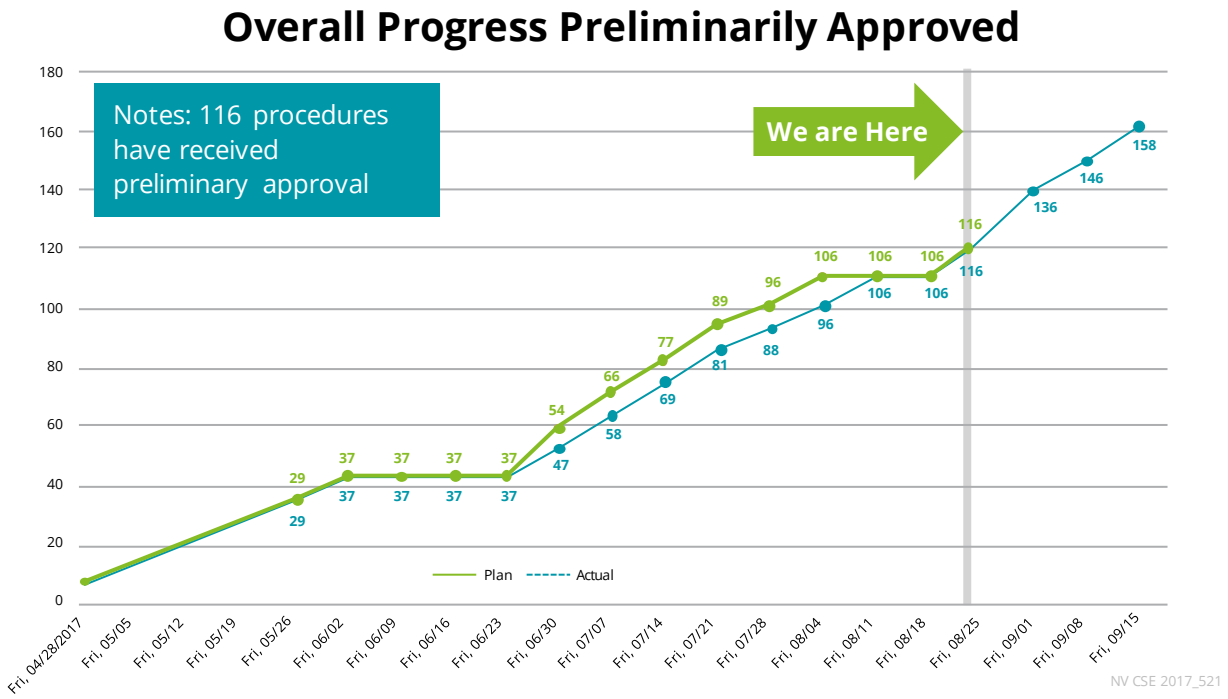
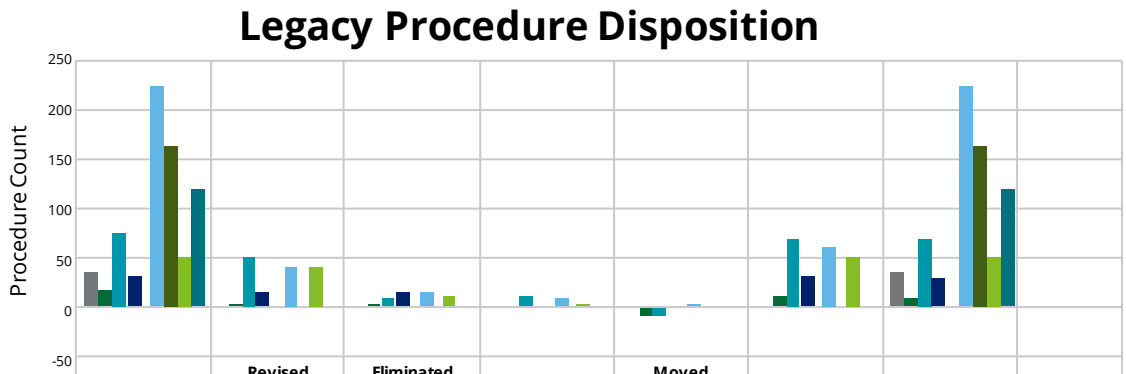
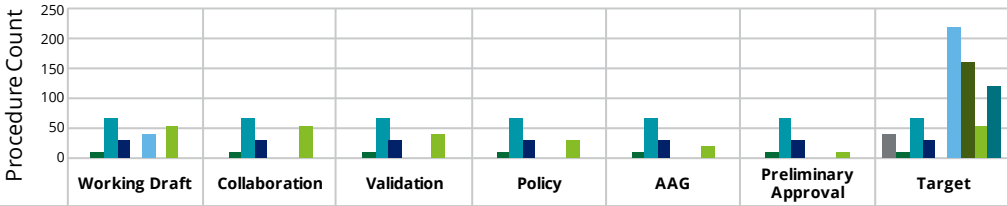


Figure 5-30. Preliminary Approval for Procedures (Planned vs Actual)



	Legacy Total	Revised Procedures	Eliminated Procedures	New Procedures	Moved Procedures	New Total	Target	%
Customer Service	36					0	36	0%
Case Initiation	16	4	3	1	-8	8	8	100%
Case Management	77	52	8	9	-8	69	69	100%
Locate	31	13	15	1	-2	29	29	100%
Reporting	1					0	1	0%
Establishment	222	39	15	5	2	59	224	26%
Finance	163					0	163	0%
Intergovernmental	53	42	9	2		53	53	100%
Enforcement	119						119	0%

Figure 5-31. Legacy Procedure Disposition Dashboard



	Working Draft	Collaboration	Validation	Policy	AAG	Preliminary Approval	Target	%
Customer Service						0	36	0%
Case Initiation	8	8	8	8	8	8	8	100%
Case Management	69	69	69	69	69	69	69	100%
Locate	29	29	29	29	29	29	29	100%
Reporting						0	1	0%
Establishment	41					0	222	0%
Finance						0	163	0%
Intergovernmental	53	53	40	30	20	10	53	19%
Enforcement						0	119	0%

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Figure 5-32. Procedure Review Status Dashboard

5.9.5 Reports

The following are examples of reports the project management team uses to identify, prioritize and develop action plans to execute the project. Deloitte works with DWSS to determine which reports are required for the NCSEAS project.

Report Type	*Report Description*
Key Decisions Management Report	***Automatic report generated through PMC includes list of key decisions and key decision details.***
Project Work Plan Report	***Automatic report generated through PMC includes Work Breakdown Structure with schedule and actual effort tracking and task-based exceptions and notifications.***
Issue/Risk Manager Dashboard Report	***Automatic report generated through PMC includes issue activity, issues by status, open issue summary, issue priority by status matrix, issues by priority, issue detail, past due issues, and issue aging by priority.***
Risk Manager Dashboard Report	***Automatic report generated through PMC includes risk activity, risk by status, open risk summary, risk priority by status matrix, risk by priority, risk detail, past due risks, and risk aging by priority.***
Status Report	***Automatic report generated through PMC includes timeline, completed tasks, planned tasks, late tasks, issues/risks, project schedule and overall health of the project.***
Artifacts Review Report	***Automatic report generated through PMC includes artifact review details, workflow enabled tracking and history of artifacts.***
Resource Management Report	***Automatic report generated through PMC includes resource-based work calendars, resource dashboard showing capacity, load, and assignments, project capacity and load, and project resource usage down to the task level.***

Table 5-37. Reports Generated through PMC.

5.9.6 Our Distinguishing Factors

Deloitte acknowledges the importance and criticality of providing accurate and reliable metrics to the project leadership. The tools and methodologies such as PMC and EVD have been proven on a number of different projects such as Origin and well received and commended by the Federal IV&V including the regional representative. These can be made readily available to the NCSEAS project and customized based on specific project requirements.

In addition have built an approach to create some metrics that a customized for transfer solution from our experience in Oregon with the OR Origin project. We will bring this approach to the NCSEAS project which will help us and DWSS in providing visibility to the various project phases.

5.10 Design and Development Processes

5.10 DESIGN AND DEVELOPMENT PROCESSES

Vendors shall describe the methodology, processes and tools utilized for:

SECTION HIGHLIGHTS

- ***Understanding of existing DWSS systems and design processes***
- ***Collaborative approach early in the design phase***
- ***Best practices gained from working on other child support systems***
- ***Our SDLC, EVD is aligned with PMBOK***

Software design and development includes a CA CSE solution assets transfer fit gap analysis, requirements validation, and a functional and technical design. This leads to transferring the CA CSE system, customizing, and developing the NCSEAS system according to the requirements validation and detailed design. Deloitte uses a Systems Development Life Cycle (SDLC) methodology that is based on our Enterprise Value Delivery (EVD) method. This method has consistently delivered high quality successful technology projects for our clients, including DWSS. Our method has been proven on hundreds of technology projects that Deloitte has implemented. It is supported by a team of standards and methods coaches who are seasoned professionals dedicated to consistently improving our software delivery.

Aligning Transfer Solution SDLC Methodology with PMBOK Guidelines

Deloitte's EVD methodology for design and development is based on PMBOK guidelines. It facilitates the natural progression from the design sub-phase within the Elaboration phase into the development sub-phase within the Construction phase. The EVD phases create a framework for building upon and leveraging the current functionality of the CA CSE transfer system to meet the requirements specified by DWSS.

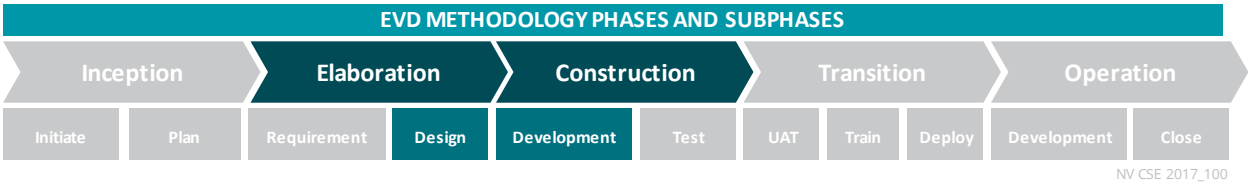

Figure 5-33. The elaboration and construction phases of Deloitte's EVD Methodology.

The design sub-phase of the Elaboration phase transitions to the development sub-phase of the Construction phase of the EVD methodology.

The design and development process leverages methods, processes, and assets following EVD protocol. Understanding of DWSS systems, processes, and people provides a head start as we work together to meet project timelines.

The following table summarizes the features and benefits of Deloitte's design and development methodology for DWSS based on industry standards and previous project execution alongside DWSS.

Features	*Benefits*
The approach to design and development of the NCSEAS solution as a transfer solution from CA CSE is based on leading practices that have already been recently applied and refined in Oregon.	• ***Drive improved performance through a modern and efficient system*** • ***Accelerates the timeline for delivery since much of the guesswork is already understood and resolved from experience working on CA CSE and OR Origin*** • ***Reduces the learning curve for understanding the rules, protocols, and communication processes***
Proven and collaborative Deloitte/DWSS design approach.	• ***Optimizes time of DWSS staff to spend appropriate time on the right activities*** • ***Encourages real-time feedback on design to develop a high quality solution***
A network of practitioners with experience in complex technical environments and business problems relating to CSE.	• ***Reduces risk on the project*** • ***Improves quality of the solution***
Use of industry leading tools such as JIRA, Jama Contour, Microsoft Project, PMC and Perforce to conduct builds, deploy code, perform analysis, establish traceability, unit test, and manage the activities in accordance with approved requirements using industry standards and notations.	• ***Provides quick resolution of challenges and increases efficiency in maintaining, upgrading, and enhancing the system*** • ***Allows DWSS to measure and track the design and development process*** • ***Lowers project risk*** • ***Provides NCSEAS with transparency on software quality***
Rigorous configuration management, change identification and tracking of design and code components including capability to roll back code components and perform cross-version code comparisons.	• ***Increases efficiency managing version control of design artifacts and builds for code components*** • ***Reduces project risk using tools like Perforce and SharePoint***

Table 5-38. Features and benefits for Section VII: 5.10 Design and Development Processes.

Design and Development Processes Catered to Transfer Solutions

Deloitte leverages the fit gap analysis and existing CA CSE project artifacts to drive the requirements, design and development activities for the NCSEAS project. Deloitte's EVD methodology and the foundation from our CA CSE project provide templates, artifacts, and accelerators which allow us to quickly create quality designs in a highly collaborative environment with DWSS. The designs clearly indicate how business requirements are met, requiring less rework and providing a higher level of efficiency for project tasks as development activities begin.

The following graphic provides an overview of the process that Deloitte uses on the NCSEAS project to move from requirements to design to development. Descriptions for each stage are provided in the remainder of the section.

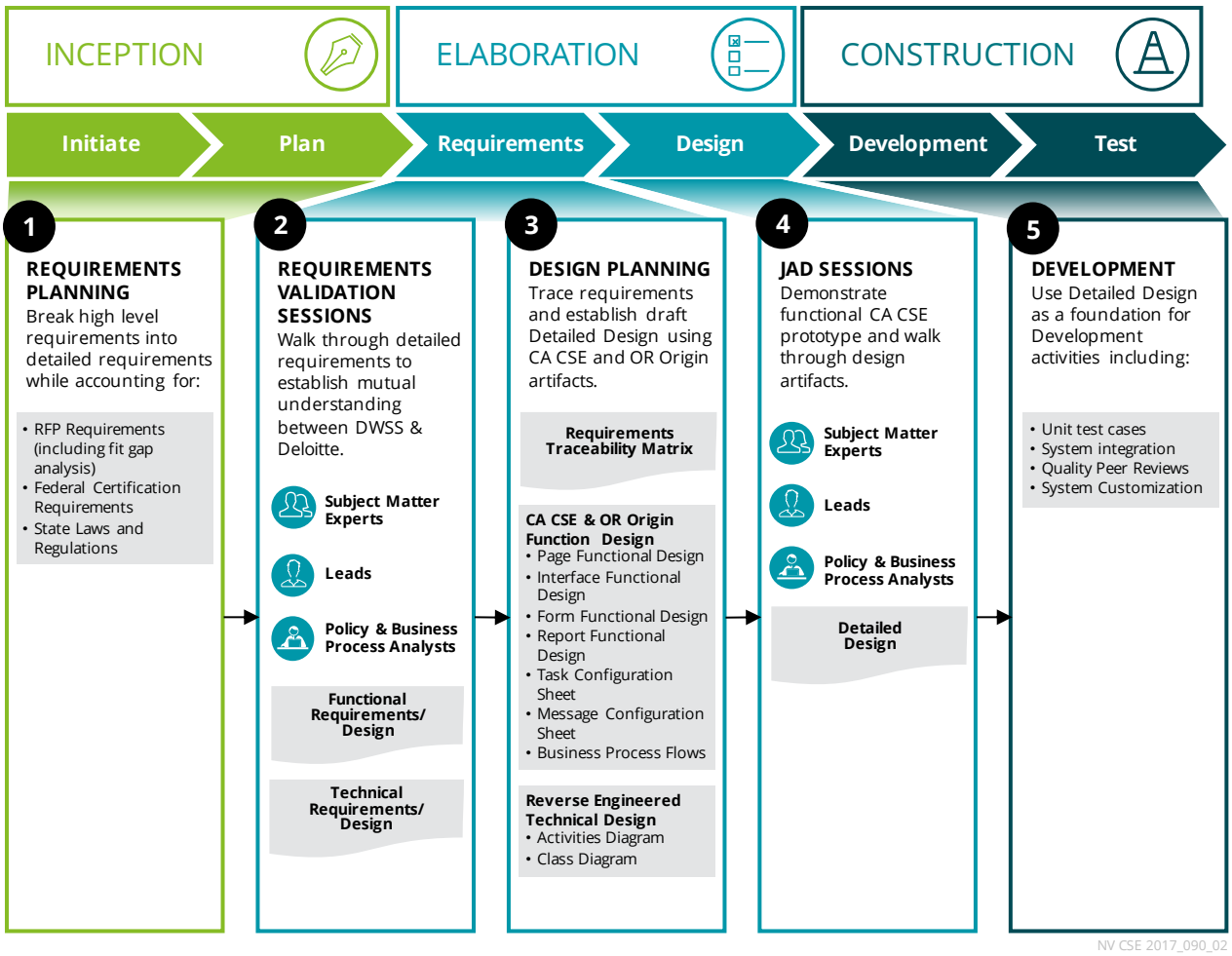

Figure 5-34. Deloitte's approach to requirements, design, and development for the NCSEAS project.

1. Requirement Planning

Each high level RFP requirement is broken down into detailed requirements making sure that Federal Certification Requirements and State Laws and Regulations are taken in to account. The detailed requirements serve as the foundation of design.

Deloitte's knowledge of the fit/gap and current functionality allowed us to estimate the right amount of time for the requirements sessions. The time we spend on mapping Federal certification requirements to detailed requirements helps us to make sure that we are preparing for the end goal of certification from the very beginning of the project.

2. Requirements Validation Sessions

Requirements validation sessions between Deloitte and DWSS provide a walkthrough of the detailed requirements to establish mutual understanding of requirements. Based on our experience in Oregon transferring CA CSE, we anticipate that there will be 44 requirements validation sessions to review and validate NCSEAS functional and technical requirements with DWSS.

Outputs of the requirements validation sessions include a finalized list of detailed requirements which are documented in the Functional Requirements/Design and Technical Requirements/Design deliverables.

3. Design Planning

Once the Functional Requirements/Design and Technical Requirements/Design deliverables are approved, detailed requirements are linked to RFP requirements and federal certification requirements. Reports are generated from the Jama Contour to confirm that functional and technical requirements have the appropriate links. The Requirements Traceability Matrix artifact is also created.

Deloitte leverages the artifacts from CA CSE and the detailed functional and technical requirements to create a draft of the Detailed Design. The detailed design includes the following functional and technical artifacts:

- ***Functional Artifacts:***
  - ***Business Process Flows***
  - ***Page Functional Design***
  - ***Batch Functional Design***
  - ***Interface Functional Design***
  - ***Form Functional Design***
  - ***Report Functional Design***
- ***Technical Artifacts:***
  - ***Task Configuration Sheet***
  - ***Technical Architecture and Design***

- ***Activity Log and Combined Log Configuration Sheet***

4. Joint Application Design (JAD) sessions

During the JAD sessions, Deloitte demonstrates the functional prototype screens of the CA CSE system and discusses the functional and technical design needs for NCSEAS. We perform walkthroughs of the design artifacts from CA CSE, and will demonstrate how the requirement is met by the transfer solution. The sessions are interactive with a mapping of the detailed requirements to detailed design artifacts. The sessions are useful in identifying how a user would interact with the new NCSEAS system, the navigation from screen to screen, and other UI component discussion topics.

Functional and technical JAD sessions are held with DWSS and Deloitte staff, including Policy and Business Analysts, Leads, Subject Matter Experts (SMEs) and other identified stakeholders. We anticipate over 150 JAD (functional and technical) sessions to take place for the NCSEAS project. The technical JAD sessions are spaced out across the entire design phase and focus on database design/modeling, database capacity, performance implications, conversion strategy, and batch design. Since NCSEAS is a transfer system, the basic technical framework has already been established, but through collaboration between Deloitte and DWSS, the technical design is tailored in the JAD sessions to meet DWSS's requirements. When additional requirements are discovered in this process, they are identified in the functional and technical designs and addressed through the change control process.

JAD session material is provided before the JAD session by Deloitte to aid in the articulation of the session topic. PowerPoint presentations, business or technical process diagrams, and standalone handouts are used to convey information for the design session. Materials used during the JAD session are sent to the DWSS stakeholders in attendance for their documentation and future use.

Based on JAD session, Deloitte incorporates the feedback into the detailed design to document how detailed requirements will be satisfied. After the JAD sessions are completed, Deloitte performs quality checks, using detailed standards, guidelines and checklists to finalize the detailed design deliverable.

Upon approval of detailed design deliverable, detailed requirements are linked to detailed design artifacts. The technical design deliverable artifacts are linked to functional design deliverable, as appropriate. Reports are generated from the Jama Contour to confirm that the detailed requirements are linked to detailed functional design appropriately. The Requirements Traceability Matrix artifact is updated.

5. Development

Our development approach includes the activities related to building the system, and also provides frameworks for creating and executing unit test cases, integrating the various elements of the system, and conducting quality peer reviews. The approach integrates well with the other disciplines within EVD, utilizing the outputs of requirements and design sub-phases, and providing the input to testing and deployment sub-phase activities. Deloitte's development approach brings development assets including code libraries, code artifacts,

reusable service-oriented capabilities, technical frameworks, and accelerators to jump-start the NCSEAS project.

During the development phase, the components and application features are either customized from the transferred CA CSE system or developed new and integrated into the NCSEAS system. Code development occurs in multiple iterations. Requirements scheduled for each iteration are developed and unit tested within that iteration. To promote code quality, our EVD methodology uses techniques such as code review by peers and technical leads.

Our Iterative Approach To Effectively Address Requirements, Design And Development

We expedite our delivery through an iterative approach that enables requirements activities, design planning activities and development planning activities to be executed in parallel. We group different business processes into iterations as below:

- ***Group/Iteration 1: Case Initiation, Self Service***
- ***Group/Iteration 2: Case Management, Customer Service, Locate***
- ***Group/Iteration 3: Establishment, Interstate, Enforcement***
- ***Group/Iteration 4: Financials***
- ***Group/Iteration 5: Reports, Forms***

The following are examples of how activities for a subsequent phase start in an earlier phase for each of the above iterations:

- ***Within the Inception phase, while the planning artifacts are being developed and reviewed with DWSS, Deloitte initiates the planning tasks for the Elaboration phase such as planning for the requirement sessions schedule, identifying participants and venues for the sessions, gathering federal and state guideline information, and preparing the requirements artifacts.***
- ***Some planning activities for the Construction phase start towards the end of the Elaboration phase to accelerate development tasks including developing schedule and approach for development, defining roles and responsibilities of the development team, defining code promotion procedures, preparing analysis of the data for conversion and preparing the environment for development.***
- ***To optimize State staff time during the subsequent Transition phase, Deloitte starts some planning activities towards the end of the Construction phase including configuring tools and infrastructure for UAT, preparing for conversion loads, preparing for performance testing loads, identifying onsite support needs, planning for securing FTI data and preparing documentation for Federal Certification requirements.***

Tools to Document, Track, and Facilitate Reviews of Design, Development and Documentation

Deloitte employs three tools during the requirements, design and development – Jama Contour, JIRA, and Perforce. Deloitte uses Jama Contour for requirements and design traceability. This tool tracks software development activities from requirement validation through deployment. It provides a collaborative environment in which requirements can be managed.

Jama Contour provides real-time reporting and metrics on software design and development activities, while tracking the requirements against the design. Jama Contour can also be synchronized with JIRA for end-to-end traceability of the requirement artifacts to project tasks.

JIRA is used to track development activities through the tasks created in the tool. This helps keep the development activities on track as it monitors specific task assignments and performs progress tracking.

Perforce is used during the Construction phase for managing an up-to-date and collaborative code base. This enhances coordination among the teams to keep a clean code base. This tool has already been used in previous DWSS projects, giving DWSS a head start in understanding the tool. This tool is explained in Section VI: 5.11.4. Tools to Control Versions and Builds.

5.10.1 Analyzing Potential Solutions

5.10 DESIGN AND DEVELOPMENT PROCESSES	
5.10.1	Analyzing potential solutions, including identifying alternatives for evaluation in addition to those suggested by the State;

Methodology and Processes for Transfer of CA CSE Transfer Solution that Meets Nevada's NCSEAS Requirements

Deloitte works with DWSS key project team members to define a solution that is based on the validation of impacted requirements found in the fit gap analysis of CA CSE transfer solution, to develop the NCSEAS solution. When designing the solution, we consider the detailed requirements DWSS has enumerated from the Requirements Planning sessions. In addition, we also understand the downstream impacts to other integrated components.

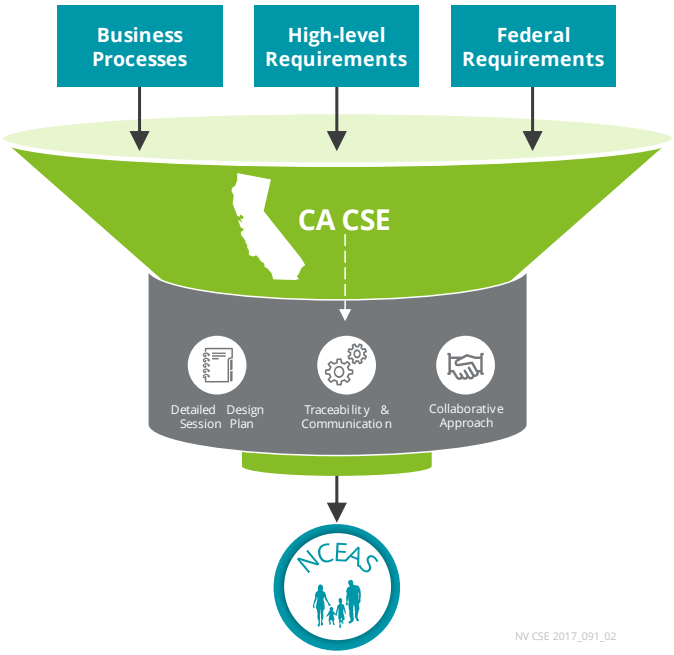

Figure 5-35. Design Principles for NCSEAS.

The CA CSE software components serve as the baseline for the transferred solution, in accordance with functional and technical design artifacts. However, improvements can still be made to the design of the CA CSE system. Since assuming maintenance and operations responsibility for CA CSE six years ago, Deloitte has significantly improved the CA CSE solution. Examples of implemented customizations to the solution include:

- ***Bringing CA CSE into compliance with the current OCSE standards for the FCR and FPLS interfaces***
- ***Implementing a solution for providing participants with electronic access to their case documents via the Customer Connect Self Service (SS) Web site and allowing to choose electronic delivery, providing a significant cost savings***
- ***Enhancing the CA CSE guideline calculator to incorporate emerging rule changes in a Rules Engine and confirm that the guideline output is consistent with OCSE regulation and guidance. Usability changes were also made to provide more default values and reduce the need to enter required data to facilitate calculations***
- ***Implementing a caseworker task summary capability to improve customer service and provide caseworkers the ability to manage and efficiently complete tasks***
- ***Implementing electronic income withholding (e-IWO) for the OCSE Employer Portal, facilitating electronic withholding for more than 1,300 employers, beyond the 15 DFAS employers***
- ***Implementing a bi-directional interface between CA CSE and The Work Number for employment verification and employment and income history information for case participants***

- ***Implementing a high-level of integration between CA CSE and the Kofax Local Scan Solution, allowing CA CSE users to access documents directly from within the CA CSE solution rather than a separate inbox***
- ***Implementation of the OCSE Query Interstate Cases for Kids (QUICK) interface to provide California's real-time participant, financial, case activities, and contact information to and from other states***
- ***Created bidirectional interface with OCSE for electronic Levy processing for US bank and future plans on brining on Bank of America and Wells Fargo***
- ***Created Case Intake Customer Service module (VIOLA) that is mobile friendly and integrates with CA CSE***
- ***Created bidirectional electronic Lien processing interface between CA CSE and vendor SECURE for County Recorders offices for LA, Orange, San Diego and San Mateo counties***
- ***Upgrading the CA CSE document generation capability to the latest version of Adobe LiveCycle***
- ***Upgraded SDU interface to allow for international disbursements.***
- ***Reverse engineering the design documentation to be in sync with the transferred CA CSE design documents***

Deloitte has also participated in several major technology component upgrades of CA CSE to more current software versions, including upgrades to AIX v6.1, IBM WebSphere Application Server (WAS) v7.0, IBM WebSphere MQ v7.0, and IBM HTTP Server v7.0. This team — many of whom will be deployed on the NCSEAS project – bring first-hand perspective and capability that only experiential learning can bring to underpin the NCSEAS modernization project. Our team also includes staff who bring first-hand experience with DWSS technology standards.

As a national leader in implementing CSE projects, Deloitte brings not only our experience with the improvements made to the CA CSE system, but a wider perspective from leading practices and best alternatives nationally. We have experience implementing full CSE solutions for states as well as specific functions or modules such as Data Warehouse and Analytics, Self Service Portal and Document Generation for states. Depending on the gap and improvement needed for the NCSEAS project, Deloitte may be able to use leading practice examples from other states to inform our designs. A prime example of this is the application of the best practices from transferring the CA CSE system to Oregon. Certain gaps between the CA CSE system and NCSEAS requirements may have been already identified during the transfer of CA CSE to CA CSE Oregon, thus Deloitte may have previously addressed these gaps.

A Process to Analyze a Potential Solution that Relies on a Thorough Understanding of the Base CA CSE System and Enhancements

Understanding the code base being transferred from CA CSE to NCSEAS begins with familiarity of the overall architectural design, allowing our team to quickly stand up a functional prototype and make knowledgeable design decisions prior to the development

process when drafting modifications. This well-informed blueprint leads to a streamlined development process, allowing technical staff to focus on specific areas of interest directly affected by the modification, in an effort to promote timeliness and manageable scope of the customizations.

We believe that leveraging Deloitte's unique familiarity with the CA CSE solution contributes greatly to the success of the NCSEAS project — and this knowledge reduces project risk as summarized in the following table.

Features	*Benefits*
The CA CSE solution that Deloitte maintains serves as the base for NCSEAS	• ***Reduces risk of project failure*** • ***Reduces cost to DWSS through reuse*** • ***improves quality of the overall solution***
A clearly defined system integration approach and deep integration experience	• ***Reduces the risk while integrating with many external providers and disparate system components*** • ***Facilitates communication among project stakeholders*** • ***Successful development and execution of a comprehensive system integration approach***
Deloitte can apply lessons learned from OR Origin for the NCSEAS project	• ***Increases efficiency of project as many roadblocks can be avoided from knowledge gained in similar CA CSE transfer project in Oregon*** • ***Established network of people that understand possible risks and issues that may be faced in the transfer in Nevada***

Table 5-39. Features and Benefits of Deloitte's Solution Analysis Approach.

5.10.2 Operational Concept

5.10 DESIGN AND DEVELOPMENT PROCESSES

5.10.2 Developing a detailed operational concept of the interaction of the system, the user and the environment that satisfies the operational need;

Methodology that Provides Comprehensive Artifacts that Detail the Operational Concept of the System

Deloitte's EVD methodology provides detailed functional and technical design artifacts as part of the waterfall SDLC process that have been developed based on experience on numerous large scale commercial and public sector projects including CSE projects in other states. The design artifacts serve as accelerators for DWSS to view a detailed operational concept of the interaction of the NCSEAS system, the user, and the environment that satisfies the operational need. Designing the operational concept of the system requires design artifacts to document the details captured throughout the process. Many of these design artifacts can be transferred from CA CSE to the NCSEAS project, with modifications made in order to meet DWSS's specific requirements. Having these existing functional and technical design artifacts gives DWSS a head start in transferring the CA CSE solution to Nevada.

Functional artifacts in the detailed design include Business Process Flows, Page Functional Design, Batch Functional Design, Interface Functional Design, Form Functional Design, Report Functional Design, Task Configuration Sheet, Message Configuration Sheet and an Activity Log and Combined Log Configuration Sheet. Technical design is documented in

technical architecture and design, logical and physical data model, coding standards, and security architecture.

Promoting Efficient Design Sessions by Providing DWSS with a Clear Operational Understanding of the CA CSE System

To maximize the time during design sessions and enhance DWSS's operational understanding of the system, Deloitte brings an approach that was used to understand and set expectations for the OR Origin system.

Prior to JAD sessions, Deloitte provides DWSS with access to the functional prototype of the CA CSE system. By providing this prototype system to DWSS before JAD sessions, JAD session participants from DWSS have time to play in the prototype to improve their understanding of the CA CSE system. Design session participants from Deloitte and DWSS are better prepared for JAD sessions given the common understanding of CA CSE functionality and identification of solution gaps with NCSEAS requirements. This reduces potential contention on project resources since JAD session time is dedicated to discussing the deltas between the NCSEAS requirements and CA CSE system, instead of explaining what the CA CSE system does. Coming out of the functional JAD sessions, we can easily identify and make references to screens and functionality that is changing as a result of the NCSEAS requirements.

During the OR Origin project, Deloitte mocked up screens that addressed gaps between the OR Origin requirements and the CA CSE system and new screens for the system. These high fidelity mock ups provided a more visual understanding for users as to how the system would operate thus increasing the productivity of JAD sessions. A similar approach can be taken for the NCSEAS JAD sessions

5.10.3 Identifying Key Design Issues

5.10 DESIGN AND DEVELOPMENT PROCESSES	
5.10.3	Identifying the key design issues that shall be resolved to support successful development of the system; and

A Methodology and Process that Tracks Design Issues from Identification to Resolution

When design issues are identified as part of the design and development SDLC methodology, Deloitte follows a methodical approach to tracking requirements, analyzing solutions, identifying optimal design patterns, resolving design issues, and developing and implementing a system solution. Throughout the development of design and up to finalization of the design, iterative refinement through meetings between Deloitte and key DWSS stakeholders allows us to hone the design. DWSS users at different levels, as desired by DWSS, participate in this review process. When design issues are identified, Deloitte performs an impact analysis to understand the design challenge, document the issue, communicate the outcome of the design issue, and then works with DWSS' staff to resolve the issue. It is possible that requirements that were overlooked can follow the change control process. This approach increases the transparency of the design sub-phase as a

whole, and allows the DWSS to see exactly the system they are getting, having watched it evolve from the start.

Deloitte's understanding of the DWSS environment saves time when design issues arise, enabling the team to develop mitigation approaches. Additionally, any design issues that may not be foreseen for the moment can be more quickly understood.

Identification of Key Design Issues for NCSEAS Based on our Transfer of the CA CSE System to Oregon

The implementation of CA CSE in Oregon gives us unique insight into design issues that have already been identified as part of the transfer CA CSE solution. As the only vendor to transfer current-state to another state we have identified, understand, and have a proactive plan to proactively mitigate the issues for NCSEAS. A few examples are provided in the following table.

Design Issue	*Description*
Complex areas of CA CSE system	***Complex areas of CA CSE system such as financials require customization for account changing, financial allocation and distribution rules, electronic funds transfer management, audit capabilities and overpayment recovery.***
IV-A, IV-E, Title XIX and Other Interface Integration	***Interfaces with external partners create dependencies that need to be factored into design. There could also be design issues related to timing of other systems going live.***
Guideline calculation	***Guidelines module varies from state to state. Customization is needed to meet the requirements for Nevada Guideline Calculations for state specific rules.***
Administrative Establishment	***CA CSE system does not have Administrative Establishment so we need to custom design this based on functionality designed for other states which Deloitte has implemented.***
Court Interface	***A complex interface with the Nevada Court Systems sending a referral and receiving an image of the order will be required.***
Family Violence Indicator and Address Confidentiality	***Family Violence Indicator, Address Confidentiality and Claim of Risk will be analyzed based on Nevada rules incorporated across screens and forms.***
Document Generation (Forms)	***Each state has own unique legal forms. Forms for Nevada need to be automated and customized to make sure Nevada specific legal language is present. CA CSE system needs to be customized to support Nevada state specific appointment letters and petition notices. Additional forms will have to be customized.***
Performance related design issues	***Balance Regeneration in California runs every 15 minutes because of performance considerations. This will have to be adjusted in Nevada considering volume of cases and hardware capabilities. Performance of real time interfaces and federal reports generation will also require detailed analysis and adjustments.***
Product Integration	***Being a tool agnostic vendor, our team has experience and knowledge with implementing various tools for different purposes in each of our CSE systems and understand the underlying issues with integration. For example, the base CA CSE solution uses Adobe for document generation. Based on our experience with your existing investment, Thunderhead, we know the features and issues with the tool to anticipate and develop a successful strategy for the integration.***
User Interface Standards	***Based in our experience with OR Origin project we anticipate a need for Nevada to change some Style Sheets and User Interface standards in the CA CSE system. This would be to change color schemes and logos specific to Nevada DWSS in the base CA CSE system.***

Table 5-40. Key Design Issues Identified for NCSEAS.

5.10.4 Integrating Disciplines

5.10 DESIGN AND DEVELOPMENT PROCESSES

5.10.4 Integrating the disciplines that are essential to system functional requirements definition.

A Collaborative and Traceable Methodology and Process to Integrate Disciplines for Functional Requirements Definition

Deloitte recognizes that the requirements management approach and process to define the system functional requirements is critical to the success of subsequent design and development sub phases of the project. This foundation is equally important to testing and training activities, since the resulting scenarios are based upon the underlying business needs as documented in our requirement document for NCSEAS project. Deloitte understands that this effort needs to provide a sound basis of requirements and effectively balance levels of clarity with requirement granularity, eliminate "requirement-churn," and promote traceability of requirements through design and development phases.

The detailed process for submitting, reviewing, and accepting requirements is agreed upon before the requirements sub-phase begins. To integrate the many disciplines associated with the NCSEAS project, Deloitte and DWSS stakeholders have to place an emphasis on involving SMEs, testers, and potential trainers from the different disciplines so that there is involvement and understanding of the solution across the impacted systems and users. This includes coordinating with interface agencies from requirements validation through development.

Working closely with DWSS, we confirm that the requirements sub-phase is conducted according to the plan. The plan for requirements gathering constitutes:

- ***Identifying stakeholders from Deloitte and DWSS (including external stakeholders required based upon Deloitte and DWSS expertise)***
- ***Scheduling meetings with relevant members of Deloitte and DWSS team***
- ***Defining and recording roles and responsibility of the team***
- ***Breaking down the functional and technical requirements***
- ***Understanding functional and technical dependencies***
- ***Defining/adhering to the approval mechanism***
- ***Defining fit gap analysis criteria, weightage, scoring, and reporting results***

A critical planning step is selecting the right people to participate in the JRP and covering the right topics. We begin our requirements planning process by identifying the key resources needed for each functional and technical component of the solution. These key resources include key DWSS stakeholders, as well as some end users who provide frontline knowledge of the business along with technical and system management staff. For example, for some of the complex business processes related to Financials, in order to minimize risk and promote quality, we make sure to include our national CSE specialists with similar knowledge in other States to be involved in the design. We also bring our experienced national experts to collaborate with DWSS during the critical Federal

Certification process. The key DWSS stakeholders are absolutely required as decision makers that can step in when multiple options and/or approaches are available. In an environment with many disciplines, the decision makers are a critical piece to bring individuals to a consensus or compromise. Although most of the requirements may be functional in nature, it is important to understand the technical requirements in order to integrate with the existing infrastructure and other systems.

Our approach of working closely with DWSS during the requirements sub-phase to review our detailed fit gap analysis to validate Nevada's requirements enables us to get very clear, concise, detailed customization requirements resulting in effective design sessions for the CA CSE transfer solution. From the design sessions, there will be champions delegated to serve as SMEs in the field to assist with subsequent phases of the project. This approach allows for the development of a cohesive unit at the beginning of the project and continuing to build upon that with each subsequent phase.

Discipline	*Our approach for functional requirements definition*
Project Management	***Continuously apply or PMBOK based management guidelines to manage the requirements validation process and report on progress.***
Quality Management	***Incorporate structured processes, peer reviews, automated tools, unit testing and escalation of approvals to validate quality of design and code.***
Integration Management	***Promote collaborative and inclusive approach to coordinate activities and schedule tasks with stakeholders to define the requirements.***
Scope Management	***Detailed fit gap analysis provides DWSS with the confidence in managing and controlling scope to reduce risk.***
Time Management	***Iterative approach to validate requirements and design and develop code for business processes optimizes time of State staff.***
Cost Management	***Effective scope control and effective scheduling of tasks and resources enables effective management of costs.***
HR Management	***Structured and organized Project Schedule helps with bringing the right people at the right time for meetings for requirements and design and for development.***
Communications Management	***Effective and timely distribution of artifacts as well as project status reports keeps stakeholders well informed on the progress of the requirements and design.***
Issue and Risk Management	***Proactive identification, monitoring, tracking, resolution, and closure of issues and risks during the requirements definition enables smooth transition to subsequent phases.***

Table 5-41. Integration Disciplines for Functional Requirements Definition.

5.10.5 Our Distinguishing Factors

Described in the following are the differentiators of Deloitte's Design, Development methodology and knowledge which provides the DWSS with a foundation of experience enabling a successfully design and implement the NCSEAS solution:

- ***Our proposed resources for the NCSEAS project consists of Leads and Architects with experience of our California CA CSE and Oregon Origin projects. They built a set of detailed system requirements that traced the Oregon requirements to the California system that helped us identify areas of modifications and customization required to transfer CA CSE. We used this as an accelerator in Oregon and found it extremely helpful***

in launching requirements sessions. We have updated this tool to now map it to the current CA CSE system and the Nevada requirements. We bring this tool that will provide a detailed set of requirements that is traced to the Nevada RFP requirements and the Federal certification requirements as a project accelerator.

- ***Our SMEs in California with thorough working knowledge of the CA CSE system built a knowledge base of use cases and module inventory mapping them to system requirements. This served as an accelerator to validate requirements and conduct JAD sessions with the aid of the proof-of-concept in the design phase.***
- ***As a part of our Oregon project, we engaged Deloitte's Consulting Methods and Tools division to customize our Enterprise Value Delivery Methodology to transfer California. The customization to our EVD has now been institutionalized as part of our feedback loop. The refined EVD methodology will help accelerate the design phase in NCSEAS project.***
- ***Based on our past experience with the OR Origin project, CA DCSS did not transfer the procedure manuals and "How-To" for using the custom CA CSE framework, architecture and configurations. Through our in-depth knowledge of the CA CSE system we formed an approach and methodology to create manuals and "How-To" for the OR Origin project. We will bring this approach to the NCSEAS project to accelerate the process of standing up the base CA CSE system and customizing it to meet the need of DWSS. This will also accelerate the process of bringing on on-boarding new design and development resources for the NCSEAS project.***
- ***Through our in-depth design and code knowledge of the CA CSE system we can accurately perform impact analysis during design, development, and software upgrades. This early impact analysis will help the project resolve any issues early during design enabling a smooth development and testing phase.***
- ***Deloitte is uniquely positioned to provide the skills, expertise, and experience to design and develop NCSEAS solution. From our experience in California and Oregon, we not only know what functionality from State of California works smoothly in Nevada transfer solution but also know where the problems are, where to fix them and how to prioritize these fixes during customization of NCSEAS solution. This in-depth knowledge that Deloitte possesses about CA CSE solution is unmatched.***

5.11 Configuration Management

5.11 CONFIGURATION MANAGEMENT

Vendors shall describe the methodology, processes and tools utilized for:

Our Configuration Management (CM) approach is built on Deloitte's EVD methodology. In addition we have further tailored the approach for the NCSEAS project based on our experience at DWSS and recent experience with the OR Origin project which is also a transfer solution from CA CSE system.

CM enables management and control of technical components, deliverables, and artifacts. Tracking these is important through the phases of the Software Development Life Cycle (SDLC). This is especially critical during the completion of development activities in the development sub-phase, as Deloitte uses iterative programming techniques for development and unit testing as part of its proven EVD methodology. Key elements of our CM approach include:

- ***Store and version-control of the NCSEAS solution code, documentation, deliverables, tools, system artifacts, and other configuration items in SharePoint and Perforce***
- ***Implement secure check-in/check-out features for maintaining accuracy of code to support a continuous integration environment***
- ***Create a source code tree structure that facilitates iterative development across multiple releases***

SECTION HIGHLIGHTS

Our approach:

- ***Leverages Deloitte experience on California and Oregon CSE projects to acquire assets from California, get the application up and running in Eclipse, and create build and deployment scripts***
- ***Utilizes rigorous configuration management processes to maintain version control***
- ***Establishes an efficient change control process that aligns with DWSS' existing processes***
- ***Utilizes DWSS' existing investments supported by industry leading tools***

CM Methodology Based on CMMI Guidelines

CM is one of the key disciplines in Deloitte's EVD methodology and is developed based on Capability Maturity Model Integration (CMMI) and Software Engineering Institute (SEI) guidelines. Our CM methodology validates that the identified baseline configuration items (e.g., deliverables, application code, acquired software) and approved enhancements to these items are controlled and managed during the development of the NCSEAS solution. The project components placed under CM include software, documentation, and infrastructure components supporting the NCSEAS project. Holistic CM activities span across deliverables and code and reduce risks associated with multiple code versions, and parallel development activities.

Based on our experience with previous DWSS projects, we are familiar with DWSS policies, people, infrastructure, business processes, and the need for alignment with the DWSS CM roadmap. This familiarity stems from successful projects in collaboration with DWSS. The benefits of the CM methodology are in the following table.

Features of configuration management	*Benefits to DWSS*
Rigorous change identification and tracking of code, database, rules, and configuration items	• ***Reduces the probability of repetitive builds and improves delivery time in the environment*** • ***Uses tools such as JIRA and Perforce to enhance build management and reduce the risk of a missed file, saving time during the deployment process***
Automated email communication of build schedules and status	• ***Improves coordination and communication across build cycles, enabling us to deliver software releases quickly*** • ***Enhances quality and awareness by development staff to plan for the next build***
Traceability from requirements to design artifacts is enforced	• ***Use of Jama Contour provides traceability to reduce the probability of requirements or design specifics getting lost*** • ***Reduces adoption time and supports transition***
Document change control included	• ***Improves the overall tracking of who made the change and when the change to the document was approved*** • ***Provides a standard and consistent process enforced by the Deloitte team, improving the overall quality of the documents***
Consistent build management processes and tools across the NCSEAS solution	• ***Reduces variation in the build process, which decreases risk across coordinated builds for NCSEAS environments*** • ***Provides the state with a single point of contact for builds across environments, saving your staff time***
Ability to roll back changes if needed	• ***Minimizes disruption to users*** • ***Prevents instability of system if there are issues with a new build***

Table 5-42. Features and benefits of our configuration management approach.

Standard Processes and Robust Tools Support the CM Methodology

Our EVD methodology includes standard processes for configuration management. We have tailored the standard processes to fit the needs of DWSS. These processes are covered in more detail in the sections following.

The tools used to support CM are covered in the following sections: Section VII: 5.11.4 Version and Build Tools, Section VII: 5.11.5 Regression Testing, and Section VII: 5.11.6 Tools, Change Logs, and Modules.

5.11.1 Changes to Requirements, Design, and Code

5.11 CONFIGURATION MANAGEMENT	
5.11.1	Control of changes to requirements, design and code;

Configuration Management Methodology Controls Changes to Requirements, Design, and Code

The configuration management methodology controls changes to requirements, design, and code configuration items (CI). A CI is:

- ***An aggregate of software and design documentation***
- ***Developed, versioned, and managed as a single item***
- ***Baselined at a defined point in time in the system lifecycle***

The configuration management approach includes identification of the following:

Configuration management approach	
• ***Naming conventions***	• ***Versioning schemes***
• ***Control of changes to requirements, design, and code***	• ***Control of interface changes***
• ***Traceability of requirements, design, and code***	• ***Tools to help control versions and builds***
• ***Parameters established for regression testing***	• ***Baselines established for tools, change log and modules***
• ***Documentation of the change request process including check in/out, review and regular testing***	• ***Documentation of the Change Control Board (CCB) and change proposal process***
• ***Change log that tracks open/closed change requests***	• ***Controlled storage of configuration items***

Table 5-43. Configuration management approach.

The CM Process Supports Creating New and Changing Existing Requirements, Design, and Code

Creation of Validated Requirements, Design, and Code

At the start of the Elaboration phase, the requirements and system design documents are placed under version control. Code items are placed under version control once the Construction phase begins. CIs are created and baselined throughout the lifecycle of the project. Prior to initial baselining, a CI is under development and can be changed prior to its deployment in any environment. A baseline marks that the CI is complete in its current state and cannot be updated without a formal cause, such as a defect, change request, or scheduled work plan activity.

When the Functional Design, Technical Design and Detailed System Design are approved by DWSS, the documents are loaded into DWSS' document repository to maintain version control for the remainder of the Project. After the completion of design, code components are created and managed using Perforce.

If there are any changes to the DWSS approved requirements, Functional Design, Technical Design or Detailed System Design and the developer checks code for modification a new CI will be created. The developer will make the code updates based on the new CI and new CI will be linked to the Change Request initiated for the DWSS approved requirements, Functional Design, Technical Design or Detailed System Design change.

The following figure provides a sample of the configuration management process for development of code configuration items.

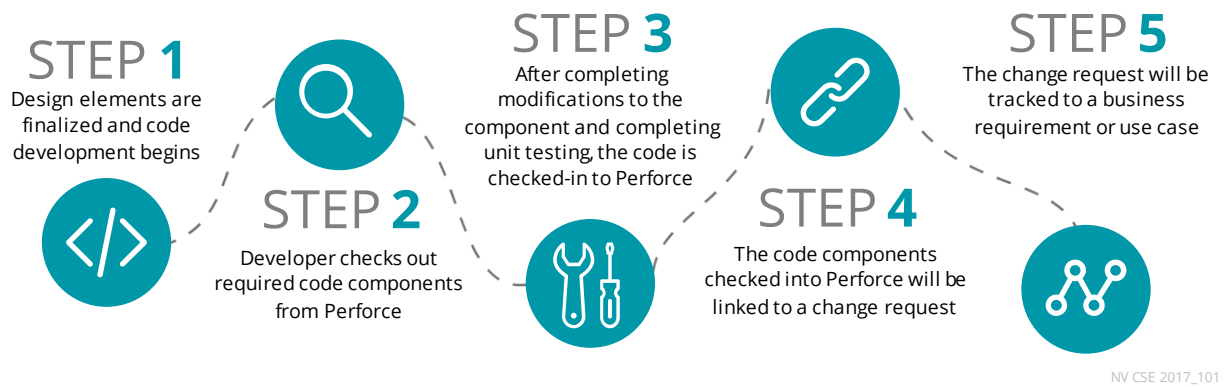

Figure 5-36. Sample configuration management process for code configuration items.

Deloitte's approach to achieve version tracking for application and configuration components of the NCSEAS project is to leverage the features of Perforce. We identify the NCSEAS project CIs and store them in Perforce repositories, allowing accessibility for the development team's use through views of the file system. We also store supporting configuration files such as build scripts and property files for various environments within Perforce. We understand the existing Nevada environment and the CA CSE solution that is being transferred to Nevada. This knowledge helps us work with DWSS to help procure the right type and number of Perforce licenses.

Following the completion of check-in, the code is promoted by the release management team through the environments from development to integration to system test to acceptance followed by training and eventually production.

Updates to Existing Requirements, Design, and Code

For updates to existing requirements, design, and build deliverables, Deloitte follows the change approval process where the change control board approves and prioritizes the request as discussed in Section VII: 5.11.7 Change Request Process. Upon the approval of the change request, Deloitte invokes the configuration management activities to address:

- ***Identifying CIs.*** ***We work with DWSS staff to identify any additional CIs, other than the CIs identified through an approved deliverable, that are required to be tracked***
- ***Monitoring access patterns of CIs.*** ***Our CM approach allows customized controlled access to CM tools based on user roles on the NCSEAS project. Some examples of situations leading to multiple levels of control include:***
  - ***Differences in the levels of controls needed for different users (e.g., Project Manager, Team Lead, Developer, and Tester)***
  - ***Differences in the levels of control needed at different times in the project lifecycle (e.g., tighter control for Production Release)***
  - ***Differences in the levels of control needed to satisfy privacy and security requirements for the CIs***

The criteria for selecting CIs at the appropriate levels include the following:

- ***Source code/data model that may be used by two or more groups or programs***
- ***Work products that change over time because of an error or change in requirements***
- ***Work products that are dependent on each other in such a way that a change in one mandates a change in others***
- ***Work products that are critical for the project and need multiple versions***

After the CIs are identified they follow the same configuration management process outlined in the section above.

5.11.2 Interface Changes

5.11 CONFIGURATION MANAGEMENT	
5.11.2	Control of interface changes;

The Interface Control Document (ICD) Provides Structured Methodology to Control Interface Changes

Once the initial ICD and Interface Design Descriptions (IDDs) have been approved and agreed upon by the interface partner, our configuration management approach for the NCSEAS project includes details of our methodology for controlling interface changes as part of a controlled CI. We understand that the NCSEAS solution requires multiple critical interfaces to different systems such as the federal Office of Child Support Enforcement and the Nevada IVA system, as discussed in Section V: 4.1 Vendor Response to System Requirements. Given the business significance of these data exchanges, controlling interface changes is a critical success factor for the NCSEAS project.

The Deloitte technical team works with DWSS and other agencies to finalize the ICD for designated interfaces. These interfaces are based on federal standards such as National Information Exchange Model (NIEM) and Extensible Markup Language (XML). Having a structured approach for managing interface changes is crucial because many changes may be occurring simultaneously.

As described above, ICD is managed from inception to execution in a very similar way to how changes for requirements, design, and code are managed. Controlling interface changes are critical for the NCSEAS project, as an issue created in one interface may lead to subsequent issues in multiple other systems that are within the scope of this project. The interface management process is designed to provide a method to formally document and track the exchange of information between project participants and to monitor the performance of the participants in making available the required information. Based on our experience in managing the CA CSE system and transferring the solution to Oregon, we have operated in this type of environment where the process of interface management involves:

- ***Identifying and recording an interface***

- ***Creating an interface agreement and relate to NIEM (as required) based upon ICD and managing changes to the agreement by modifying the ICD and IDDs***
- ***Agreeing/resolving conflict(s) between interfacing partners***
- ***Monitoring the status***
- ***Reporting the status***
- ***Closing the interface agreement***

A Collaborative Process that Facilitates Effective Interface Change Management

Effective exchange of information is crucial to the successful execution of the NCSEAS project where multiple interfaces become an integral part of the entire system. The processes for controlling interface changes allow early identification of critical interfaces through a structured process, leading to early definition of issues that may potentially impact cost or schedule.

Once identified, Deloitte works with other interface stakeholders (internal and external) to identify any impact and constantly monitor areas of criticality. The Deloitte team works with stakeholders to assess the impact of the change, define the scope of the change, timelines affected by the change, followed by prioritized implementation based upon direction from Deloitte and DWSS leadership.

The interface control process also encourages communication between stakeholders, providing each with an understanding of the constraints inherent in their respective data generation cycles. Clear documentation on decisions and areas that are impacted as a result of the review keeps communication open, activities and decisions transparent, and the project on track. Identifying specific data requirements and understanding the importance of each requirement leads to more effective cooperation and thus an improvement in execution performance. Deloitte proposes leveraging a similar process as described in Section VII: 5.11.7 Change Request Process regarding changes to interfaces with the exception that there can be slight changes such as input from external stakeholders and control based upon technical industry standards.

5.11.3 Traceability of Requirements, Design, and Code

5.11 CONFIGURATION MANAGEMENT	
5.11.3	Traceability of requirements, design and code;

Our EVD Methodology Provides Structure for Traceability

Properly performing the required planning, development, management, and traceability are critical to the success of any large implementation project. A missed requirement or false assumption can have impacts on whether the agency is able to achieve federal certification of the child support system. Effective requirements' planning activities are as much a business issue as a technology issue. That is why our approach combines equal parts business insight, technology know-how and our experience from our OR Origin project

where we have also successfully built and maintain traceability. Our methodology provides the flexibility to apply a wide range of tools and templates tailored to the particular demands of the NCSEAS project. Deloitte's configuration management approach traces requirements throughout design, develop and test sub-phases and provides DWSS with the following benefits:

- ***Use of Jama Contour to document requirements and traceability***
- ***Verify and validate system requirements***
- ***Improve the quality of the system by identifying requirements that are not addressed by CIs during design and code reviews, and by identifying extra CIs that are not required***
- ***Provide input to change requests and future project plans when missing requirements are identified***
- ***Provide a guide for integration and user acceptance test plans on what needs to be tested***

The Requirements Traceability Matrix Facilitates Effective Management of Traceability

The Requirements Traceability Matrix (RTM) deliverable serves as the repository for the requirements used to establish and manage traceability across the project life cycle. Deloitte emphasizes requirements definition, documentation, and validation early in the process, resulting in the team linking/mapping corresponding deliverables (such as system code, and test cases) with these requirements to create traceability from business process through testing. Based on our experience and approach we used on the OR Origin project we will also link and map to specific requirement types like RFP, SOW, Federal and State. This approach allows reviews to quickly find potential risk areas and resolve discrepancies. Moreover, agreed-upon business objectives and key stakeholder expectations are more likely to be met when traceability is established. RTM requirements for the NCSEAS project are traced and maintained through the phases of the project as a CI, including design, development, implementation, testing, operations and maintenance, and transition.

Deloitte's JRP and JAD sessions establish the detailed requirements and associated design deliverables. This includes items such as use cases, page descriptions and page mockups. We will leverage our approach and methodology from our OR Origin project to accelerate the process. As part of the EVD methodology, we use traceability to track each requirement to its corresponding designer documents, testing for both forward and backward traceability. This creates a series of links among the business, functional, and technical requirements to the corresponding design artifacts, development components, test plan, and test cases. Each phase of the SDLC builds on the artifacts generated from the previous phase to create a traceability hierarchy. This approach is designed to limit missed requirements and test cases.

As described in the following figure, the detailed requirements are mapped to one or more design artifacts, which in turn are mapped to one or more source code components and test cases. Recording these mappings in the RTM provides complete traceability from the requirements through test cases. The requirements traceability process is set out in the following figure.

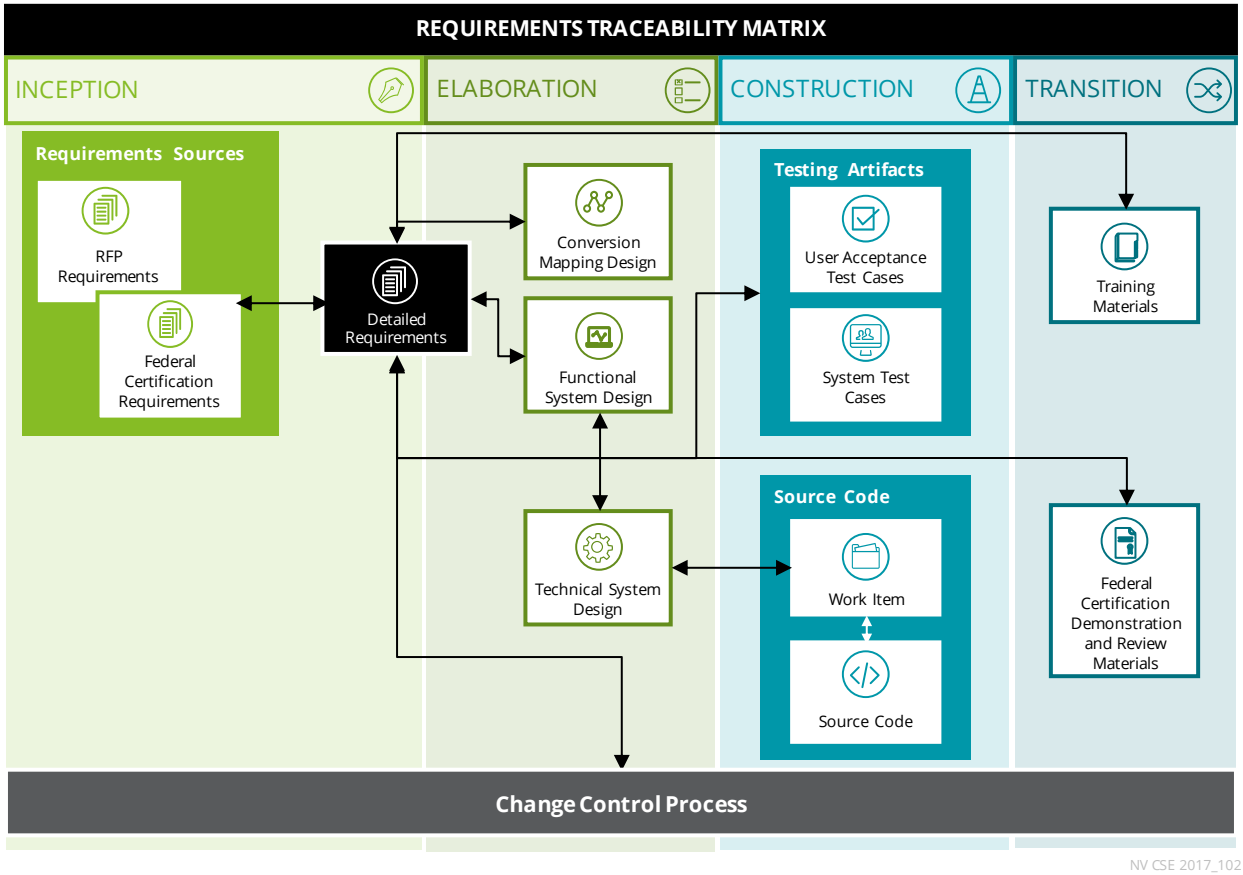

Figure 5-37. Managing traceability across phases with the RTM.

5.11.4 Tools to Control Versions and Builds

5.11 CONFIGURATION MANAGEMENT	
5.11.4	Tools to help control versions and builds;

Proposed Tools Based on Experience Working with DWSS on Other Nevada Projects

The Deloitte team recommends using the current software Perforce as the configuration management tool. The Perforce tool is used on the DWSS projects, therefore both Deloitte and DWSS have familiarity and understanding of the tool. Deloitte has extensive experience in implementing and using Perforce in complex projects similar to the NCSEAS project. We use Perforce to manage version control and builds for approximately 47,288 code components/files for the Nevada systems that we manage for DWSS. This has given us knowledge of the salient features and capabilities of the tool that helps with promoting effective version control and build processes for the NCSEAS system code components.

We use SharePoint for version control of artifacts such as requirements and design documents. Rigid and proper use of these tools as versions are created and maintained for multiple releases and help confirm that the requirements, design and code changes meet the objectives of DWSS during the initial implementation and during ongoing changes.

Deloitte also provides a release management plan to fit the needs of the NCSEAS project. The purpose of release management is to manage and facilitate the timely delivery of code to the appropriate teams and their environments throughout the development and testing life cycle. The Deloitte team is responsible for the planning and timely implementation of various activities related to release management, which are highlighted in the following figure.

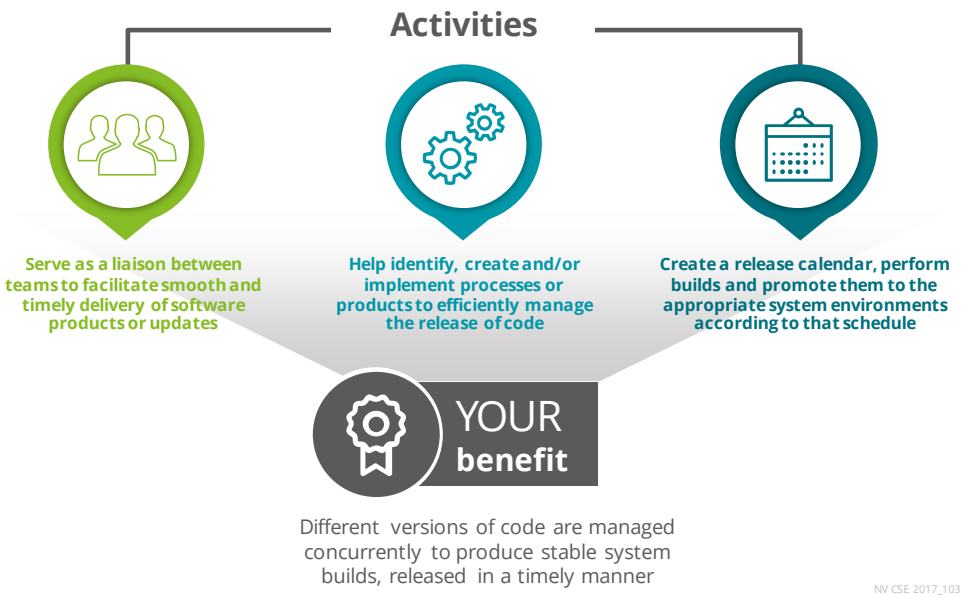

Figure 5-38. Release management activities.

Tools that Support a Structured and Regimented Process

The general life cycle of code progression through various environments is illustrated in the following figure. Code progression and release management together makes up the release management process that is followed by the development and release management teams.

Using this proven and structured release management process, we have successfully implemented approximately 64 Production deployments and large scale implementations such as SSBM and SNAP/TANF for Nevada DWSS systems in the past four years and have automated several deployment aspects. This enables our team to follow a repeatable, proven process that promotes efficiency and quality while minimizing risk and disruption to users.

Once the new build is ready to be promoted from the development environment, the source code is checked into Perforce. This allows the compilation of that code into a deployable build. This code is then loaded to the System Test environment. Once System Testing is complete, it moves onto the User Acceptance Test environment. A simple smoke test confirms major components and basic functionality are intact. If issues are found that warrant the code to be rolled back to the previous version, that process commences (and an additional smoke test is completed after the roll-back). However, if the initial smoke test reveals no issues, then testing may proceed. This smoke test process would apply to any environment that the build is promoted to validate a successful build process. After passing acceptance testing, the build is finally promoted from the Acceptance Test environment to the Training environment followed by deployment to the Production environment.

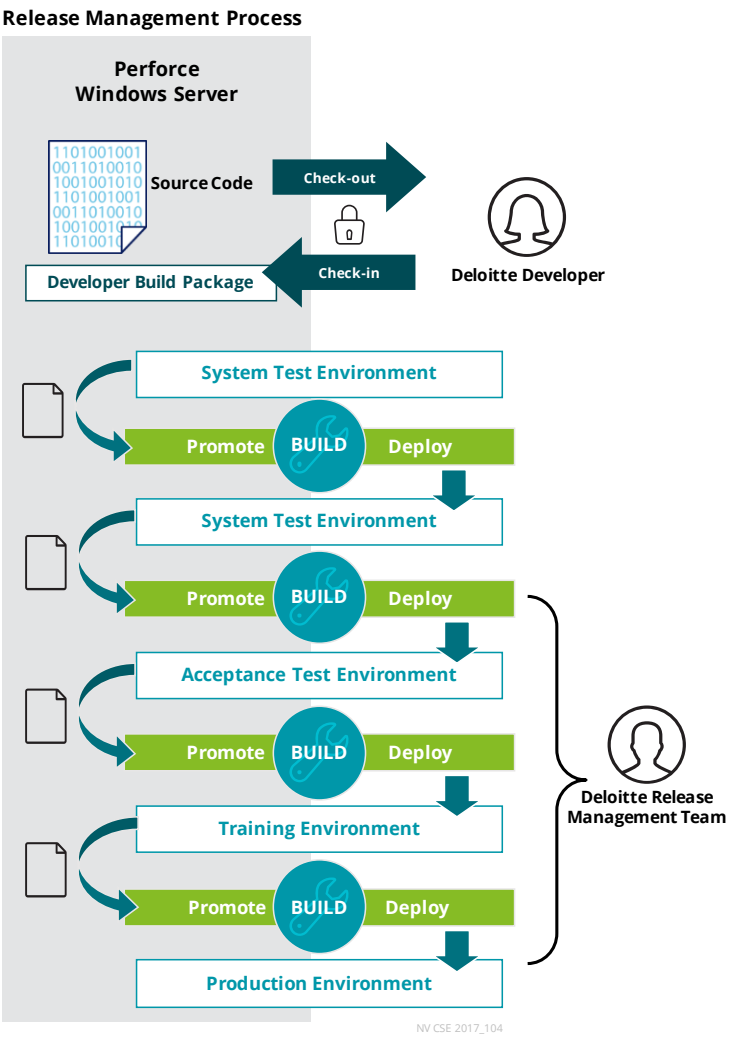

Figure 5-39. Release management process.

The development team schedules regular builds for each new code version being developed. The team that owns the target environment that the build is promoted into completes a smoke test to check the integrity of the environment after the build has been deployed, with a check point call set up to address any potential issues.

The discussion for defining the frequency of these builds is initially established during the development sub-phase, and is jointly decided on by the development and the testing teams for the builds going into the non-production environments, with the exception of the Acceptance Test environment. The schedule for builds going into the Production and Acceptance Test environments are developed with input from the appropriate DWSS staff to make go/no-go decisions. Each build is performed by the development team on the days specified in the build schedule.

5.11.5 Regression Testing

5.11 CONFIGURATION MANAGEMENT	
5.11.5	Parameters established for regression testing;

Regression Testing Methodology Focused on Optimal Quality

The objective of regression testing is to validate that the quality of the system has not regressed beyond previous benchmarks during the later builds or iterations. Any change to the existing system being tested may inadvertently introduce deficiencies in another related program. Regression deficiencies occur when software functionality that previously functioned no longer works or stopped working the way it should. A complex system like the NCSEAS solution must have a solid regression testing strategy to accommodate development. Because we use an iterative development approach in DWSS where modules are released as they are ready, comprehensive regression testing is essential to success. As each new module is released the regression suite is run to help confirm that the existing functionality is unaffected.

Included in regression testing are functionality tests performed periodically through the stages of development and testing, including continually through UAT, and up to code freeze, which is just prior to go-live. It involves a variety of approaches including "shakeout" testing of a newly configured environment, "smoke" testing a newly deployed build, and the ongoing execution of a core set of system tests. The core set of system tests provides broad coverage across heavily used functions to develop confidence that the code base remains stable even as changes/fixes to programs are introduced. Deficiencies discovered during regression testing are treated and tracked in the same manner as other identified deficiencies. Regression testing runs parallel with the other stages of testing, beginning with the unit and integration testing through system testing and UAT phases.

Selenium has been selected to support regression testing. Selenium automates testing with a variety of browsers across multiple platforms. The test team uses Selenium to record a series of events and check the resulting responses to ensure they are correct. The entire suite of tools results is a rich set of test functions, specifically geared to cover the requirement of web applications testing of all types. These operations are highly flexible, allowing various options to locate UI elements and compare expected test results against actual application behavior. One of Selenium's key feature is the support for execution of test scripts with multiple browser platforms. Selenium integrates with Jira and Jenkins to manage test defects.

Processes and Tools that Include Automation and Manual Steps when Needed

Regression tests are run both manually and with automation scripts. Manual testing is performed by the system test team against functions that require expert inspection of the results, such as security features. Automated testing provides broad coverage across the system's functions in a much shorter time frame than manual testing. Automated testing requires the recording and maintenance of a core set of scripts using our proposed testing tool, Selenium.

Data is set up to feed into the automated test run and defects are identified through the review of log files generated after each execution cycle. Our team has specific experience in the identification, development, and maintenance of a quality set of automated regression scripts. We leveraged an automated regression testing approach recently in Oregon with great success as the complexity of changes to the code base for enhancements required that core functions be continually tested. Automated testing frees up manual testing time to focus on the highest priority areas of testing.

Our SDLC methodology identifies items that should be regression tested. Deloitte makes use of the regression test scenario library from our CA CSE project for performing regression testing, if permitted by CA CSE. We continuously expand this library to include additional test scenarios as additional functionality is added to the system. With our experience at the OR Origin project and knowledge of CA CSE system we have formed an approach on creating new regression test scenarios. This helps us provide a well-tested product when it is eventually deployed and reduces the risk of operational glitches or failures in the live-world. To effectively perform regression testing when code changes are made, the project develops a plan for the execution of regression testing activities, as outlined in the following table.

Activity	*Description*
Developing regression testing scenarios	***Regression testing scenarios are created based upon critical functionality to end-users and validation of system to system functionality.***
Conducting and documenting regression testing	***Regression testing is conducted in each environment following the development and deployment of a build to confirm the quality and integrity of the build.***
Reviewing test results	***Results of the regression testing are discussed among Deloitte and DWSS team members to determine if any issues encountered should result in rejecting the build and not continuing deployment to the Acceptance Test environment.***
Taking corrective actions	***If issues arise, whether critical or not, they are logged in the proposed defect tracking system, Bugzilla, and are prioritized for delivery into the next build.***
Auditing testing activities	***Deloitte monitors the regression testing activities and continuously revises the regression testing scripts as critical functionality is added to the system.***

Table 5-44. Regression testing activities

Incrementally customizing the transfer of the CA CSE solution modules through design and development emphasizes the importance of regression testing the end to end solution while new modules are being integrated. The regression suite is run after each build and could also be executed following architecture/infrastructure changes or other considerable changes to interfaces and other critical components.

Continuous Integration

We also utilize continuous integration as a software development best practice to integrate new or changed code with the existing code repository. This process occurs when code is delivered to the development stream so developers can review and correct build errors. Continuous integration provides:

- ***Improved feedback*. Continuous integration allows for constant and demonstrable feedback.**
- ***Improved bug detection*. Continuous integration enables developers to detect and remove compilation errors immediately after they have delivered the code to the development stream and requested a build.**
- ***Improved collaboration*. In a continuous integration setup, team members can safely make changes, integrate them with the development stream, and know instantly if the code change conflicts with changes made by other developers.**
- ***Faster deployments*. Continuous integration helps reduce the number of build errors that a Release Manager may encounter while performing a build in a higher stream.**

A build and a set of unit tests verify each cycle of continuous integration. This helps to detect and eliminate integration errors as early in the release management process as possible. The continuous integration process is facilitated by a tool called Jenkins and consists of six steps:

1. ***Developers deliver changes from their workspace repository to the development stream.***
2. ***Jenkins has its own repository workspace and fetches changes from the development stream in Perforce to refresh its build repository workspace, then copies the code from its repository workspace and loads it to the local directory on the build server.***
3. ***Jenkins performs the build on its local repository.***
4. ***Jenkins executes unit-testing steps with the help of Ant scripts. Ant scripts are used to facilitate the execution of JUnit tests in the continuous integration process.***
5. ***Jenkins generates reports indicating if a build failed or succeeded. These reports contain the list of work items whose associated change sets were compiled in this instance of the continuous integration build.***
6. ***Jenkins publishes these reports to the development track leads and developers notifying them of the build's success or failure.***

The following figure illustrates the continuous integration process:

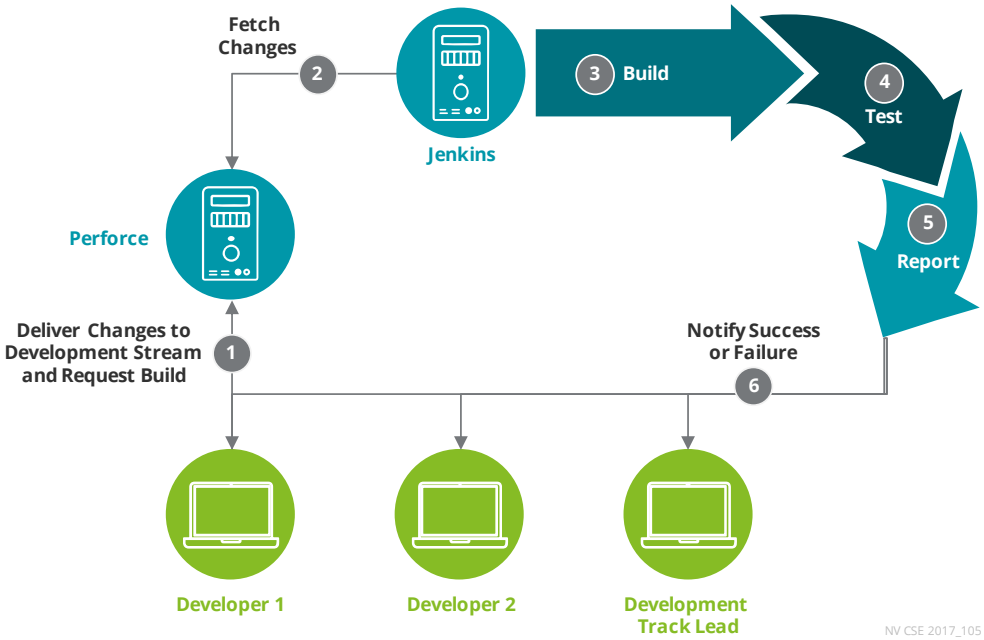

Figure 5-40. Continuous integration process.

5.11.6 Tools, Change Log, and Modules

5.11 CONFIGURATION MANAGEMENT	
5.11.6	Baselines established for tools, change log and modules;

The Configuration Management Methodology Establishes Baseline for Tools, Change Log, And Modules

The configuration management methodology establishes a baseline for project artifacts such as tools, change log, and modules. The baseline is updated with the details of CIs that have been reviewed and approved. Once the CI is added into the baseline it can only be changed through the change control process.

Maintaining consistent baseline versions is particularly important to any significant development such as the NCSEAS project due to the voluminous work product updates and changes through the various phases. The configuration management tool, Perforce, enforces check-in/check-out procedures to control access to the items they house, preventing parallel updates. Perforce provides one secure repository for the code components. Perforce automatically stores the code as a new version. Without this capability and enforcement, multiple developers or users may make changes simultaneously without properly maintaining a "gold" copy of each CI.

The artifacts managed and maintained as part of configuration management are documented in the following table.

Item	*Description*	*Configuration management*
Application source code	***Source code***	***Perforce***
Infrastructure	***Infrastructure configuration***	***Perforce***
Software	***Changes to software requirements***	***Perforce***
Entry/exit criteria	***Expected input and output definition***	***SharePoint***
Written deliverables	***Deliverables***	***SharePoint***
Project plans	***Documented plans and processes***	***SharePoint***
Scope documents (statement of work)	***Statement of work (SOW)***	***SharePoint***
Contractual documents	***Contractual documents***	***SharePoint***

Table 5-45. Artifacts managed in Perforce.

The baseline process of the individual CIs allows for backup or archival. The process is limited to the restoration of individual CIs or configuration directories which are backed up. This includes identification of the CIs which are to be restored, request to perform restoration, actual restoration of the files or directories, and communicating to the relevant stakeholder(s) about the successful restoration.

5.11.7 Change Request Process

5.11 CONFIGURATION MANAGEMENT	
5.11.7	Documentation of the change request process including check in/out, review and regular testing;

The Configuration Management Approach Guides the Change Request Process

The configuration management approach lays out a disciplined approach to source code management, and is based on our established experience in managing systems for DWSS. Our plan institutes the proper "check-in"/"checkout" procedures, approvals, branching procedures, and versioning requirements. This benefits DWSS by lowering the risk of code overlays and ensuing application problems. This is critical for any application with a large number of code components, and a distributed code base. Deloitte provides DWSS staff with appropriate access to the version control repository controlled by Deloitte. By having the inquiry access, DWSS staff are able to access deliverables and review/verify code if needed.

Deloitte uses a change request process that applies to the phases and aspects of the NCSEAS project. Change requests are defined as a deviation from the agreed upon project scope as outlined in the contract. Scope change control is intended to assist the NCSEAS team in promptly identifying any change requests that may improve the project results, minimize risk, or avoid problems. Change requests may be submitted from any level of stakeholder, whether it is an unplanned enhancement to hardware or software, or a functionality change expressed at any time during the project. Any change request that affects the project's timelines, regardless of the type and nature of the change, follows the standard change control process.

The Change Request Process and Tools Align with Current DWSS Business Processes

As a result of our previous successful experience working with DWSS, Deloitte plans to follow a similar, yet enhanced, change request process for the NCSEAS project to reduce confusion and allow for a seamless transition into the change request process by the DWSS staff. The following figure highlights the change request process proposed for the NCSEAS project. Please note that the NCSEAS Team in the following diagram includes State staff, Deloitte, and the PMO, and QA vendors.

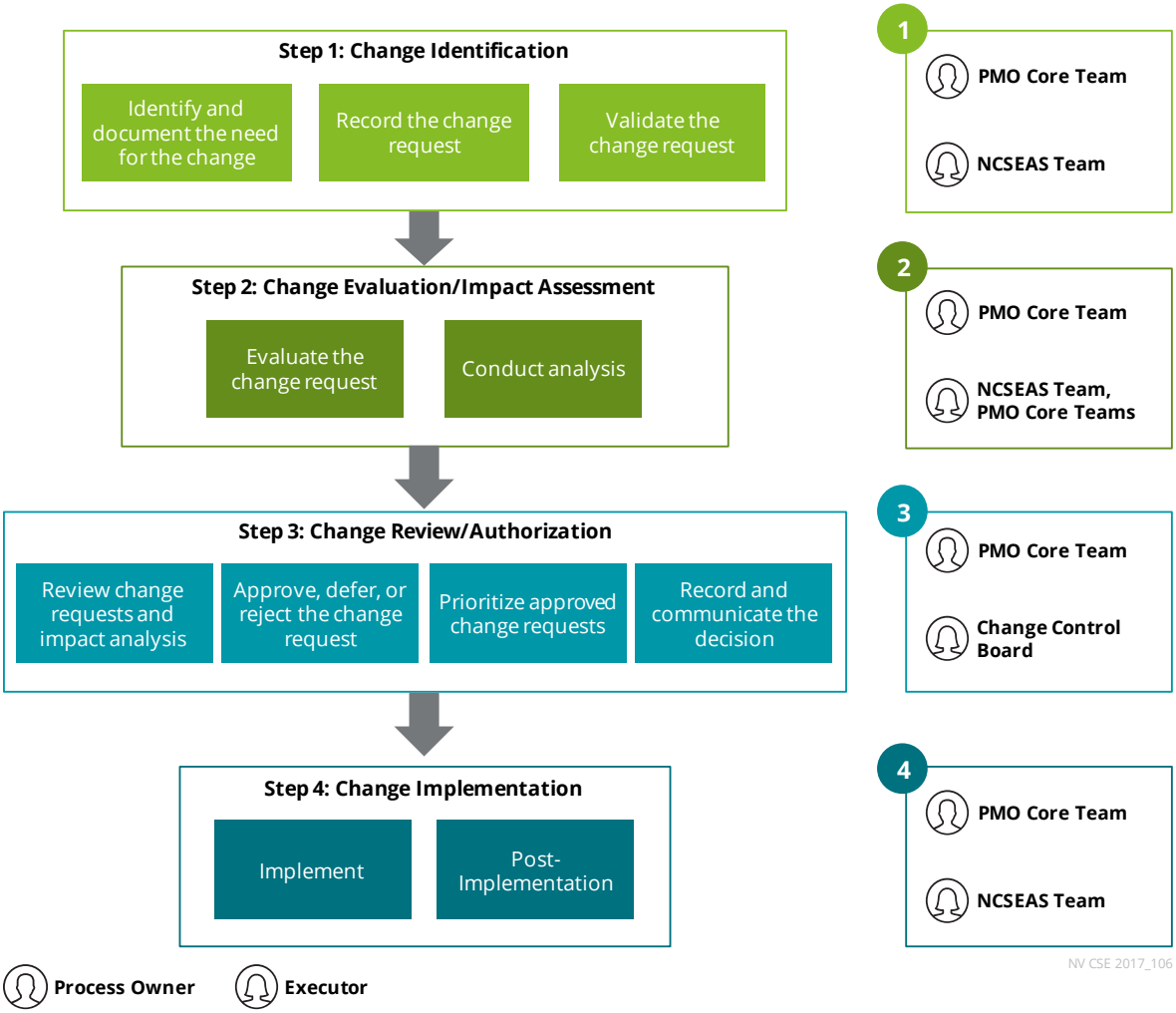

Figure 5-41. Change request process.

The processes discussed above must be rigidly followed, especially if any change requests are out of the scope but are required to successfully complete the project and maintain compliance with upcoming federal mandates. When evaluating the change request in step #2 of the figure above, the Deloitte team does an impact analysis of change request so that the change control board can make accurate, effective decisions regarding change requests that must be completed.

To enhance the current change request management process, we suggest using Deloitte's Project Management Center (PMC) tool for identifying, analyzing, tracking, and reporting of change requests. However we are open to using excel or any other process that DWSS currently has. PMC functionality allows for automated change request management including:

- ***Workflow-enabled change request process, including the change control board approval step***
- ***Change Request Dashboard for status reporting***

The following figure shows an example of the Change Request dashboard available through PMC. By default the Change Request dashboard includes: a change activity summary, an open change summary, a change priority by status matrix, a change aging by priority graph, a change by status graph, a changes by priority graph, a change request financial summary, a past due changes summary, and a change request details summary. The Change Request dashboard can be customized by users to include additional change request details.

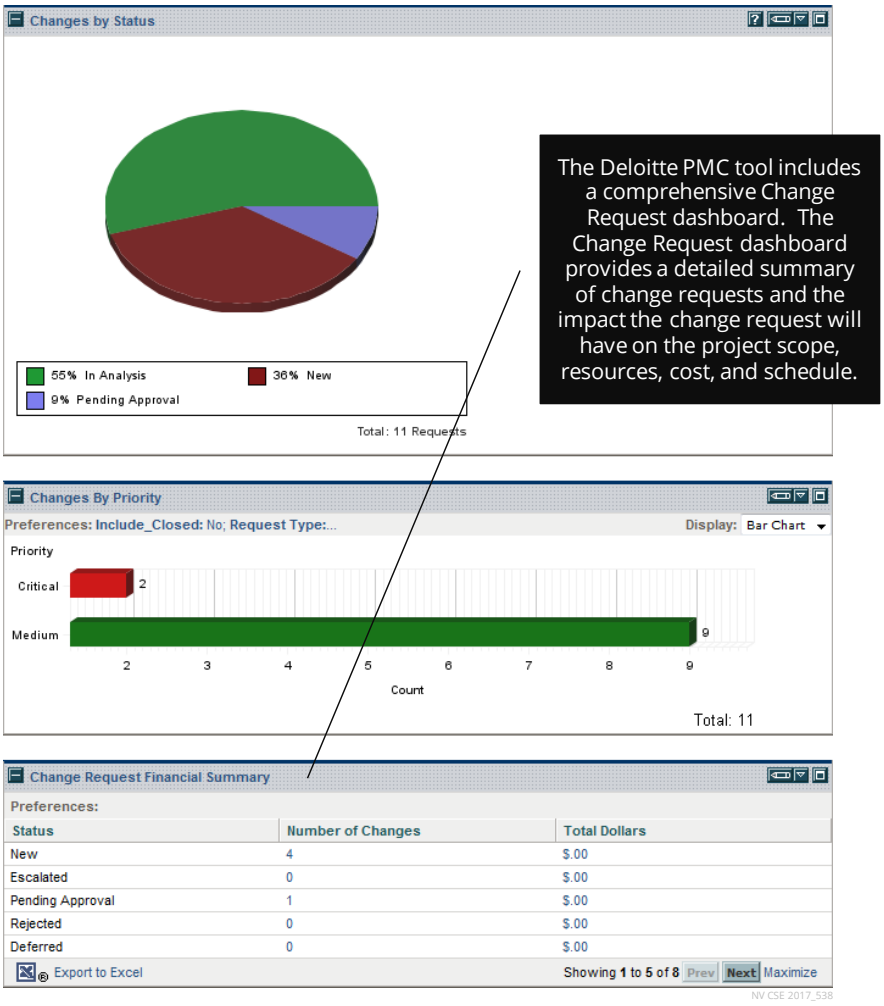

Figure 5-42. PMC change request dashboard.

Automatic reports generated through PMC include open change summary, change request by status, change request priority by status matrix, change request by priority, change request detail, change request by owner and change request by date. These reports are generated from PMC and monitored by the Deloitte management team. The DWSS Management team is also able to retrieve reports on an ad-hoc basis. The following table describes the change order request reports at a high-level.

Report	*Description*
Open change requests	***Open change requests and the detailed submission information regarding the request, including the requestor's impact analysis.***
Closed change requests	***Closed changed requests and the detailed information regarding how the request was addressed (accept, defer, deny).***
Aging change requests	***Change requests that have not been addressed and have been in the queue beyond the specified time period.***
Escalated change requests	***Change requests that are critical in nature and require the engagement of key stakeholders to proceed.***

Table 5-46. Change request reports.

Collaborative and effective change request processes are critical to the success of any large software implementation. The Deloitte change request philosophy provides structured change control processes that proactively and effectively manage changes throughout the NCSEAS project life cycle. DWSS ultimately benefits by better transparency in the scope of the NCSEAS project and better ability to prevent unnecessary changes that impact the project's timeline or budget.

5.11.8 Change Control Board and Change Proposal Process

5.11 CONFIGURATION MANAGEMENT

5.11.8 Documentation of the change control board and change proposal process; and

The Configuration Management Approach Documents the Change Control Board and Change Proposal Process

The purpose of the Change Control Board (CCB), in the context of software development and maintenance, is to prioritize and select issues to be resolved during the NCSEAS project. Deloitte's Configuration Management approach involves documenting the change control board and process during the Inception phase of the project. The approach is reviewed and finalized by DWSS.

The Deloitte team aligns any change control processes with DWSS' existing processes. We work with DWSS to integrate our project management with DWSS and PM Contractor, so that the project staff has a collaborative system for the change proposal process. We have done this very effectively in Oregon Origin.

DWSS may identify a need to modify or enhance the NCSEAS requirements or design, due to new regulations, policy, or other business or technical needs. These needs are submitted as requests to the CCB, which meets at regular intervals to be decided by Deloitte, PMO contractor and DWSS. CCB includes Deloitte representation. The Deloitte team reviews requests submitted by DWSS to provide input on design and implementation options and

estimated effort. The Deloitte team conducts due diligence in advance of the meetings, so they are prepared to discuss the history behind the request, any relevant requirements that are involved, and an estimate for effort and impacts to other teams and components. The Deloitte team then implements approved changes per the timeline agreed upon by the CCB.

Deloitte and DWSS will continue to build on existing relationships to enhance a transparent and efficient approach to change control. Requirements for the NCSEAS project are closely monitored and any further enhancements to the NCSEAS requirements or design follow the change proposal process. This process includes DWSS Change Control Board approval for any system changes. Each system enhancement and bug fix is tracked separately using standard change log and change request forms. Deloitte regularly provides a clear view to the CCB of the outstanding system issues such that they can be prioritized.

5.11.9 Change Log

5.11 CONFIGURATION MANAGEMENT	
5.11.9	Change log that tracks open/closed change requests.

Methodology, Process, and Tools Track Change Requests from Identification to Implementation

Deloitte uses a configuration management approach and tools based on an understanding of current DWSS standards to track change requests for the NCSEAS project. We use a change log and change request forms for tracking changes that are logged into SharePoint as discussed in the 5.11.7 Change Request Process.

From the initial change request or defect identification to production release, both DWSS and Deloitte are able to use the change log and change request forms logged into the existing configuration management tool SharePoint. We are then able to effectively manage and monitor the progress of the change request. These tools provide the ability for ongoing notes, file attachments, assignment and re-assignment of change requests, estimated and actual completion/resolution dates, detailed control reports, and other features. These features help Deloitte development leads manage changes to the NCSEAS project, and provide a clear view to DWSS staff of how many change requests are outstanding, their status, and resolution timing.

During acceptance test, DWSS staff use the change log and change request forms to approve modified code and give their overall approval for Production release.

5.11.10 Our Distinguishing Factors

Deloitte is uniquely positioned to provide the skills, expertise, and experience to implement a modern Configuration Management solution for Nevada. Our approach leverages Nevada skills and experience with AIX, Perforce software tools, and other Nevada standards as well as leading Configuration Management tools that Deloitte has used successfully on multiple projects. In addition, Deloitte has experience implementing CA CSE on the AIX platform in California and the Windows Platform in Oregon, giving the Nevada project the option to select the best platform for each component of the system. From our experience in

California and Oregon, Deloitte knows what the State of California will provide to Nevada for the transfer solution and, more importantly, we understand what they may not be able to provide due to security and cleansing issues. For example, the Oregon team had difficulty getting documentation, reference data, build scripts, deployment scripts, and other artifacts from California due to the time required to cleanse this information, so most of this had to be re-created or reverse engineered for the Oregon project. The lessons learned on the Oregon Transfer Solution will save a significant amount of time on the NCSEAS project.

5.12 Peer Review Management

5.12 PEER REVIEW MANAGEMENT

Vendors shall describe the methodology, processes and tools utilized for:

Deloitte's Methodology Drives Peer Reviews through the SDLC Phases

The Deloitte team conducts peer reviews through the project sub-phases including the Design, Development and Testing phases. Peer review management is an important piece of the approach to application development and testing. The peer review process is implemented to enhance quality in design, configuration, and any custom coding required for the application being transferred from California. This provides for higher quality application builds which, in turn, provides for a smoother end-to-end testing effort and project delivery.

SECTION HIGHLIGHTS

Our team:

- ***Utilizes effective peer review processes to deliver high quality code, artifacts, and test cases***
- ***Adheres to Deloitte's EVD methodology that has been proven in other states, including California and Oregon***
- ***Uses robust tools to validate quality***

The peer review process consists of planning, execution, and reporting. Planning includes activities such as determining what artifacts and code will be reviewed, how reviews will be performed, and determining which people will be involved in each review. After planning the peer review process, execution begins and the peer review process is put in motion. During execution we also track metrics for the reporting phase. During this reporting phase we compare our plan to the actual results to determine how to improve the peer review process. For example, Deloitte compiles statistics and documents errors within the application build for traceability during the peer review process. These statistics help us continuously improve the quality of the code. The following sections discuss our approach to peer review in more detail.

Deloitte's processes and tools promote a high quality transfer solution. Deloitte's peer review process has been implemented on other projects in your state and helped contribute to swift, high quality implementations. Our experienced CSE staff have experience with conducting peer reviews for a transfer solution from a fit gap perspective. Our functional specialists optimize time by reviewing the impacted components from the CA CSE solution being customized to meet Nevada's requirements. The specifics of Deloitte's peer review management methodologies and processes are covered in Section VII: 5.12.1 Peer Reviews. The tools used for peer review management are covered in Section VII: 5.12.1 Peer Reviews, Section VII: 5.12.3 Procedures and Checklists Utilized, and Section VII: 5.12.5 Tracking Errors to Closure.

5.12.1 Peer Reviews for Design, Code, and Test Cases

5.12 PEER REVIEW MANAGEMENT	
5.12.1	Peer reviews conducted for design, code and test cases;

Deloitte's Methodology and Processes Includes Multiple Teams and Levels of Peer Reviews Supported by Robust Tools

The methodologies and processes utilized for conducting peer reviews of design, code and test cases include multiple teams of reviewers leveraging a set of checks-and-balances, code quality analysis tools (HP Fortify Static Code Analyzer and SonarQube), well-defined coding standards, a strict code review process, and a comprehensive error tracking system.

Design Review

The Deloitte team creates the required artifacts, tracking and monitoring the progress against the Project Schedule. Artifacts are built based on decisions made during meetings. During artifact development, our team reviews meeting minutes to verify that decisions are captured in the artifacts. The team relies heavily on the Deliverable Expectation Document (DED) and the EVD method to update the artifacts being transferred from the CA CSE solution or create new artifacts that meet the DWSS's requirements, as well as PMBOK and CMMI standards.

The following figure describes our design and design artifact review process based on our thorough fit gap analysis with the CA CSE solution. When draft versions are available, our team completes at least four internal reviews before sending to DWSS for formal review.

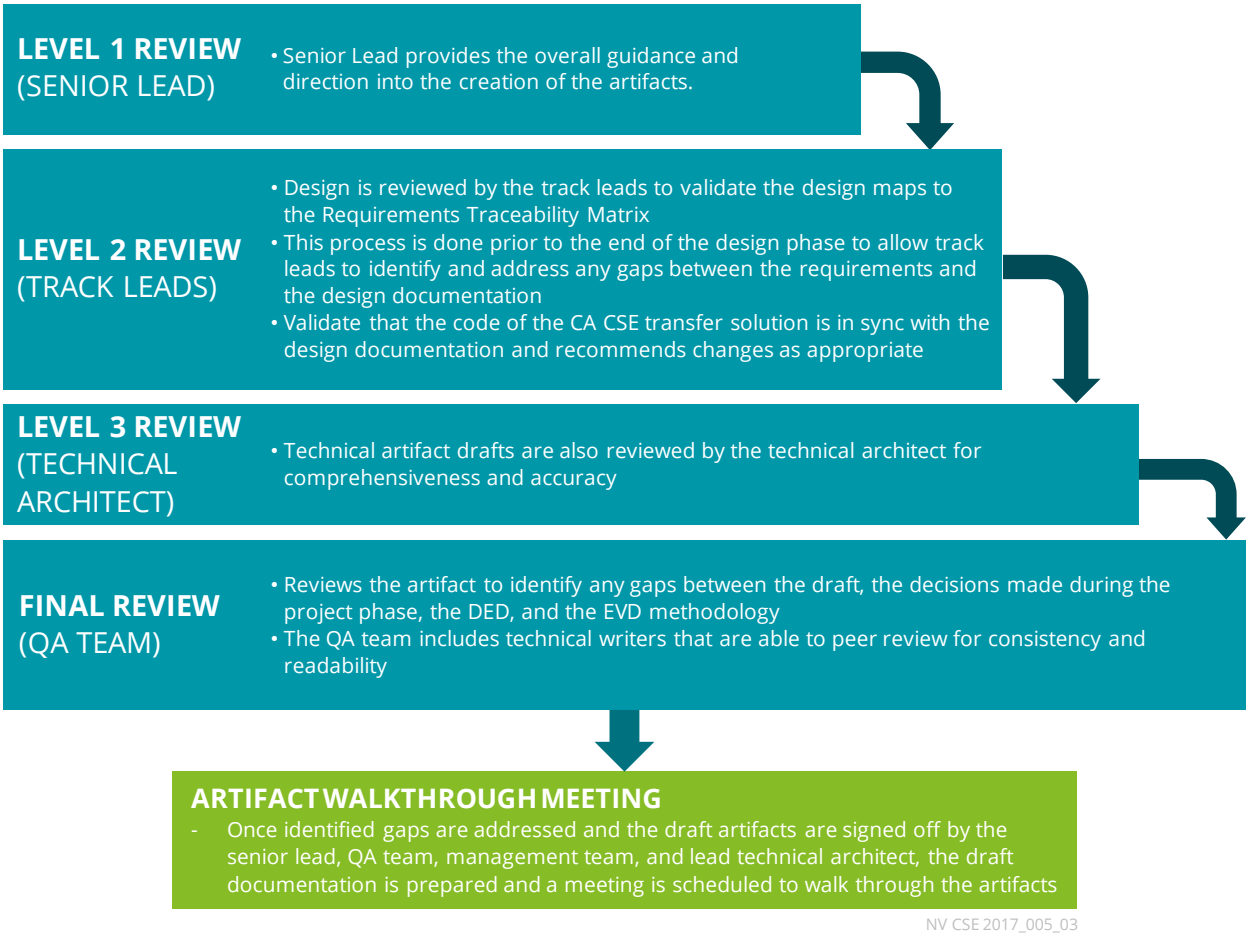

Figure 5-43. Design and Design Artifacts Review Process.

Code Review

Unit testing and code peer reviews are performed to confirm that defined quality standards are met by the components of the NCSEAS solution. Deloitte provides technical architects to peer review the code, confirming that these key components are sound and helping provide a baseline for the ultimate solution.

The following figure describes our code review process. As the each step of the review process is completed, the developers make the required updates based on the report or reviewer comments and closes the action items or issue log.

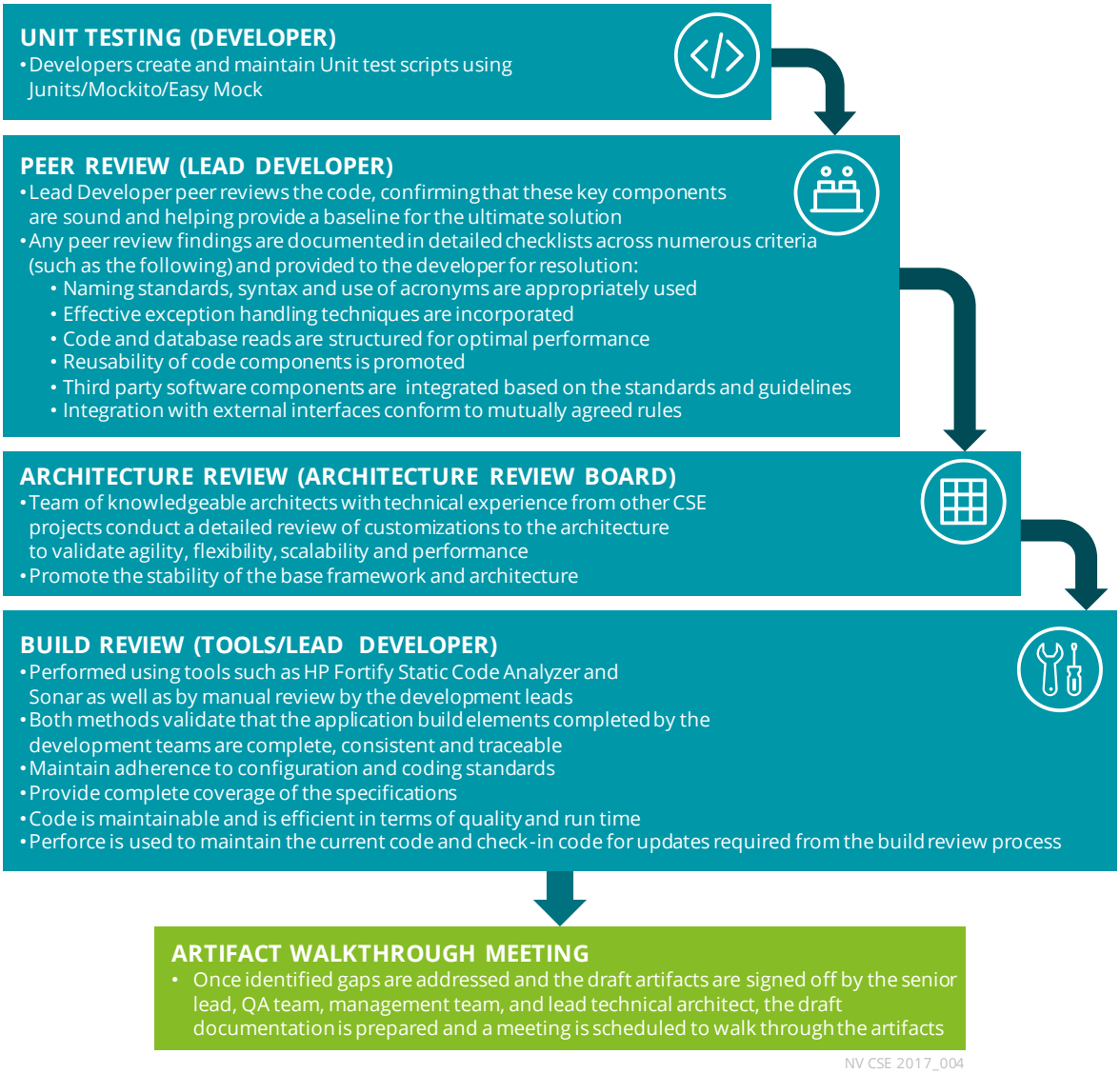

Figure 5-44. Code Review Process.

Build reviews are also a focal point of Deloitte's peer review process. The detailed build review procedure established by the EVD methodology is elaborated in Section VII: 5.12.3 Procedures and Checklists Utilized.

Test Case Review

Test cases are reviewed by the testing leads to validate that the design artifacts are captured in the test cases. Our testing leads have good knowledge of the base repository of test cases from the CA CSE solution that serves as an accelerator for test cases for the NCSEAS system. Furthermore, the test cases are also traced back to the Requirements Traceability Matrix to make sure that each requirement is tested. This provides another opportunity to confirm that the requirements are met in the design, build, and test cases across the project.

5.12.2 Types of People Involved

5.12 PEER REVIEW MANAGEMENT	
5.12.2	Number of types of people normally involved in peer reviews;

Deloitte's Methodology and Process Integrates Functional, Technical and QA Teams for Peer Reviews

The following figure lists the five main groups of team members typically involved in peer reviews. Each set of team members have unique areas of expertise, and operate both together and apart by leveraging a set of checks and balances:

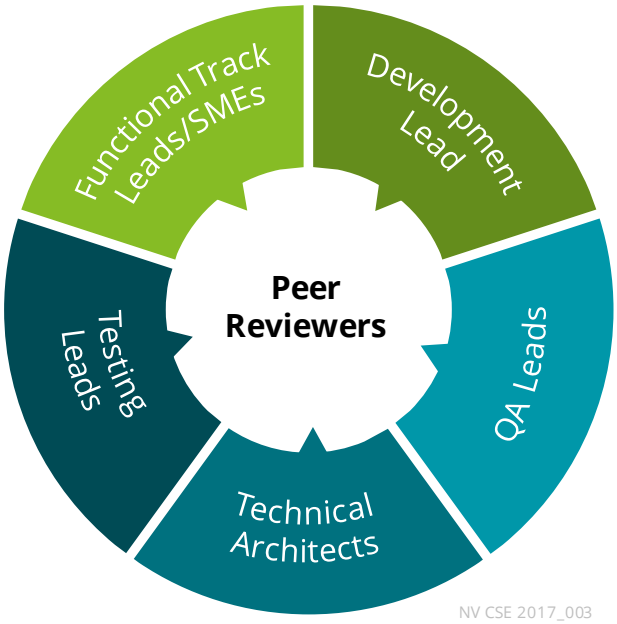

Figure 5-45. Peer Reviewers.

- ***<u>Functional Leads/Subject Matter Experts (SMEs)</u>. Validate that requirements and change requests are properly translated into functional design documents.***
- ***<u>Development Leads</u>. Conduct build reviews to validate that the implementation adheres to the functional specifications and follows defined coding standards.***
- ***<u>Testing Leads</u>. Review the test strategies and test case coverage to validate that the aspects of the code are tested.***
- ***<u>QA Leads</u>. Review the functional design documents, test strategies, and test case coverage to validate that they adhere to project documentation standards.***

One person from each category will be involved in peer reviews. However, additional team members may be added to each peer review based on the staff load demands of the project. It is common for this number to vary as the staff load fluctuates to meet the needs of the current project phase.

Throughout the project lifecycle, the functional, technical and testing teams collaborate on the artifacts produced to provide a common understanding of the design. Once a common understanding is achieved, the groups continue to support one another as the requirements and design artifacts are translated into a functional product that requires thorough testing with the goal of producing a top-quality application.

5.12.3 Procedures and Checklists

5.12 PEER REVIEW MANAGEMENT	
5.12.3	Types of procedures and checklists utilized;

Deloitte Utilizes Proven Procedures, Checklists and Tools

Based on our experience with implementation of large scale CSE systems of similar size as NCSEAS in other states, Deloitte has developed and utilized numerous procedures and checklists for peer reviews. These artifacts provide our experienced peer reviewers with the appropriate tools to conduct a high quality review of design artifacts, code migrations and builds, and test cases. We have also tailored these procedures and checklists specifically for transfer solutions to optimize the team's time spent on performing a qualitative peer review. An example of Deloitte's build review procedure is highlighted and described in the following figure.

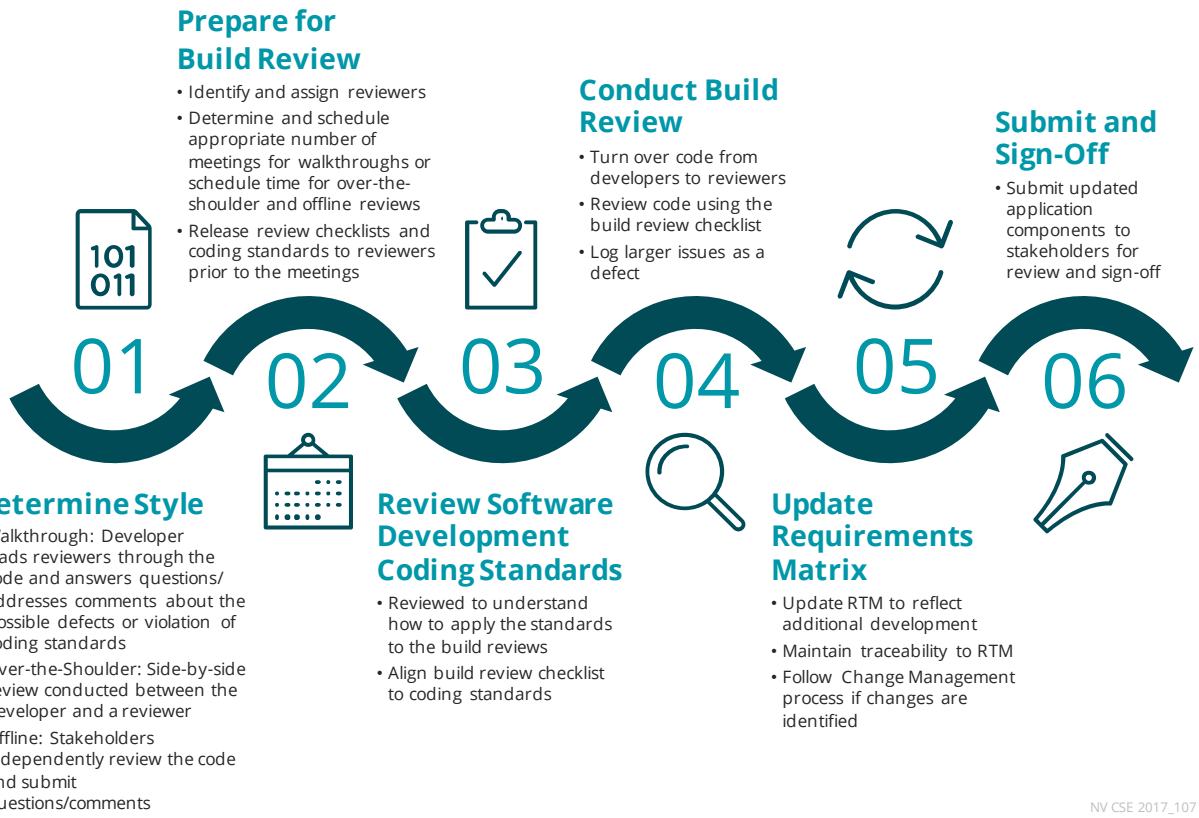

Figure 5-46. Build Review Process.

The checklists and reports used in the build review process provide direction to the reviewers to understand what they should be reviewing. In addition, the developers use these checklists and reports as a basis during their initial coding to mitigate issues during the build review process. At a minimum, the code is reviewed for:

- ***Adherence to programming standards***
- ***Adherence to our NCSEAS User Interface standards and ADA compliance***
- ***Adherence to NCSEAS custom Architecture and Framework standards***
- ***Complete coverage of the specifications of the unit process***
- ***Maintainability of unit process code***
- ***Removal of redundant code, if any***
- ***Run time efficiency***
- ***Database optimization and compatibility***
- ***Security implications***

The following figures show sample checklist templates to conduct peer code reviews and unit test reviews. These templates have been customized to include items that are not just for Java/JEE programming best practices but also to CA CSE custom framework, and configurations. New standards can be added and existing CA CSE standards could be refined and modified for NCSEAS.

Code Review Checklist			
Project Name:	<Enter the project name>	**Reviewer:**	<Enter the reviewer's name>
Project ID:	<Enter the project ID>	**Date:**	<Enter date, dd-mmm-yyyy>
Artifact Title:	<Enter the artifact title>	**Version:**	<Enter the version number>

General Notes:
This checklist is aligned with the guidelines documented within the Java Coding Guidelines, Framework and Configuration Standards document, and is used during the review process to validate adherence.

#	Item/Description	Status	Comments	Standard/ Guideline
	File Organization			
1	Each Java source file contains at most one public class or interface.	Incomplete		Guideline
x	...			
	Class & Interface Declaration			
1	Static attributes, also known as class attributes, are given valid values at the time of declaration.	Incomplete		Guideline
x	...	Incomplete		Guideline
	Naming Convention			
1	The prefix of a unique package name is always written in all-lowercase ASCII letters and should be one of the top-level domain names, currently com, edu, gov, mil,	Incomplete		Guideline
x	Interface names are capitalized like class names.	Incomplete		Guideline
	Code Syntax			
1	Tabs are used as the unit of indentation. Tab size is set to 4.	Incomplete		Guideline
x	Lines longer than 100 characters are avoided; Note: Examples for use in documentation should have a shorter line length - generally no more than 70 characters.	Incomplete		Guideline
	Comment			
1	Java programs have two kinds of comments: documentation comments and implementation comments.	Incomplete		Guideline
x	...	Incomplete		Guideline
	Comment – Block Comment			
1	Block comments are used for the Copyright Header, File Header, Class / Interface implementation comment	Incomplete		Guideline
x	...	Incomplete		Guideline
	Comment – Singe-Line or Trailing Comment			
1	Short comments appear on a two lines indented to the level of the code that follows, otherwise, if a comment cannot be written in a two lines, it should follow the block comment format.	Incomplete		Guideline
x	...	Incomplete		Guideline
	Comment – End-of-Line Comment			
1	End-Of-Line comments are not used on consecutive multiple lines for text comments	Incomplete		Guideline
x	...	Incomplete		Guideline
	Statements			
1	Each line contains at most one statement.	Incomplete		Guideline
x	The enclosed statements are indented one more level than the compound statement.	Incomplete		Guideline
	Miscellaneous Practices			
1	Class names are used instead of using an object to access a class (static) variable or method.	Incomplete		Guideline
x	...	Incomplete		Guideline
	User Interface Framework Standards			
1	Are all the buttons on the Page aligned to the right bottom corner of the screen?	Incomplete		Guideline
x	...	Incomplete		Guideline
	Batch Framework Standards			
1	Is the Cleanup method in the batch job closing all the database connections?	Incomplete		Guideline
x	...	Incomplete		Guideline
	Reference Configuration Standards			
1	Is the Code Category Configured have the Sort Order values listed for each Code configured?	Incomplete		Guideline
x	....	Incomplete		Guideline

Figure 5-47. Sample Code Review Checklist.

Unit Test Checklist			
Project Name:	<Enter the project name>	**Reviewer:**	<Enter the reviewer's name>
Project ID:	<Enter the project ID>	**Date:**	<Enter date, dd-mmm-yyyy>
Artifact Title:	<Enter the artifact title>	**Version:**	<Enter the version number>

General Notes:
This checklist provides coding standards and guidelines which can be used during development, code review and unit testing to make sure that the developed code follows the standards and guidelines. Add additional checklist items as appropriate for your project

#	Check Condition	Dev Owner Review	Peer Code Review	Peer Code Review Remarks
	Web Page Interface			
1	Is the data properly displayed on the page			
2	Are all Command Button tested and functioning properly?			
3	Does the general appearance of the page conform to standards and guidelines			
4	Do all hyperlinks function properly?			
5	Does the navigation to/from the screen functional properly?			
6	Is security enforced?			
x	...			
	Business Rule			
1	Are business rules enforced?			
2	Data Base Calls function properly (Create, Read, Update, Delete)			
x	...			
	Business Objects, EBJ's			
1	Are business rules enforced?			
2	Do all data validations function properly?			
3	Have all methods been tested to verify proper components/class functionality			
4	Does the database should rollbacks when exceptions occur?			
x	...			
	Batch Processes			
1	Are business rules enforced properly?			
2	Does the batch produce a standardized logging file?			
3	Did you verify that the Batch does not require interactive mode?			
4	Does the Batch shut down properly after termination?			
x	...			

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Figure 5-48. Sample Unit Test Review Checklist.

Peer code reviews and unit test reviews help confirm that development for each component meets the defined quality standards. Thorough feedback helps each member of the development team create high quality code that runs efficiently and securely. It also reduces the amount of redundant code. An example of a peer review feedback form is shown in the following graphic.

NCSEAS Development Phase Peer Review

Instructions: *All sections below are to be completed by the reviewer. Feedback will be provided to the code originator. Comments will be incorporated into the code, as applicable.*

General Overview

Code Creator: **John Smith**
Reviewer: **Jane Smith**
Date of Review: **10/20/2015**

Technical Overview

Tasks Involved: Intake Screen
.ASPX,.ASCX Reviewed: intake.ascx

Location in TFS: $/Nevada/NCSEAS/Intake
Code Version # 1.0.0.15

Description/Purpose: Modifications from existing user controls and pages for intake screens to initiate case creation.

List of suggested changes and proposed modifications

Suggested Change	Description of Implementation
Code change	Objects needs to be destroyed explicitly after the usage from the methods and few classes needs to be modified with this change
Comments	Provide more detailed comments in the code for ease of maintenance

General Code Review Comments/Feedback:
Changes were made to destroy the objects and implement more comments. Please review.

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Figure 5-49. Code Peer Review Feedback Form.

In addition to peer code reviews, the Deloitte team also performs rigorous design reviews for the design artifacts. Peer design reviews help confirm the creation of detailed, consistent, and high quality artifacts. After peer design reviews are completed, the design artifacts undergo quality assurance (QA) against an artifact Style Guide. An example of a QA artifact Style Guide is shown in the following figure.

Nevada Style Guide	
Watermark	• Use a DRAFT watermark on all DED's and Deliverables. DWSS will remove the watermark when the document is approved and published as a PDF.
Title	• Does it match the SOW for the Deliverable?
Due Date, Submission Date, Version Number, Revision History	• Does it match the due date identified in the work plan? • The revision history and version date should be in the date it is submitted to DWSS. • For a DED – for the shell Deliverable, the version number and date, and the revision history stay blank – revise only the date and revision history for the DED itself.
Table of Contents	• TOC is needed for any document over 3 pages in length. • Did the TOC generate correctly? Section Headings are correct, are correct font size, justified correctly to the margin, page numbers are correct?
Description of Deliverable	• Does the description match the SOW for this deliverable?
Key Dates	• Do the key dates match the dates in the approved Project Work Plan?
Roles and Responsibilities	• Are the correct Deloitte and DWSS staff identified for their role in this deliverable?
Quality Checklist	• Is there a CSG Quality Checklist for this deliverable, is each item included with section headings in the embedded deliverable template?
Tense	• Is first person tense maintained throughout the document?
Punctuation	• Commas – include a comment before the "and" • Bullets • Spacing after periods – only one space • Paragraph/header spacing • Header formatting – proper style applied for the heading to display correctly in the TOC
Periods	• If you have a bulleted list that includes full sentences, use a period at the end of each bullet. Bulleted lists that contain only phrases or single words do not need periods.
Titles	• Check for consistent use of "IM Contractor" – only use Deloitte when referencing a Deloitte product such as Deloitte's EVD, or when specified in a document template, such as the author of the document or revision to a document. • Check for consistent use of "DWSS" • Check for consistent use of "System" when referring to the CSE application – incorrect words are **application** or **solution**. You can use application software when referring to third party products such as referring to HP Exstream as a software application.
Italics	• Only used in the cover page for version number and date, and when identifying a title of a book or magazine.
Font size	Arial font only: • **10 pt Bold** for table and figure captions • 11 pt for text • **12 pt Bold** and for title format (each major word capitalized) for sub headings • **14 pt Bold** and **all caps** for section headings
Graphics/Pictures	• All graphics are easily readable and not fuzzy. All charts, graphics, and diagrams are labeled accurately and consistently. • Labeling of figures and tables to be **10 pt Arial BOLD**, centered over a table, and left justified for a figure.
Copy Review	• All text in 11 pt Arial font, NORMAL Style. • Acronyms are spelled out completely in the first instance. • Spelling and grammar check are complete – check that document proofing options are not turned off. Document text is concise and clear.
Tables	• **Table Headings** – color white, **11 pt Arial Bold**, centered • **Table Cells** – use the correct STYLE for table text and table bullets • **Table Bullets** – do not have a period at the end of the phrase or sentence • **Table Columns** – text should be left justified, columns of numbers or dates should be center justified

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Figure 5-50. QA Artifact Style Guide

The following figure highlights an overall dashboard from the Nevada Eligibility Engine project that represents adherence to programming and unit testing standards. This dashboard provides information about the code such as number of files, number of lines, functions. It also identifies how much code is duplicated. Code duplication causes an increase in software size and maintenance efforts and thus should be avoided. Using this dashboard and tool allowed us to reduce the amount of duplicate code in the system, in turn reducing the amount of maintenance and cost to maintain the system.

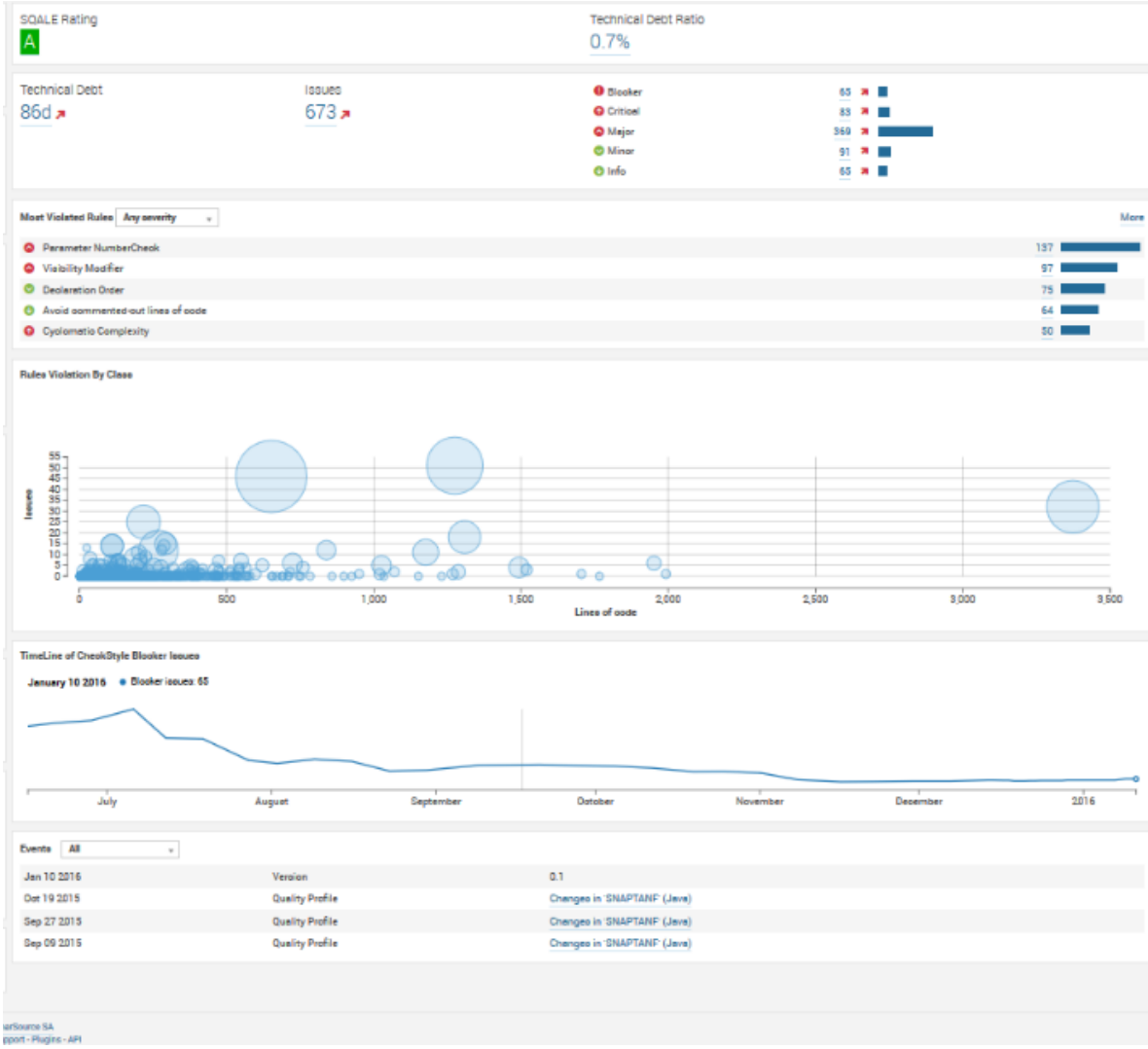

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Figure 5-51. Overall Code Quality Dashboard.

The following figure highlights a sample of code quality profile established using SonarQube and CheckStyle. The figure highlights an overall dashboard from the Nevada Eligibility Engine project that represents adherence to code quality and the code styling. This dashboard provides information about the code quality, styling and general Java programming best practices. Using this dashboard and tool allowed us to adhere to the base practices for Java coding and styling, in turn increasing code readability, efficiency and ensuring future upgrades to Java versions can be made without too much code retrofitting.

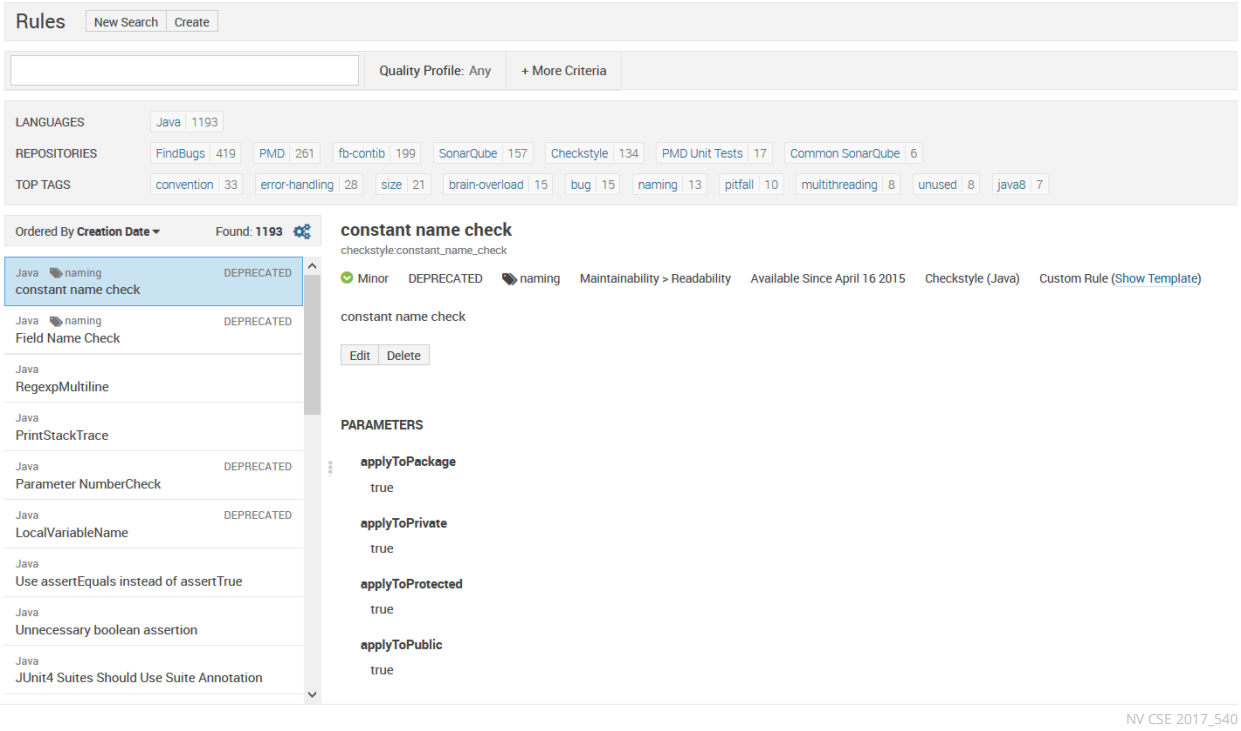

Figure 5-52. Checkstyle Code Quality Profile

The following figure highlights a sample of automated report utilized by developers to remain compliant with the established coding standards and quality profile

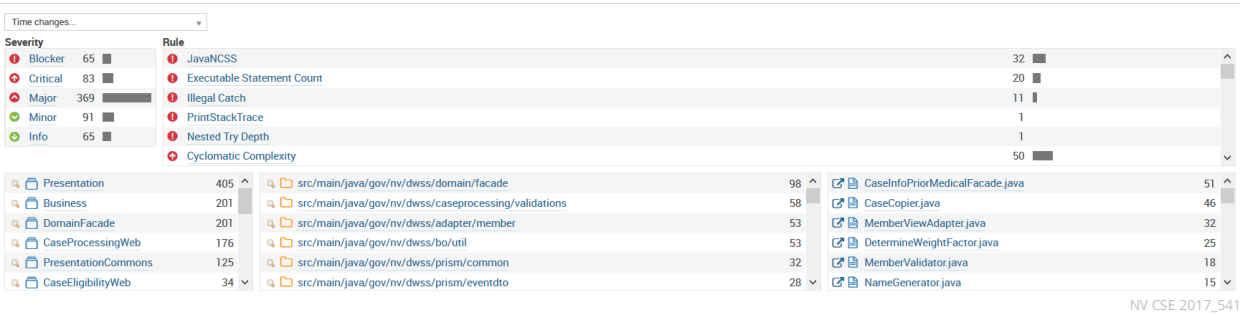

Figure 5-53. Violations Report.

5.12.4 Types of Statistics

5.12 PEER REVIEW MANAGEMENT

5.12.4 Types of statistics compiled on the type, severity and location of errors; and

Deloitte's Methodology and Process Provides Comprehensive Statistics of Code Errors to DWSS

Statistical information about the type, severity and location of code errors is of paramount importance in order to resolve issues quickly and effectively. The statistical information also addresses the risks and escalates potential critical issues before they can turn into showstoppers. The following metrics are tracked to provide information about the reported errors:

- ***Error Title***
- ***Error Description***
- ***Error Category***
- ***Detected Date***
- ***Detected By***
- ***Cycle/ Release***
- ***Submitting Team***
- ***Comments***

Once these metrics are compiled, we are able to provide statistics and reports for the DWSS team, as required. Errors are counted by severity and by subsystem to provide a snapshot of where errors are occurring in the system. This provides several downstream benefits in determining system weaknesses, future testing plans, and resource allocation for error resolution. Additional statistics such as errors created in a specific time frame can be provided to the DWSS team in order to show error creation and resolution trends. We stand as the only firm able to deliver this key capacity.

The following figure highlights a sample of statistics and trends related to Checkstyle issues reported in a weekly status report. These reports were created for the HCR-EE and State Supported Based Marketplace (SSBM) projects in Nevada and were reviewed and approved by the Project Manager and Project Executive. Checkstyle rules help improving the code quality, readability, re-usability, and reduce the cost of development. The Checkstyle violations found in the code were categorized based on severity, which helped prioritize the order in which violations were fixed. This report allowed us to track the progress of Checkstyle violations by severity.

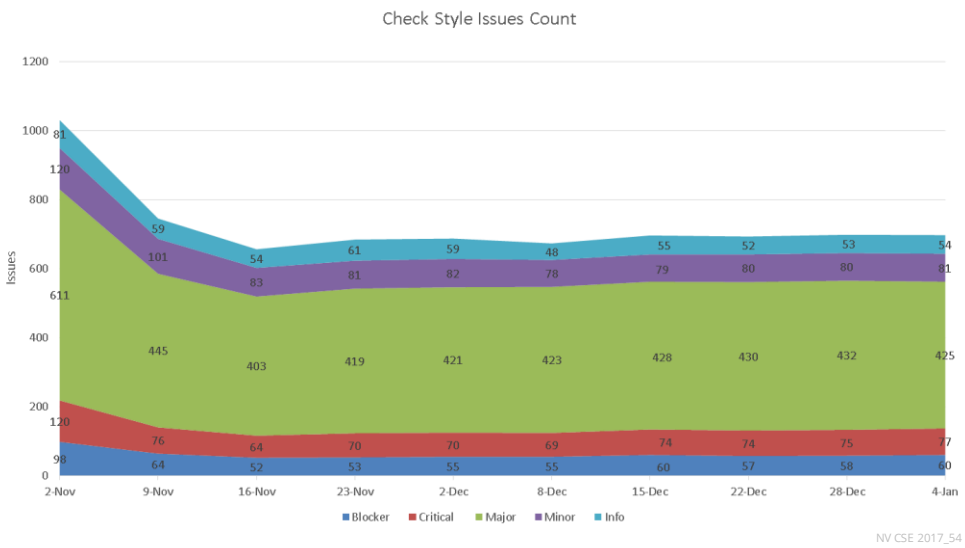

Figure 5-54. Violations Trend Report.

5.12.5 Tracking Errors

5.12 PEER REVIEW MANAGEMENT	
5.12.5	How errors are tracked to closure.

Deloitte's Process and Tools Track Code Errors from Identification to Closure

The primary tools utilized by the Deloitte team for code error tracking to closure include Peer Review Tracking Log (PRTL) for capturing manually identified coding errors and defects. The spreadsheet-based PRTL offers streamlined information about existing system issues with details such as Defect ID, Description Severity, Project Cycle, Project Module, Detected By, and Assigned To. The primary tool used by the Deloitte team for tracking automated captured coding errors, as well as other peer review issues, is JIRA for associated bug/defects and Jama Contour for code error tracking against Use Cases. Information gathered from JIRA, Jama Contour and PRTL information can be shared among project teams to facilitate collaboration during issue resolution.

Our EVD recommends the PRTL for manual error capture. The error tracking and closure process is described in the following steps:

- ***<u>Step 1, Create Defect</u>. Identify, verify and enter manually identified defects into the PRTL. Follow defect procedures defined in the Project Management Plan. Any project team member can log a defect. Sub - Steps: 1. Team leads monitor defects logged by their respective team members. 2. Verify that the defect is valid. 3. If not, do not enter a record, or mark the record as "Cancelled." 4. Prioritize the defect: Load the defect information into JIRA, and determine defect severity as Critical, High, Normal, or Low. 5. Specify the issue type and sub-type. 6. Provide a description of the defect, as well as the project release, team(s), phase(s), discipline/thread, and stakeholders impacted. 7. Assign defect ownership and establish the due date for defect resolution.***

- ***Step 2, Resolve Defect*. Work to manage the defect to a successful close. Sub - Steps 1.Implement the defect resolution actions to close the defect. 2. Document the resolution results. If the defect cannot be resolved, it is escalated to the next project level per the levels defined in the Project Management Plan. Determine if change request is necessary: If a defect's resolution actions require work outside the defined scope for the project or changes to signed-off project documents, create a change request to address this.**
- ***Step 3, Close Defect*. Sub – Steps 1. Close the defect and update the status in JIRA. 2. Communicate the status to stakeholders. Project defect statuses are communicated in the regular Project Status Report.**

Finally, there are several key considerations for the entirety of the peer management review process, listed in the following table.

Key Considerations	Benefit
Repeat this peer review process procedure for each major build.	Helps confirm that the code aligns with the software development coding standards defined for the project.
Recognize peer reviews as a cost-effective method.	Removes errors early in the process and encourages more experienced personnel to coach junior staff and limits rework in the future.
Establish procedures for the reviews. Determine how many meetings are needed, who participates, and what to review in each meeting.	Establishes the level of effort required to prepare for these reviews. Releasing the review checklists prior to the artifact creation results in a very effective review.
Implement program control.	The input messages or file contents read by a program are processed and are found, after transformation, as output (consider deletions a special type of virtual output).
Implement generation controls.	Correct versions of master files and databases are used.

Table 5-47. Key considerations for the peer review management process.

These key considerations, leveraged as part of our rigorous peer management review process, contribute to the high quality solutions we deliver to our clients.

5.12.6 Our Distinguishing Factors

Our proposed resources for the NCSEAS project consists of Leads and Architects with experience our CA CSE and Oregon Origin projects. They have fine-tuned our peer review management approach, checklists, and procedures to cater to the Custom Artifacts, Architecture, Framework and Configurations used in the CA CSE. These checklists and procedures were created and refined from lessons learned that peer reviews should also consider custom components like configurations, frameworks, and architecture.

5.13 Testing

5.13 TESTING

Vendors must describe the methodology, processes and tools utilized for testing as specified in Section 5, Scope of Work of this RFP including the following:

Deloitte's Methodology Promotes Comprehensive Functional and Technical Testing

Our approach to testing provides proven methods that result in a well-tested and well-performing system:

- ***We leverage CSE implementation experience from California, Florida, and Pennsylvania, coupled with the rigor of our EVD testing methodology.***
- ***We can successfully employ a baseline of over 5,000 CSE related test cases from our CA CSE implementation.***
- ***We provide well-documented procedures for defect identification and resolution.***
- ***Our comprehensive performance testing is based on the use of automated test scripts and processes.***

The Deloitte testing methodology identifies and resolves software deficiencies early in the SDLC process. We create awareness among the NCSEAS project team that software quality is achieved by the application of sound software engineering methodologies applied throughout the life cycle of application development; in other words, "Quality is built in, not tested in." Deloitte accomplishes this by bringing an industry-standard testing and quality management methodology in following the Enterprise Value Delivery (EVD) methodology. Our testing approach allows project management and team members to communicate the timing and report status on what functions need to be tested. Additionally, our team confirms that the operation components such as the hardware, software, and network communication of NCSEAS are ready to perform various functional processes in order to interface with external partners, systems, data exchanges, and customers.

In following this methodology, our team has a proven record of success in CSE solutions testing including our work on CA CSE, where we executed over 5,200 test scripts across 550 online screens and 1,800 batches with a capacity to support over 6,000 users. At the end of testing, we retested 100 percent of the failed scripts, and all passed. Our testing approach is built upon this successful foundation and brings those same processes, assets, and people to the NCSEAS project. Our testing approach includes an established set of test scripts from the CA CSE transfer solution. This provides a baseline for the federal certification test deck, which can be included in our initial System Test effort to provide early validation of certification test cases.

We integrate a business focus with established testing techniques and tools—a combination that results in a stable system that adheres to the NCSEAS functional requirements and truly supports daily CSE operations. Our EVD-based testing methodology includes a proven repository of processes, templates, and accelerators that have been used across each of our CSE implementation projects, as well as our broader national health and human services implementations—all with outstanding success.

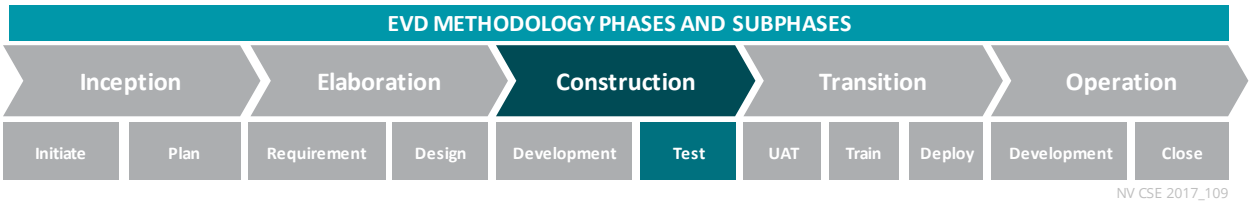

Figure 5-55. The Construction Phase of Deloitte's EVD Methodology. Within the Construction phase of the EVD methodology the Development sub-phase transitions to the Testing sub-phase.

Deloitte's testing approach is comprehensive and covers complete functional and technical testing—ranging from unit, system, integration, performance, regression, to security tests. Our test methodology is based on the following core principles:

- ***Early involvement and active participation of testing staff in the requirement validation, design and development process to facilitate a smooth transition to testing.***
- ***A structured approach and detailed timeline to effectively plan and manage the testing effort.***
- ***Regular status reporting of testing progress, including detailed summaries of test cases tested and passed, deficiencies, risks and issues, and mitigation strategies.***

We integrate these core principles into each stage of our testing approach. This provides the foundation for a sound and comprehensive testing effort used throughout the NCSEAS project. The repeatability and stability of the testing processes we use is representative of our mature software development methodology.

DISTINGUISHING FACTORS

The Deloitte testing approach makes effective use of:

- ***Our ability to leverage testing experience and assets built into our EVD methodology.***
- ***Our techniques for planning, defining and developing test cases to thoroughly test the system against functional processes, design features, and business rules that are informed by our extensive CSE subject matter experience.***
- ***Actively managing the testing schedule and resources against highly detailed work and test plans, focusing on detailed test execution and risk mitigation.***
- ***CSE specific testing accelerators such as custom tools for batch input file creation for interface testing and procedural e-learning modules for CSE functionality.***

Deloitte's Testing Process Confirms Realization of DWSS' Requirements with High Quality

The Test sub-phase of our EVD-based approach aligns directly with your requirements for testing, and includes activities that facilitate end-to-end functional testing of the NCSEAS solution based on the outcome of the requirements validation, design, and construction tasks. The Test sub-phase encompasses integration testing, system testing (manual and automated), performance/stress testing, and regression testing. It provides the necessary activities to complete thorough system testing and confirm that the NCSEAS solution is ready for user acceptance. Our test approach has two distinct processes:

- ***<u>Test Definition.</u> This process defines the overall approach and details the plan and appropriate test cases for each required test type. This process area includes confirming***

the scope of testing, defining the required test cases and test cases (including confirming the reusability of baseline CA CSE test cases), scheduling, resource planning, and environment readiness.

- ***Test Execution.*** ***This process constitutes the actual execution of testing, with each test stage providing a different but nonetheless critical focus building upon the completion of unit testing during the Construction task: Integration, System, Performance, User, and Regression testing. These tests also encompass requirements for Security, and Data Conversion testing. The different types of testing are described in the following table. The complete solution, carry-over components from the CA CSE system being customized and newly-developed code and enhancements must pass through each of these testing stages with approval by DWSS prior to transition to the next stage. This approach maximizes the testing team's effectiveness and helps improve software accuracy, as illustrated in the following table.***

Test	*Description*
Unit Testing	***Provides the development team with the necessary core features needed for initial confirmation of component functionality.***
System Testing	• ***This testing validates functions such as a complete child support case initiation process, which may encompass automated referral processing, the online pending referral function, automatic case setup, and automatic editing of referral data.*** • ***Early in the System Testing phase, integration and communication are tested across business processes after each of them are unit tested.*** • ***During System Testing phase, the Deloitte team performs security testing to verify overall application security (i.e., access into the solution) as well as role-based functional testing (i.e., access and authorization to perform specific case actions).*** • ***Data exchange testing is performed through each of the identified interfaces and Data integrity checks to confirm that the exchanged data is in the required format for both the source and target systems.*** • ***At the end of the System Test phase, regression testing validates the quality of the system has not regressed beyond previous benchmarks during the later builds or iterations. It involves a variety of approaches including "shakeout" testing of a newly configured environment, "smoke" testing a newly deployed build, and the ongoing execution of a core set of system tests.***
Performance Testing	***Identifies and resolve system bottlenecks and confirm that the application meets the specified performance criteria before it is released to the end user community.***
User Acceptance Testing	***Focus on testing by business and technical end-users to confirm that business and technical requirements have been met.***

Table 5-48. Types of Testing.

The following figure provides the flow of the project testing process.

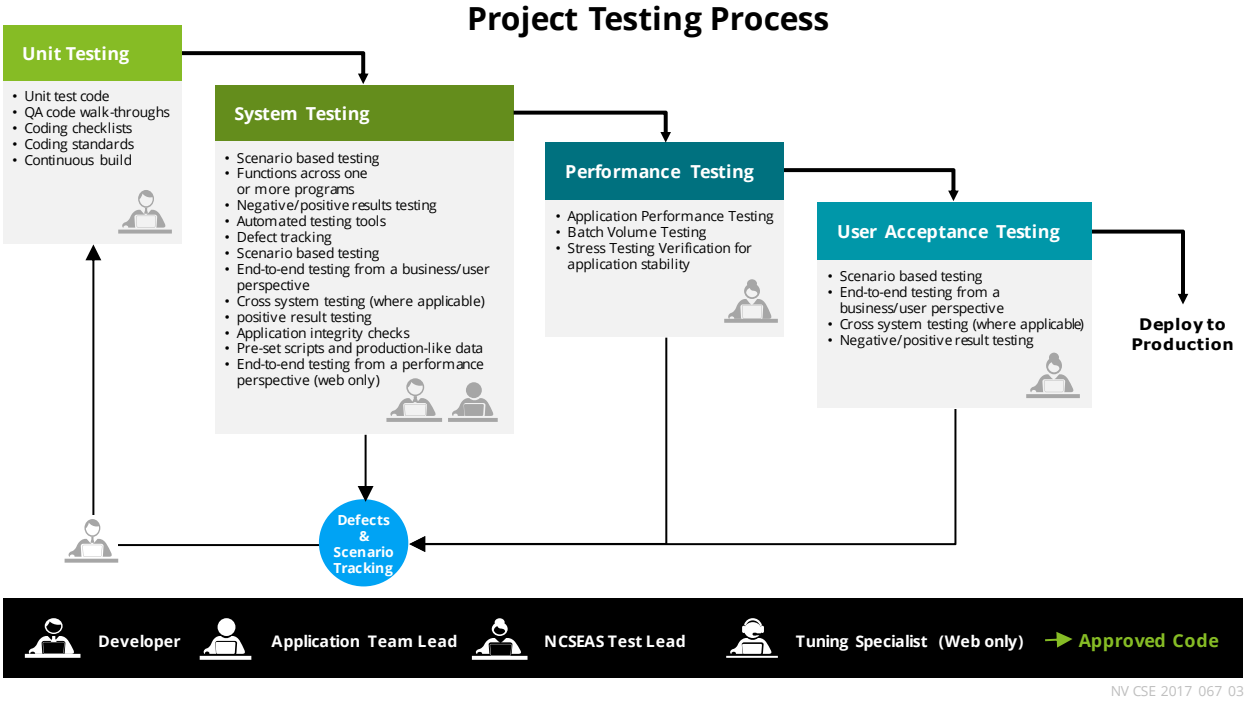

Figure 5-56. Progression of Our EVD-based Testing Process.

Our methodology emphasizes comprehensive requirements traceability to test cases, timely issue escalation, frequent communications across the project team, close interaction with the end user community, and configuration management processes that are integrated with other software development life cycle (SDLC) activities.

During testing, we group test cases based on their business processes, similar to our proposed Design and Development activities: Case Initiation, Locate, Establishment, Case Management, Enforcement, Financial Management, and Reporting, Customer Service, and Ease of Use. This helps prioritize and sequence our testing efforts in parallel with the lifespan of an actual CSE case as well as the completion of development tasks. The system testing activities are further grouped based on the type of testing being done within the overall tasks. The sequence of executing tests for each group is shown in the following figure.

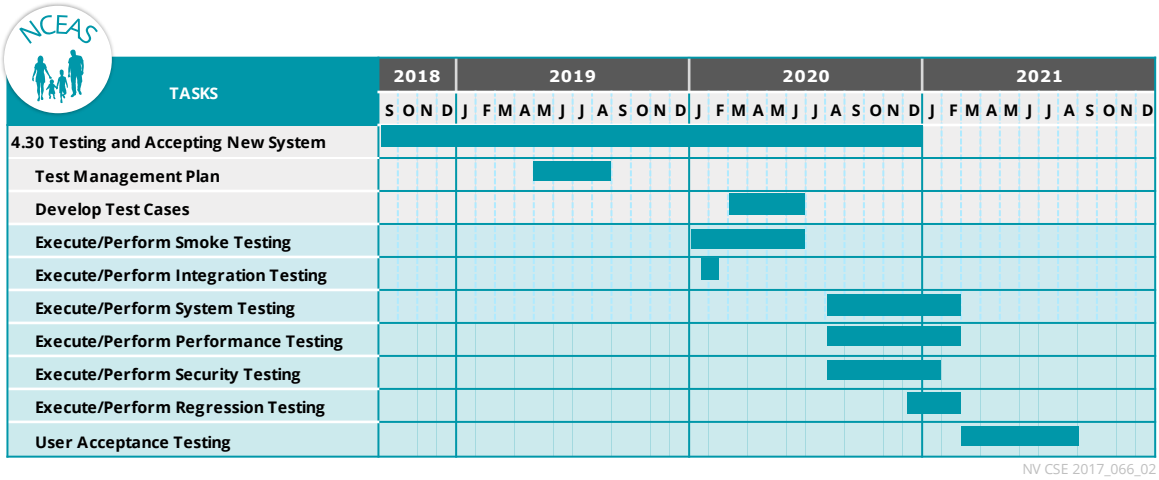

Figure 5-57. High-Level Schedule of the System Testing Task. Summary of key testing types and logical grouping of test cases during system test.

Deloitte is unique in its testing approach for NCSEAS because we have proven our approach on other CSE projects. This includes a test case inventory of 5,200 child support related test cases and 200 test cases identified for the Federal Certification Test Deck. The Federal Certification Test Deck is used to guide our test case creation so that during testing we know whether we are on track for federal certification by comparing our test results against the expected financial outcomes that are included in the test deck. This reduces risks involved in testing and promotes thorough testing of the system before deployment.

Based on our experience and approach followed during the OR Origin project we will also plan on testing with some production data to the extent possible. Some of the early inconsistencies we see with our experience in OR Origin is with the application issues that arise when tested with converted data. If we can include some level of testing with converted data early and often, that would reduce these surprises during system testing phase. Moreover, testing with production data bring in anomalies that are difficult to create in lower environments.

In addition to our extensive test case bank that has already been verified in other CSE projects, we believe it is imperative to set up a test bed in the testing environment as it is the key to success in the testing phase before deployment to production. Deloitte has developed tools to accelerate the process of redacting client information on production data in order to facilitate adding production data to the test bed and remove any sensitive information from production data. Deloitte is a proponent of using production data for the highest-quality of testing and has the means to do it.

As the project transitions to the UAT sub-phase, we continue to apply our methodology to UAT. Our UAT methodology is guided by principles to plan testing early, clearly define and measure testing entry and exit criteria.

In summary, our testing process approach validates that the following objectives are achieved upon completion:

- ***Provides end users, stakeholders, and project team members with empirical evidence of software quality coming out of the Development effort.***
- ***Confirms the realization of requirements and design specifications within the NCSEAS solution through concrete demonstration.***
- ***Verifies that the integrated NCSEAS software complies with specifications using defined, agreed upon criteria to confirm expected results.***
- ***Verifies that the requirements are traceable back to test cases with recorded results.***
- ***Confirms the continuity in enhancements to, and development of, the baseline CA CSE system transferred components through overlapping testing phases with a thorough regression strategy.***

Proven tools based on CSE projects' experience for test cases, defects, and test automation

As part of our Application Lifecycle Management (ALM) suite of tools, Deloitte proposes the following tools during the testing phase that provide numerous benefits to DWSS in validating the quality of the transfer solution.

Tool	*Purpose*	*Benefits to Nevada*
Jama Contour	***Development and tracking of test cases***	• ***Provides transparency of test cases to DWSS for UAT test case creation*** • ***Accelerates testing phase based on test case bank from the CA CSE system*** • ***User friendly tool that can easily be handled by the testing team*** • ***Provides traceability capability to the code, design and requirements***
JIRA	***Management and tracking of defects***	• ***Proven and robust tool used in numerous large scale commercial and Public Sector projects including CSE projects*** • ***Flexible and intuitive tool that enables users to customize views and dashboards of defects*** • ***Provides user friendly work flows to initiate and track defects through the entire lifecycle*** • ***Enables users to attach documents, pictures, and notes to defects***
Selenium	***Automation of test cases***	• ***Provides first step of quality assurance for developers to validate the code*** • ***Optimizes time for the teams by allowing smoke tests to be performed after builds to validate uptime of system in each test environment*** • ***Saves time for the testing team by automating common test cases***

Table 5-49. Deloitte's proposed testing tools.

5.13.1 Procedures for Review of Test Cases

5.13 TESTING	
5.13.1	Procedures for review of test cases;

Comprehensive Review of Test Cases or Quality

Deloitte's approach to establishing procedures for reviews of test cases provides the depth and breadth for comprehensive test planning. We use both a top-down approach, breaking the application into testable processes, and a bottom-up validation so that approved requirements map to and are covered by test scripts. We create a complete set of testing scripts to effectively exercise the NCSEAS solution under many conditions from both a business and technical perspective. We focus on the development of meaningful, business-driven test cases that trace directly back to functional requirements. Our detailed scripts confirm that NCSEAS works the way it should (positive tests) and that it does not do the things it should not do (negative tests). In this way, we cover less-common "negative" flows within the application.

Based upon our years of experience developing, testing, and delivering enterprise-level business applications, we have confirmed that test case creation and mapping cannot be done in a silo. In many instances, the hand-offs or transition activities between development and testing activities are just as critical to a quality delivery of the solution as the deliverables themselves.

We use the outputs from the requirements and design activities – process flows, use cases, business rule definitions, and requirements traceability – to define the NCSEAS test scripts and detailed test cases. Working with the NCSEAS development team, we define a full suite of test cases by the end of the Development sub-phase to establish a solid execution baseline before starting the System Testing task.

Our Processes and Tools for Test Case Reviews Promote Transition from Construction to Testing

To create a transition into test planning, we work closely with DWSS to prioritize the key business process flows from which we derive the test cases. While system features are important and should function appropriately, they must be prioritized based on their overall criticality to the NCSEAS system and aligned with other test cases to be tested in the phase. We look at each defined business process to determine how many test cases must be created to effectively verify the requirements. From this, we develop a testing schedule that is mindful of key dependencies for the sequencing of processes, the order of test case execution, and the number of iterations needed to properly exercise system functionality. These activities are overseen by a Deloitte Test Lead who has prior experience testing other CSE systems.

Test Case Development

Upon confirmation of key business processes, we create an inventory of test cases. These provide full coverage of requirements and business rules for both positive and negative

tests within a business flow. Our goal is to provide true verification of the system through each stage of testing.

The next logical step is breaking down key business processes to create detailed test cases. We write test cases to the level of detail appropriate for the stage of testing (e.g., Unit, System or Performance Testing). We write each test case with a series of sequential steps that flow through part or all of a specific process area for given user roles in the system. Each step is clearly written so a tester can document a discrete and unambiguous expected result as required by the design. We share knowledge of our testing approach and test cases for the NCSEAS solution with the DWSS staff. This allows the DWSS to get acquainted with test case coverage, which builds the confidence that the solution meets DWSS' defined objectives.

As we advance through the testing phases, our cases get broader and deeper to complete the verification of NCSEAS business process integration focusing on a CSE case lifecycle. DWSS team members help to review the test cases for completion and accuracy. By involving DWSS in the test case creation process, DWSS is more prepared for its own UAT test case creation and execution. Once the test cases are completed and confirmed, we work together to put them in a logical business order. From this exercise, the test execution schedule is developed.

The final step is to determine the number of iterations that must be complete for each case. Included in our test plans, we define the data management process and determine the corresponding test data requirements. Our approach includes a concerted effort to test the application with converted data, as well as newly-entered representative data. Data requirements also help drive the number of iterations needed for each test case.

Test Definition

We create a complete set of testing scripts to effectively exercise the NCSEAS solution under many conditions from both a business and technical perspective. Our review approach goes beyond the writing of test cases. We focus on a multi-step review process that is ensures meaningful, business-driven test cases that trace directly back to functional requirements.

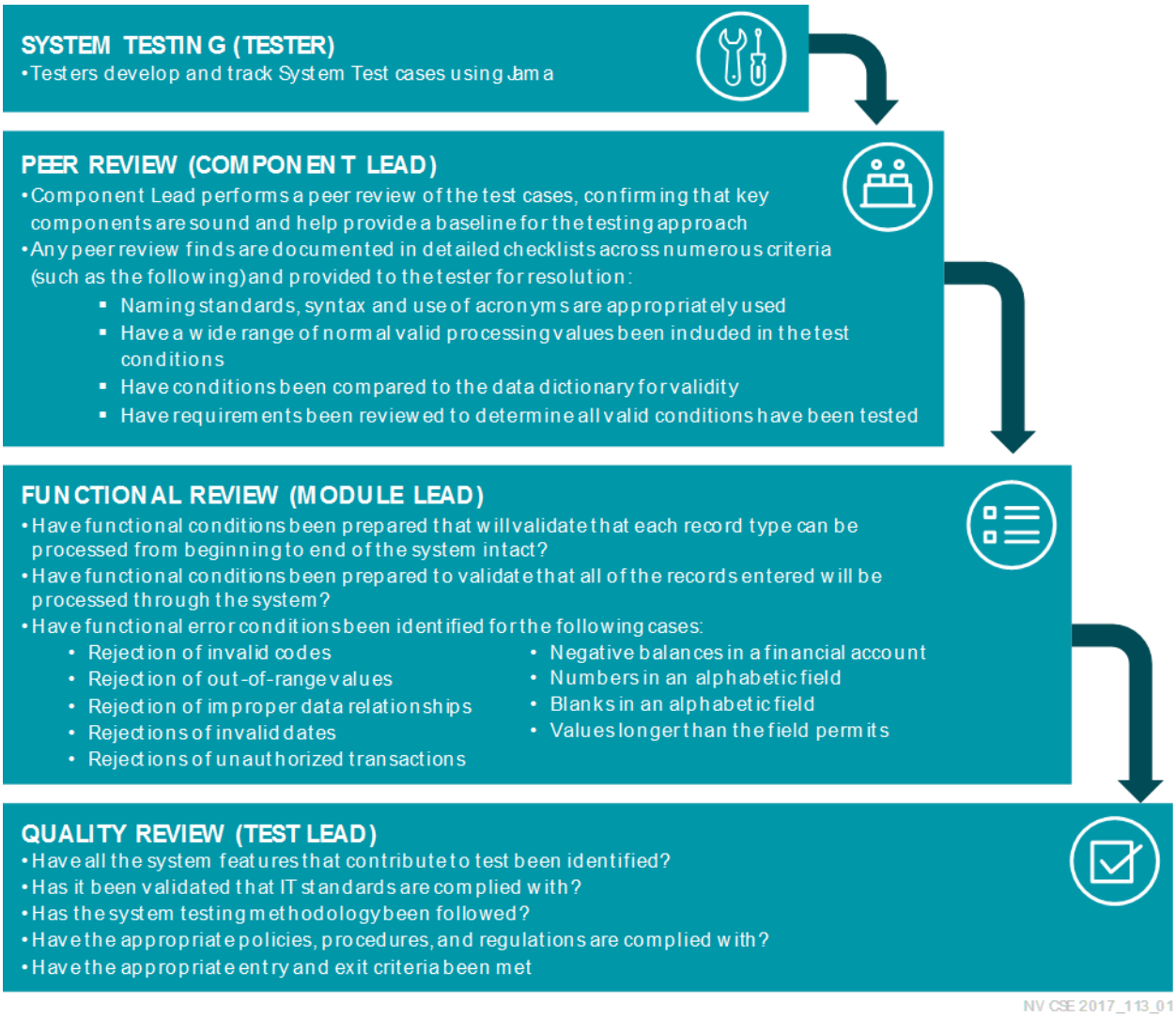

Figure 5-58. High-Level Flow of the Test Script Review Process.

5.13.2 People Involved

5.13 TESTING	
5.13.2	Number of people normally involved in testing and their roles;

Our Estimate for the Number of Test Resources Begins with the Anticipated Number of Test Cases

To determine the number of people that is involved in testing, we take into account the following factors:

- ***Number of test cases for manual execution***
- ***Number of cycles of execution***
- ***Timeframe for testing period***

- ***Number of test cases that a tester can execute per day based on an expected level of proficiency***
- ***Proficiency of the tester in CSE systems***

Our approach starts with the number of test cases that we have identified for manual execution. We multiply the test cases by the number of cycles that the test cases needs to be executed in to arrive at the total number of executions for the test type (System, Performance, or UAT). This number is distributed over the allocated timeframe of the testing period to arrive at the number of tests that need to be tested per day. We then divide the test cases that needs to be executed per day by the number of cases a proficient tester can execute to arrive at the number of testers needed. Of course, this is dependent on the proficiency of the tester since testers with more CSE experience or DWSS system experience are able to execute more scenarios than a tester without such experience. Based on our experience with OR Origin, our proposed team consists of approximately 15-20 testers.

We can apply this approach when the requirements (and subsequently test cases) are finalized to determine the system testing, performance testing and UAT testing resource needs. However, as an example, the CA CSE solution has approximately 5,200 system test cases identified to be executed. These cases shall be executed in two cycles which results in at total of 10,400 executions. If the system test execution period is six months, then around 58 test cases would need to be executed per day. If we assume that a proficient system tester can execute four scenarios per day, we would need a team composed of around 15 system testers. One test coordinator and one testing lead would also need to be available to oversee the testing activities.

A similar approach shall be taken to identify the number of resources for automated test execution, however the dependencies are different. For automated test execution, we need to take into account the following factors:

- ***Number of test cases for automated execution***
- ***Timeframe for automated testing***
- ***Number of automated scripts that a tester can write per day***
- ***Proficiency of the tester in CSE systems***

Automated testing provides the benefit that test execution time is reduced once the automated test script is created. However, there is greater set-up time required to create the scripts. The number of resources required is calculated as the number of test cases identified for automated execution distributed over the timeframe allotted for automated testing, and divided by the number of automated scripts that a proficient tester can write per day.

Collaborative Environment to Integrate the Right People for Maximum Quality from Testing

It is critical for DWSS and the Deloitte team to identify the right people for testing, so that we work collaboratively to prepare for each testing phase and continue that momentum once DWSS is directly involved during execution of UAT testing activities. On previous DWSS projects, Deloitte worked with DWSS throughout the testing process to validate our understanding of the design, business requirements, and functionality of the system. Deloitte already has individuals on its team that are intimately familiar with existing DWSS systems such as the legacy NOMADS, which leads to more high-quality testing as the functional knowledge of the system is already established. The Deloitte team which will consist of both NOMADS experienced individuals and experienced CSE testers can utilize their combined existing knowledge to perform more thorough testing and support DWSS once it is passed off for UAT.

We will also share our insights and ideas on planning UAT with DWSS and help plan ahead for UAT. We will work with DWSS to start creating test cases ahead of time. We will also share the UAT system test cases with DWSS CSE SMEs and allow them to learn how the test cases are written and traced.

In order to successfully complete testing all the way through to implementation, the Deloitte team needs access to key DWSS staff user champions. The resources utilized should demonstrate a diverse background of the individual's intent on using the system following implementation. Some primary factors that the Deloitte team and DWSS need to consider when determining the final players through each testing phase, particularly for UAT, are:

- ***Functional Experience.*** ***The functional usability of the system is assessed by these individuals and their expertise is often categorized into modules such as case initiation or management. The individuals should understand operations and be able to understand how the functionality is translated to operational usability.***
- ***System Experience.*** ***The technical intricacies of this project require integration of a single rules engine to multiple systems. The UAT testing group should include experts within the integration of the NOMADS system with the IV-A system.***
- ***Policy Experience.*** ***A primary component of the new rules engine are the federal mandates that must be met. The Deloitte team provides knowledge from a project and organizational perspective but DWSS needs to be able to provide individuals that can test the application with the department's policy objectives in mind.***
- ***Legislative Understanding.*** ***The new laws and mandates governing the requirements of this project are the base of how the application functions. UAT testers need a solid understanding of the new laws and how they pertain to what is being tested.***
- ***External Stakeholders.*** ***The ability to test and certify the NCSEAS system and interfaces with other systems and agencies requires input and coordination with external stakeholders that are included during the UAT phase.***

The resources mentioned need to be knowledgeable about the requirements, guidelines, and objectives established for the project so that we are one team heading in the same direction which is an on-time, on-budget solution for the NCSEAS project that is imperative to DWSS' success. Users not only take ownership of the system but also have the business expertise and are in the necessary position to determine and validate if the application conforms to the business requirements. End users are incorporated into requirements and design sessions and ultimately have significant input on UAT test case definition and coverage and the system's ability to meet the designated specifications.

Likewise, Deloitte provides knowledgeable resources to complete our own testing efforts. We identify an experienced testing lead as a main point of contact for DWSS inquiries and monitoring of the testing activities. We have a testing team with knowledge of existing DWSS systems, processes, and an understanding of CSE systems and requirements.

5.13.3 Types of Checklists

5.13 TESTING	
5.13.3	Types of checklists utilized;

Deloitte's Experience from CSE Projects and the Transfer Solution Provides Nevada with Comprehensive Testing Checklists

In order to prepare for testing, as well as complete the activities successfully, Deloitte uses a variety of checklists to make sure the necessary steps are taken to mitigate any risks when moving across the testing phases. By establishing checklists, including entrance and exit criteria, for each testing phase, the NCSEAS team is equipped for the testing tasks and to keep timelines intact. The checklists within our methodology have been refined from the Deloitte team's involvement in CSE projects. Examples of other checklists used in our processes may be seen in Figure 5-44 and Figure 5-58. The following is an example of a high-level checklist to be leveraged to confirm that the critical items associated with UAT have been accomplished before proceeding.

Item	Criteria
1	Exit criteria for system and integration test have been met.
2	All systems identified as in scope are up and running in the UAT environment.
3	The UAT Test Plan Template has been reviewed and signed off by Deloitte and DWSS.
4	DWSS has created and reviewed UAT test cases and scripts.
5	The UAT environment is available with the most up to date configuration and code.
6	The UAT testers have been trained on tools and systems (where applicable).
7	DWSS has created UAT test data in the environment.
8	Deloitte and DWSS leadership agree that UAT testing may begin.

Table 5-50. Example User Acceptance Testing Checklist.

The following table demonstrates that a checklist for testing should include more than just a checklist for confirming when a testing phase has been successfully completed. Checklists may also confirm that the project is ready to enter or exit the next phase.

Checklist	*Description*
Phase-In Activities Checklist	***Contains the activities that should be addressed at the beginning of the phase such as confirmation of environment stability, completion of preceding testing activities and objectives.***
Ongoing Activities Checklist	***Contains the activities that should be monitored throughout the life cycle of the phase. Components and functionality that are critical to the successful completion of the phase on-time are monitored to assist with meeting the tight schedule.***
Phase-Out Activities Checklist	***Contains the activities that should be confirmed and validated as completed before considering phase closed.***

Table 5-51. Checklists Provide Checkpoints. Checklists are used to communicate the progress of the testing, and assist testers in confirming that each step is taken to complete any and all associated tasks.

5.13.4 Types of Statistics

5.13 TESTING

5.13.4 Types of statistics compiled on the type, severity, and location of errors; and

Deloitte's Methodology, Process and Tools Allow Comprehensive Tracking of Errors for DWSS

During the system test phase, Deloitte monitors and reports testing status to DWSS. For system testing, Deloitte focuses on internal tracking on a daily basis, and sharing the status of testing and defects to DWSS in regular weekly and monthly reports, as well as at a high-level view in Steering Committee meetings. Regular testing and defect triage meetings are held and a set of reports are used to measure progress. We generate a series of tracking lists on an as-needed basis to help drive targeted discussions, particularly in defect triage meetings. These lists are typically extracted from the JIRA tool, and provide both summary and detail information to help facilitate the sharing of information with DWSS stakeholders and other participants in test meetings. By being transparent with DWSS on testing status, we can stay true to timelines and meet deadlines.

A sample test monitoring report produced from the JIRA tool is shown in the following figure. It includes test case to requirements coverage, test case completion (plan vs. actual), defects (open vs. closed), test case subject area, and an overall scorecard.

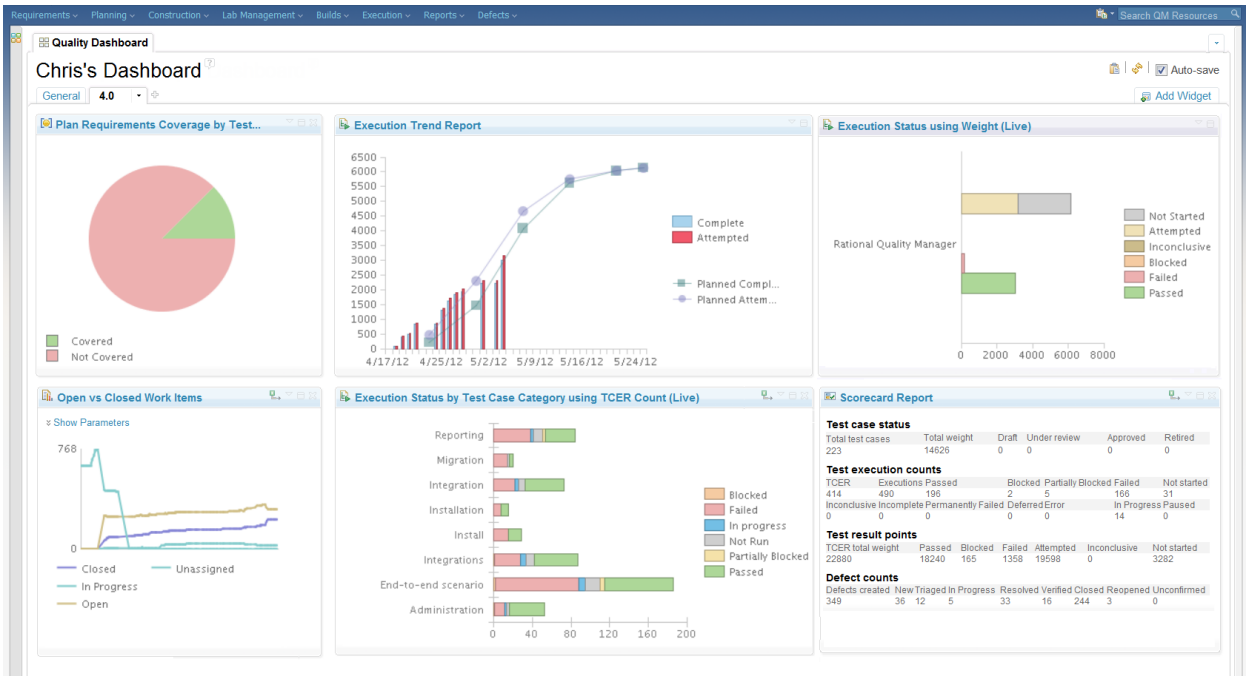

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Figure 5-59. Sample Test Dashboard used for Child Support Solution. A sample view of the testing dashboard which summarizes results from test case execution, defects as well as test cases to requirements coverage.

These reports are important in communicating project status and progress and highlight any trends that need extra attention during the testing phase. Reports focus on two key metrics – test script execution and defect reports. Test script execution is important to track progress against the baseline defined when creating the test plan. There are many components that contribute to this. For instance, tracking the number of blocked test scripts that cannot be executed because of high priority defects provide a metric to determine how many test scripts cannot be executed until a build is completed. Additionally, if the number of test scripts actually being executed is less than the number planned, then management from the Deloitte team and DWSS can work together to understand the constraints resulting in the team falling behind.

With regard to defect reports, there are also many components that are tracked to confirm progress towards closure of defects. There are a couple key items regarding the number of defects in development and testing team's assignments. For instance, if there are a lot of defects that have been fixed and delivered, then the appropriate resources (Deloitte testers during System Testing, and DWSS testers during UAT) are allocated to efforts to re-testing these defects to confirm the changes are working according to expectations. Delays in re-testing defects can result in timeline delays as a small percentage of fixes are expected to be delivered back to the development team for additional work to meet the expectations of the users.

For the Health Care Reform Eligibility Engine (HCR-EE) project, Deloitte created defect reports that indicated the number of defects by component/module and severity as well as the status of the defect (currently assigned to Deloitte development, ready for system

testing and passed system testing to name a few). This report also indicated the location where the defect was identified (System Testing, UAT, or Production). These statistics were reported in weekly status meetings, monthly reports, and Steering Committee meetings. A sample of this type of defect report that was used during the HCR-EE project is included in the following figure.

DELOITTE ASSIGNED DEFECTS BY COMPONENT						
Reported Phase	Component	Open Defects Assigned to Deloitte	Resolved by Dev	Ready for System Testing	Passed System Testing	Total
System Testing	AMPS	7	-	-	-	7
UAT	Eligibility Rules	2	-	-	-	5
	NOMADS	1	-	-	-	
	AMPS	2	-	-	-	
Production	Eligibility Rules	1	-	-	1	2
Total		13	0	0	1	14

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Figure 5-60. Sample defect report from HCR-EE project that indicates the defects based on component and location of defect (reported in System testing, UAT or Production).

In the past, Deloitte participated in the DWSS Roundtable meetings in order to review defect reports. This experience allowed our teams to work collaboratively in order to resolve outstanding issues. This type of forum addressed defects in a constructive manner by engaging the appropriate owner. This strategy can be utilized again for the NCSEAS project so Deloitte and DWSS can work together to review the compiled statistics, highlight key action items, and better resolve any issues that may be occurring.

The Deloitte team and DWSS already have a working relationship and an understanding of what kind of statistics are important to track throughout testing. For the NCSEAS project, Deloitte continues to work together with DWSS to communicate the plan for compiling statistics throughout execution; thus we collaborate to modify and adjust any reporting mechanisms to fulfill the objectives of the project.

5.13.5 Tracking Errors

5.13 TESTING

5.13.5 How errors are tracked to closure.

Deloitte's Methodology, Process and Tools Enable Seamless Tracking of Errors from Initiation through Closure

A core set of team members, including analysts, testers, and developers review errors (defects) before they are identified and logged into the defect tracking system (JIRA). After determining the nature of the problem and classifying it as an issue that needs to be fixed or as a future enhancement, it is assigned a priority level. Priority levels are established to differentiate between critical problems and non-critical ones. For example, an issue where the financial distribution to disburse the child support payment or an issue where a referral is not processed would be categorized as higher severity issues. Conversely, a spelling error

found on an informational dialog box would not significantly impact DWSS processes or productivity and as a result, would be given a lower priority. The priority dictates the order in which the Deloitte team and DWSS addresses defects. Our team works with project stakeholders early on in the project to define the various priority levels.

The following table provides an example of the priorities and descriptions.

Priority	Description
P1	***A test discrepancy or error in the business critical functionality of the application. A critical priority defect instance prevents the continuation of the testing effort. Previous to the initiation of any testing phase DWSS and Deloitte stakeholders clearly define business critical functionality.***
P2	***A test discrepancy or error that does not prevent the continuation of testing, but must be fixed to provide proper data handling. A major priority defect instance may also occur when the application functions properly, but the actual test results are not the same as the expected results.***
P3	***A test discrepancy or error that does not interfere with testing effort. A minor priority defect instance affects the aesthetics of the application. Example: spelling error.***
P4	***A work around exists, or the defect is slight. Example: A button is slightly off-center.***
P5	***An enhancement request or design issue to be brought to the development team as a suggestion.***

Table 5-52. Defect Prioritization. Defect prioritization helps focus the team on important issues that are found during UAT, and resolve them accordingly.

Throughout system testing, Deloitte works internally to prioritize defects and drive them to closure before UAT. Deloitte works with DWSS to clarify intended functionality and validate critical defects in the system are being prioritized to be fixed so that we enter UAT with a high-quality system.

When we enter UAT, we work closely with DWSS on defects found in the system. When working with DWSS in the past, the Deloitte team had the opportunity to be involved in the DWSS' UAT Round Table meeting. We worked with DWSS in this recurring meeting to help facilitate resolution and prioritization of defects. Deloitte's support to provide direction and guidance UAT helped to make DWSS projects successful. Deloitte works with DWSS to close out Priority 1 and 2 defects and meet exit criteria on time before the closure of UAT. Deloitte is committed to continuing our work with DWSS to complete another successful UAT.

The priority assignments guide the order in which defects are resolved. The time required to resolve a defect depends upon the complexity of the required resolution and the effort required to implement and re-test the resolution. The Deloitte team works to resolve defects in a manner that avoids any project delays.

The Deloitte team supports DWSS during the project to identify response times based on a defect's severity and the resolution's complexity and effort. After assigning a severity to the defect, the Deloitte functional track lead assigned to the related requirement assigns the defect to one or many technical resources for resolution.

The following is a high-level summary of our proposed Defect Management Process:

- ***Identify Defect.*** ***A tester discovers an unexpected result during test execution or test review that could be a defect. The tester records details of the defect, such as the steps that can be taken to reproduce the problem.***
- ***Log Defect.*** ***The defect is logged in the defect tracking tool after confirming that a similar defect has not already been reported. This includes information about the steps to reproduce the defect, actual and expected results, credentials used when defect was discovered, and screenshots of the defect.***
- ***Triage Defect.*** ***The defect is triaged during a periodic Defect Triage meeting. Each reported defect is reviewed with appropriate stakeholder(s) to reach consensus on the defect's validity, severity, and priority. Invalid defects are returned to the tester for review; valid defects are assigned to the functional team or development team for disposition. Change requests are deferred to be addressed at a later time.***
- ***Develop Defect Resolution.*** ***The assigned development team member defines a proposed resolution for the defect using the information provided about the defect. We collaborate closely with the DWSS to manage defect resolution and code correction. In this collaboration process, defects are assigned to the project team, composed of both Deloitte and DWSS staff, for correction and QA purposes.***
- ***Deploy Defect Resolution.*** ***Once the corresponding component has been corrected and unit tested, a software release is created and promoted to the Test environment using the procedures defined within in our configuration management approach. Initial smoke tests are performed in the Test environment to verify successful deployment of the release.***
- ***Retest Defect.*** ***The defect is assigned to a tester (preferably the defect originator) to re-run the applicable test cases to confirm whether the defect has been successfully fixed. If the test is successful, the corresponding defect is marked as resolved; if the test is not successful, it is returned to the development team for further disposition.***

The following figure depicts the defect management process.

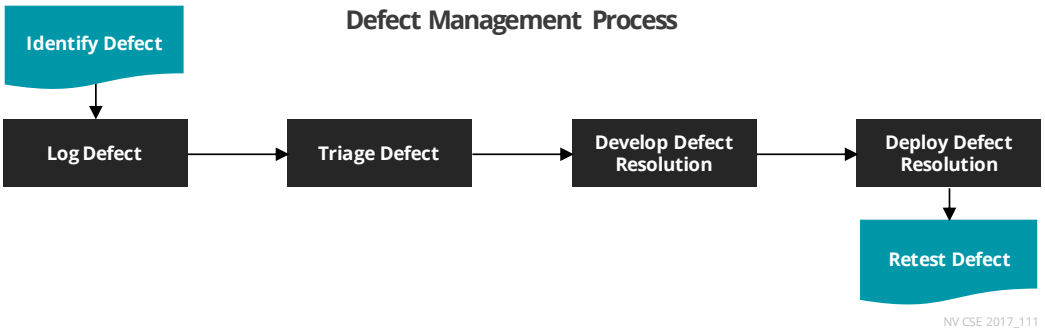

Figure 5-61. UAT Defect Management Process. The Defect Management Process provides a clear course of action to resolve any and all defects found during UAT.

As part of the defect management process, the tester records information including a detailed description of the problem along with the issue type and screen name in our testing tool, JIRA as shown in the following figure. Since each defect is tied to a specific test case, when the defect is fixed, revalidation of the associated test case becomes easier.

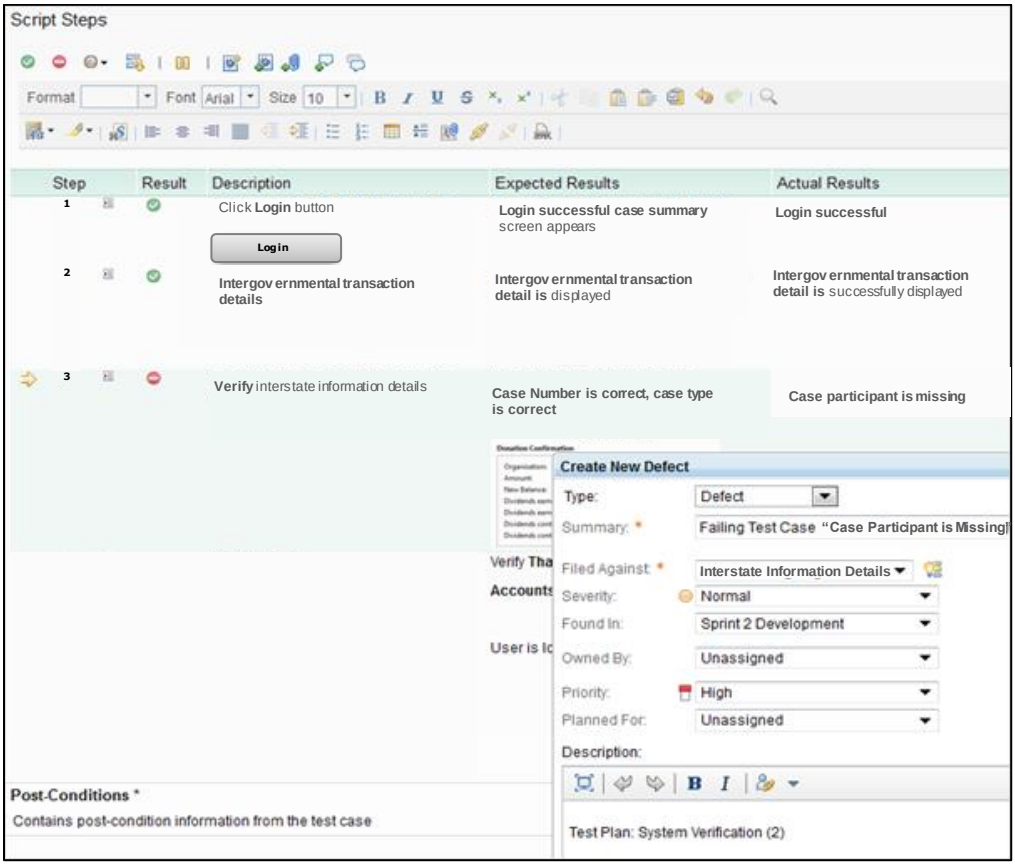

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Figure 5-62. A UAT defect is tied to a specific test case to enable re-test. Example of a UAT defect tied to a UAT test case.

This information is supplemented by the tester's comments regarding the identified issue. Our team jointly reviews the recorded issues together with designated stakeholders to determine if the issue is in fact a defect or a change request. We resolve defects according to the priority and severity, and we then promote them back to the appropriate environment (i.e., System Test and UAT) for retesting of the failed test case. Fixing application code is performed by the development team, composed of both Deloitte and DWSS staff when applicable.

The defect resolution process we follow means that the Deloitte team only considers test scripts complete after passing three quality assurance checkpoints: the developer, the functional lead, and the independent testing team. This process results in higher quality for DWSS.

5.13.6 Our Distinguishing Factors

Our proposed testing resources for the NV NCSEA project consists of team members with experience in our various CSE projects. They have fine-tuned our EVD testing approach, and refined it to the needs CSE solutions. We have a jump start on the testing process as we implement the test bank and processes used for the CA CSE solution being transferred as part of the NCSEAS project. This process is already underway in Oregon, so the lessons

learned on testing OR Origin's CA CSE transfer solution adds even more clarity on the testing that needs to be done on NV CSE. Risks are ultimately reduced as the testing of the transfer solution in California validates the NCSEAS solution is properly tested before deployment.

Deloitte supports DWSS to develop testing plans that are efficient, requirements focused, and based upon the objectives of the project, as has been demonstrated on both previous DWSS projects and other Deloitte CSE projects. Our proposed testing staff which consists of CSE experienced testing professionals use proven procedures for reviewing test cases, a variety of comprehensive testing checklists, and monitors testing progress via key metrics and reports which are important in communicating testing status.

In addition our collaborative approach, open communication, and knowledge sharing between DWSS' testing resources and the Deloitte team facilitate accurate and comprehensive testing efforts from system testing through acceptance testing. Throughout the planning and execution components of the various testing phases, it is imperative that DWSS and the Deloitte team work side by side to prepare a quality product for implementation. Deloitte's testing methodology has proven successful for previous DWSS projects.

5.14 Project Software Tools

5.14.1 Software Tools and Equipment Resources

5.14 PROJECT SOFTWARE TOOLS

5.14.1 Vendors shall describe any software tools and equipment resources to be utilized during the course of the project including minimum hardware requirements and compatibility with existing computing resources as described in Section 2.4, Current Computing Environment.

Our proposed technology stack for the NCSEAS solution is selected based on the following factors:

- ***Baseline California CSE Solution,***
- ***Deloitte's Child Support experience in other States,***
- ***Compatibility with Nevada's current hardware/software investments,***
- ***Alignment with Nevada's RFP requirements,***
- ***Software that can be deployed on commodity hardware,***
- ***Provide business value quickly and efficiently at a competitive price***

The following table includes the list of Project Software Tools to be used during project implementation. The details on the number of licenses, and costs including initial licensing and ongoing maintenance costs is included in Part II – Cost Proposal Submission Requirements, Tab II: Cost Proposal, as requested by the RFP.

Software	License Type	Function	Minimum Hardware Requirements	Compatible with existing Nevada Computing Resources (Yes/No)	Currently exists in DWSS (Yes/No)
Adobe RoboHelp	Commercial	Used for Help Text authoring	Single Core 1GHz CPU, 2GB RAM, 3GB disk space	Yes	No
Articulate 360	Commercial	Used for content creation for e-learning and documentation	Single Core 2GHz CPU, 2GB RAM, 1 GB disk space	Yes	No
Atlassian FishEye	Commercial	Used for connecting Perforce Helix with JIRA	Single Core 1.8GHz CPU, 1GB RAM, 1GB disk space	Yes	No
Atlassian JIRA	Commercial	Used for managing defects across the phases of the project	Single Core 1.8GHz CPU, 512Mb RAM, 4GB disk space	Yes	No
Cisco AnyConnect VPN	Commercial	Used for VPN into State network from Project Site	Single Core CPU 1GHz, 512MB RAM, 100MB disk space	Yes	Yes

Software	*License Type*	*Function*	*Minimum Hardware Requirements*	*Compatible with existing Nevada Computing Resources (Yes/No)*	*Currently exists in DWSS (Yes/No)*
Eclipse IDE	***Open-source***	***Used as Integrated development environment for application code***	***Single Core CPU 1 GHz, 4GB RAM, 2GB disk space***	***Yes***	***Yes***
Erwin Data Modeler	***Commercial***	***Used for Data Modeling***	***2 Core 1.5GHz CPU, 2GB RAM, 2GB disk space***	***Yes***	***Yes***
HP Fortify Static Code Analyzer	***Commercial***	***Used for static code analysis and to perform secure coding quality checks***	***2 Core 1GHz CPU, 8GB RAM, 150 GB Disk Space***	***Yes***	***No***
HP WebInspect	***Commercial***	***Used for dynamic application security testing of the code***	***2 Core CPU 2GHz, 4GB RAM, 40 GB Disk Space***	***Yes***	***No***
IBM Data Studio	***Commercial***	***Used for querying database***	***Single Core 1.2 GHz CPU, 1GB RAM, 1.8GB disk space***	***Yes***	***No***
IBM DB2	***Commercial***	***Used as Database Engine***	***Single Core 1.8 GHz CPU, 512MB RAM, 30GB disk space***	***Yes***	***Yes***
IBM Performance Management Offering (Optim)	***Commercial***	***Used for Database Monitoring***	***Single Core 1.8 GHz CPU, 8 GB RAM, 2GB disk space***	***Yes***	***No***
IBM Datacap	***Commercial***	***Offers document capture and high-speed data extraction technology***	***Single Core 1.8 GHz CPU, 2GB RAM, 10GB disk space***	***Yes***	***Yes***
IBM Content Foundation (FileNet P8 Content Manager)	***Commercial***	***Used as Enterprise Content Management system for document management***	***Single Core 1.8 GHz CPU, 2GB RAM, 10GB disk space***	***Yes***	***Yes***
IBM HTTP Server	***Commercial***	***Used as Web Server***	***Single Core 1.8 GHz CPU, 1GB RAM, 1GB disk space***	***Yes***	***Yes***
IBM Message Queue (MQ)	***Commercial***	***Used for Message Queue***	***Single Core 1.2 GHz CPU, 3GB RAM, 550MB disk space***	***Yes***	***Yes***

Software	License Type	Function	Minimum Hardware Requirements	Compatible with existing Nevada Computing Resources (Yes/No)	Currently exists in DWSS (Yes/No)
IBM Application Performance Management (APM)	*Commercial*	*Used for performance monitoring of Application and Web Servers*	*Single Core 1.2 GHz CPU, 55MB RAM, 320MB disk space*	*Yes*	*Yes*
IBM Tivoli Workload Scheduler	*Commercial*	*Used as Scheduling tool to automate and manage batch workloads*	*Single Core 1.2 GHz CPU, 1GB RAM, 1GB disk space*	*Yes*	*No*
IBM WebSphere Application Server (WAS) ND	*Commercial*	*Used as Application Server runtime*	*Single Core 1.8 GHz CPU, 1GB RAM, 2GB disk space*	*Yes*	*Yes*
IBM WebSphere Deployment Manager	*Commercial*	*Used as Deployment manager for WebSphere nodes*	*Single Core 1.8 GHz CPU, 1GB RAM, 2GB disk space*	*Yes*	*Yes*
Jama Contour	*Commercial*	*Used for Managing Requirements and Traceability*	*4 Core 1.5GHz CPU, 12 GB RAM, 50GB disk space*	*Yes*	*No*
Javadoc	*Commercial*	*Used for code documentation utility*	*Single Core CPU 1GHz, 256MB RAM, 1GB disk space*	*Yes*	*Yes*
Jenkins	*Open-source*	*Used as Build engine for Continuous Integration*	*Single Core 1GHz CPU, 256Mb RAM, 4GB disk space*	*Yes*	*Yes*
Apache JMeter	*Open-source*	*Used as Performance Testing Tool*	*Single Core 1.5GHz CPU, 4GB RAM, 4GB disk space*	*Yes*	*Yes*
JUnit	*Open-source*	*Used as Unit Testing utility*	*Single Core CPU 1 GHz, 256MB RAM, 1GB disk space*	*Yes*	*Yes*
Liquibase	*Open-source*	*Used for managing Database Changes and Deployments*	*Single Core 1.5GHz CPU, 4GB RAM, 4GB disk space*	*Yes*	*No*
Microsoft Office	*Commercial*	*Used to create documentation*	*Single Core 1GHz CPU, 1GB RAM, 3GB Disk Space*	*Yes*	*Yes*
Microsoft Project	*Commercial*	*Used to support project planning*	*Single Core 1GHz CPU, 1GB*	*Yes*	*Yes*

Software	*License Type*	*Function*	*Minimum Hardware Requirements*	*Compatible with existing Nevada Computing Resources (Yes/No)*	*Currently exists in DWSS (Yes/No)*
			RAM, 3GB Disk Space		
Microsoft Visio	*Commercial*	*Used to support documentation of process flows*	*Single Core 1 GHz CPU, 1GB RAM, 3GB Disk Space*	*Yes*	*Yes*
Perforce Helix	*Commercial*	*Used for managing Code*	*Single Core 1.5GHz CPU, 1.5GB RAM, 10GB disk space*	*Yes*	*Yes*
Project Management Center (PMC)	*Commercial*	*Used as Project Management Tool*	*Single Core 1GHz CPU, 512MB RAM, 100MB disk space*	*Yes*	*No*
PuTTY	*Open-source*	*Used as Telnet/ssh utility*	*Single Core CPU 1 GHz, 32MB RAM, 50MB disk space*	*Yes*	*Yes*
SAP Business Objects	*Commercial*	*Used for generating reports*	*4 cores 1.5GHz, 8 GB RAM, 200 GB disk space*	*Yes*	*Yes*
SAP Data Services EDGE	*Commercial*	*Used for Extract, Transform, Load (ETL) Operations*	*4 cores 1.5 GHz, 16 GB RAM, 200 GB disk space*	*Yes*	*Yes*
Selenium	*Open-source*	*Used for Functional, and Regression Testing*	*Single Core 1 GHz CPU, 4GB RAM, 4GB disk space*	*Yes*	*No*
SmartBear SOAP UI	*Open-Source*	*Used for testing Web Services*	*Single Core 1Ghz CPU, 512MB RAM, 200MB Disk Space*	*Yes*	*Yes*
SonarQube	*Open-source*	*Used as Code Quality Analysis Utility*	*Single Core 1.5GHz CPU, 4GB RAM, 5GB disk space*	*Yes*	*No*
SmartCOMM (ThunderHead)	*Commercial*	*Used to design, develop, print correspondence*	*1 Core 1GHz CPU, 2GB RAM, 16GB Disk space*	*Yes*	*Yes*
Total Validator Basic	*Commercial*	*Used for ADA Compliance Testing*	*1 Core 1GHz CPU, 2GB RAM, 16GB Disk*	*Yes*	*No*
USPS Address Validation	*Commercial*	*Used for validating addresses*	*Single Core 1.4GHz CPU,128MB*	*Yes*	*No*

Software	*License Type*	*Function*	*Minimum Hardware Requirements*	*Compatible with existing Nevada Computing Resources (Yes/No)*	*Currently exists in DWSS (Yes/No)*
			RAM, 3.5GB Disk Space		
WebSurveyor	***Open-source***	***Online Survey Software***	***Single Core 1GHz CPU, 512MB RAM, 1GB disk space***	***Yes***	***No***

Table 5-53. List of Proposed Tools.

5.14.2 Costs and Training

5.14 PROJECT SOFTWARE TOOLS	
5.14.2	Costs and training associated with the project software tools identified shall be included in Attachment I, Project Costs.

Our proposed project software tools includes widely used tools in the market to build similar complex systems. We have included costs for project tools in Attachment I – Project Costs.

We will work with DWSS to obtain relevant training materials from software vendors (installation guides, user manuals). Deloitte will not be conducting technical training of tools from third party vendors. However, per your requirement, we will collaboratively work with DWSS to familiarize your staff with the proposed tools and processes for performance monitoring, regression and performance test. We have included our costs associated with the training of these tools in Attachment I - Project Costs.

Attachment H: Proposed Staff Resumes

Section VIII

11.2.2.8 Section VIII – Attachment H – Proposed Staff Resume	
A.	Vendors shall include all proposed staff resumes per Section 5.5, Vendor Staff Resumes in this section.
B.	This section shall also include any subcontractor proposed staff resumes, if applicable.

The following detailed resumes are provided for each proposed staff. For the individual projects, to the best of our ability, we have provided direct client contacts. In a limited few instances, due to client confidentiality that restricts us from providing direct personal information, we have provided Rakesh Duttagupta's contact information who would be able to discuss the project with you. We would respect similar wishes of DWSS as a client, should you request it.

Leadership	
Name	***Proposed Role***
Rakesh Duttagupta	***Project Executive***
John White	***Advisor***
Margot Bean	***Federal Certification Lead***
Keith Ketcher	***Quality Assurance***
Michael Leszczynski	***Project Management Office***

Key Staff	
Name	***Proposed Role***
Kent Wheeler	***Project Manager***
Rajiv Patel	***Technical Lead***
Jayavelu Arumugam	***Implementation Lead***

Individual Team Members	
Name	***Proposed Role***
Kim King	***System & Integration Testing***
Robert Holguin	***System & Integration Testing***
Santosh Padakanti	***Case Initiation***
Mike Moreno	***Training/Rollout***
Pratik Dutta	***Forms & Reporting***
Natalie Martella	***Case Management***
Arun Elangovan	***Interstate***
Bianca Blanco	***Training/Rollout***
Arun Gnanavel	***Batch & Interfaces***
Amit Aphale	***Customer Service***
Selvam Asaithambi	***Release Engineering***
Dildar Marhas	***Technical Architect***
Jennifer Hdairis	***Forms & Reporting***
Santh Narayanan	***Batch & Interfaces***
Santosh Solapurkar	***Performance/Automated Testing***
Satish Mummalaneni	***Data Conversion***
Surya Kandula	***Data Conversion***
Kayla Wells	***Customer Service***
Vicky Tillman	***Enforcement, UAT Support***
Sandy Mulligan	***Financial Management, UAT Support***
Sadruddin Ali	***Testing Lead***
Nate Holler	***Locate***
Bill Strate	***Intake, Establishment, UAT Support***

Leadership

Rakesh Duttagupta, Project Executive

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Rakesh Duttagupta***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Principal***	
# of Years in Classification:	***10***	**# of Years with Firm:**	***16***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Rakesh is a Principal with over 16 years of management consulting and systems integration experience for which 10 years have been dedicated in Health and Human Services. He has provided project management services for a number of significant eligibility automation projects in the State of California, Texas, and Nevada. With project experiences in all phases of system development that is relevant to the NCSEA project, Rakesh understands the significance of service quality as well as project communication and transparency. His experience managing large scale public sector projects involving multiple agency stakeholders and system interfaces will benefit him in his proposed role as the Project Executive. In addition to his systems implementation background, Rakesh has extensive experience in business process redesign, change management, and the facilitation of strategic visioning exercises. He has worked with numerous clients to establish a framework for guiding their organizations through business process changes and technology adoption. Rakesh has always committed to provide project transparency to project stakeholders through the utilization of formal meetings and informal touch points. As one of Deloitte Consulting's eminent professionals in the implementation and adoption of

health and human services systems and processes, Rakesh also brings thought leadership and Nevada HHS understanding that directly benefits Nevada with from day one.

As a Project Management Institute (PMI) certified Project Management Professional (PMP), Rakesh's management approach is based on applying controls and quality assurance techniques to effectively manage large system implementation engagements. He has performed as Project Executive, Project Manager, Production Manager, and Functional Manager on several large scale implementation systems throughout his career.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Wyoming WES project	***07/2016 – Present***
Company Name	***State of Wyoming, Wyoming Department of Health (WDH)***
Company Location	***Cheyenne, WY***
Role on Project	***Project Executive***
Software/Hardware Used	***Java/J2EE, Oracle Database, IBM WAS/Jrules, JBoss Application Server, RedHat Workflow Management tool (BRMS), Mulesoft Mule ESB (Enterprise Service Bus), Pentaho Reporting and Business Analytics , HP Exstream, Control-M scheduling software***

Project Description

Wyoming Eligibility System (WES) is a web-based Integrated Eligibility solution which administers benefits for the Medicaid, and HMK (CHIP) programs in Wyoming. During DDI, Deloitte successfully transitioned operations and maintenance of WES Medicaid/HMK from Northrop Grumman. Deloitte is responsible for Operations and Maintenance (O&M) services for the Wyoming Eligibility System (WES), resolving defect transitioned from incumbent vendor, Implement outstanding functionality required to meet base business and system requirements, Reduced reliance on monthly batch processes for continued issuance of coverage, improve performance, simplify reporting, and support scalability for additional programs integrated with Medicaid and CHIP in the WES.

Role Description

As the Project Executive, Rakesh's responsibilities were to:

- ***Managed the overall operations of the project while fostering open communication channels across all stakeholders.***
- ***Managed communications, including status of milestones, between Deloitte team and client.***
- ***Facilitated resource planning and allocation of staff throughout the software development lifecycle.***
- ***Manage and track progress throughout all phases of the project, including requirements, design, development, testing, and implementation.***
- ***Plan and participate in Steering Team meetings with senior leadership including meetings with the stakeholders.***
- ***Managed risk and issues***
- ***Managed the overall project direction per the client's requirements***

Nevada HCR-EE project	***07/2012 – 07/2017***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Project Executive***
Software/Hardware Used	***zOS, AIX, CICS, DB2, MQ, WebSphere Application Server, WebSphere Portal Server, WebSphere Process Server, Business Process Manager, Business Rule Management System, FileNet, Thunderhead, Rational Application Developer, IBM Integration Developer***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
As the Project Manager, Rakesh's responsibilities were to: • ***Managed the day-to-day operations of the project while fostering open communication channels across all stakeholders.*** • ***Managed communications, including status of milestones, between Deloitte team and DWSS Project Manager.*** • ***Facilitated resource planning and allocation of staff throughout the software development lifecycle.*** • ***Managed and track progress throughout all phases of the project, including requirements, design, development, testing, and implementation.*** • ***Planned and participated in Steering Team meetings with DWSS senior leadership including meetings with the HHS Director and the Governor's office.***	

Nevada SSBM project	***06/2014 – 12/2015***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Project Executive***
Software/Hardware Used	***zOS, AIX, CICS, DB2, MQ, WebSphere Application Server, WebSphere Portal Server, WebSphere Process Server, Business Process Manager, Business Rule Management System, FileNet, Thunderhead***
Project Description	
For the Supported State-Based Marketplace (SSBM) project , the State needed a solution to process eligibility and enrollment for medical benefits applications referred from the federal hub and also send denied applications to the federal hub. The solution also provided the client's eligibility for non-ESI MEC. The client received approximately 62,000 referrals from SSBM and also referred approximate 155,000 applications to SSBM with the help of an integrated eligibility system that serves core public assistance programs including medical assistance, cash assistance, and food benefits.	
Role Description	
As the Project Executive, Rakesh's responsibilities were to: • ***Manage communications, including status of milestones, between Deloitte team and DWSS Senior Leadership.*** • ***Facilitate resource planning and allocation of staff throughout the software development lifecycle.*** • ***Manage progress throughout all phases of the project, including requirements, design, development, testing, implementation, and M&O.***	

Nevada SSBM project	***06/2014 – 12/2015***

- ***Plan and participate in Steering Team meetings with DWSS senior leadership including meetings with the HHS Director and the Governor's office.***

Access Nevada Enhancement project	***05/2011 – 11/2011***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Project Manager***
Software/Hardware Used	***zOS, AIX, CICS, DB2, MQ, WebSphere Application Server, WebSphere Portal Server, WebSphere Process Server, Business Process Manager, Business Rule Management System, FileNet, Thunderhead, Rational Application Developer, IBM Integration Developer***

Project Description

For the Access Nevada Enhancement project, Deloitte assisted the State in designing, developing, and implementing enhancements to the Access Nevada and AMPs applications. The scope of work included: modifying Access Nevada to display information in Spanish by changing field labels and variables on 45 java web pages; modifying Access Nevada to provide two ADA-compliant access features for handicapped individuals to the electronic application (i.e., mandatory field highlighting and color contrast on fields); modifying Access Nevada to enhance self-service, including some security login modifications (i.e., modifying application security to reinstate application access for expired user logins and enhanced online query by the client of their application benefit status based on the data fields available in the VRU extract); attaching collateral documentation electronically, which provided the ability for clients to attach supporting scanned documents to their Access NV electronic application; and converting dependent care expense (DCEX) and support deemed expense (SUDE) HATS macros to Java web services.

Role Description

As the Project Manager, Rakesh's responsibilities were to:

- ***Manage communications, including status of milestones, between Deloitte team and DWSS Project Manager.***
- ***Facilitate resource planning and allocation of staff throughout the software development lifecycle.***
- ***Manage and track progress throughout all phases of the project, including requirements, design, development, testing, and implementation.***
- ***Plan and participate in Steering Team meetings with DWSS senior leadership.***

Texas On-Track System (TOTS) project	***04/2011 – 11/2011***
Company Name	***The University of Texas Health Science Center at Houston***
Company Location	***Houston, TX***
Role on Project	***Project Manager***
Software/Hardware Used	***N/A***

Project Description

Texas' early childhood education and care services are provided through a mixed delivery system, which includes public, private, faith-based, non-profit, for-profit and subsidized preschools, prekindergarten programs, child care centers, federal Head Start programs and home-based programs. The On-Track System (TOTS) project established the business and technical requirements necessary to manage, link, analyze, and report on health and early childhood education and care data.

Role Description

As the Project Manager, Rakesh's responsibilities were to:

- ***Serve as the primary point of contact for the TOTS Team.***

Texas On-Track System (TOTS) project	***04/2011 – 11/2011***

- ***Review and approve project processes for the engagement lifecycle.***
- ***Ensure stakeholder participation and executive buy in is maintained throughout the engagement.***
- ***Prepare and conduct workshops, interviews, and requirement gathering sessions.***

Nevada AMPS project	***01/2010 – 11/2011***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Project Manager***
Software/Hardware Used	***Windows, Java/JEE, SQL, Hibernate, Struts, jQuery, JSR 286, XML, WebSphere Portal Server, WebSphere Process Server, WebSphere Service Registry and Repository, FileNet, HATS, Rational Application Developer, WebSphere Integration Developer, DB2***

Project Description

Deloitte assisted the State in designing, developing, and implementing the Application Modernization and Productivity Services (AMPs) project. The scope of work included: implementing a web portal to present the caseworker with a single consolidated access to multiple systems; implementing a workflow to establish a predefined sequence of operations for imaged documents and data; implementing a document imaging system (DIS) to reduce physical storage space for paper documentation; and integrating the portal with ACCESS Nevada, NOMADS, DIS, and PRISM.

Role Description

As the Project Manager, Rakesh's responsibilities were to:

- ***Oversee and promote coordination and collaboration amongst all stakeholders.***
- ***Manage and actively participate in requirement and joint application design sessions.***
- ***Plan for, manage, and track all phases of the software development lifecycle from requirements through go-live and warranty periods.***
- ***Plan and participate in Steering Team meetings with DWSS senior leadership.***

California ISAWS project	***10/2008 – 08/2010***
Company Name	***State of California, Office of System Integration, Department of Health and Human Services***
Company Location	***Sacramento, CA***
Role on Project	***Project Manager***
Software/Hardware Used	***Unisys Mapper, Oracle, PowerBuilder, Tuxedo, Citrix, COBOL, C++, Windows, Windows NT, Windows Server 2003***

Project Description

The Interim State Wide Automated System (ISAWS) began as NAPAS in 1991. Deloitte Consulting developed NAPAS as an online, interactive system to provide public assistance benefits. NAPAS was selected as the pilot for statewide implementation and was renamed ISAWS in January 1994. Since the completion of Phase II implementation in 1998, Deloitte provided maintenance and operation support to all 35 ISAWS Counties until 2010.

Role Description

As the Project Manager, Rakesh's responsibilities were to:

- ***Work closely with the State and the County Consortium team to ensure the smooth operation of the ISAWS system which includes application development, system support, help desk operation, implementation support, and change management.***
- ***Serve as primary point of contact with the State and other project stakeholders.***

California ISAWS project	***10/2008 – 08/2010***

- ***Provide leadership for the ISAWS project and the final migration of the ISAWS counties to a different solution.***

California CWS Maintenance and Operations project	***03/2007 – 09/2007***
Company Name	***State of California, Children and Family Services, Office of System Integration***
Company Location	***Sacramento, CA***
Role on Project	***Quality Assurance & Test Manager, Deputy Project Manager***
Software/Hardware Used	***Client server, DB2, ASP.Net 3.0, Oracle 9i, ASP Webparts, Microsoft AJAX, Windows Workflow Foundation, Silverlight 2.0***

Project Description

The State of California was interested in providing tools and information to the counties that would maximize the effectiveness of child welfare resources and allow greater focus on accomplishing the mission of CWS through a singular system with consistent interfaces and consistent performance.

Role Description

As the Quality Assurance and Test Manager, Rakesh's responsibilities were to:

- ***Collaborate with the IBM Development / Maintenance and Operations team to ensure the quality of all deliverables for the State of California client and seamless testing of all releases and other application changes.***
- ***Develop the overall strategy and communication of the Quality Assurance (QA) and Test team.***

California CalWIN project	***09/2002 – 02/2007***
Company Name	***State of California, Health and Human Services***
Company Location	***Sacramento, CA***
Role on Project	***Conversion Manager and Production Manager***
Software/Hardware Used	***Client Server, Tuxedo, Oracle, and Power Builder, Tuxedo, MS SQL Server, Rational Suite, Unix, Windows Server 2000***

Project Description

This California Work Opportunity and Responsibility to Kids Information Network (CalWIN) project dealt with the implementation of a client-based, online, real-time update system that supports the major processing functions of the Welfare Client Data System (WCDS) Consortium – an association of 18 California counties that administer services for over 40% of the state's public assistance caseload.

Role Description

As the Conversion and Production Manager, Rakesh's responsibilities were to:

- ***Work with his functional area to identify and address data purification issues related to data handling and exceptions during the automated conversion testing.***
- ***Develop the conversion strategy and manage the design and development of the conversion software to automate the conversion of data from multiple source systems to the current application.***
- ***Lead a team of ten resources through an aggressive timeline to achieve the on-time delivery of functional requirements and detail functional design for 18 counties during the client's conversion process of legacy data to CalWIN.***
- ***Oversee the implementation of all 18 counties with excellent conversion rates and results.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Arizona State University***		
City, State	***Tempe, AZ***		
Degree	***Master of Business Administration (MBA)*** ***Master of Science and Information Management (MSIM)***	***Completion Date***	***05/2002*** ***05/2002***

Institution Name	***Arizona State University***		
City, State	***Tempe, AZ***		
Degree	***Bachelor of Science, Finance*** ***Bachelor of Science, Computer Information Systems***	***Completion Date***	***05/2000*** ***05/2000***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 08/2005***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***COBOL, VBasic, C++, Java, SQL, PowerBuilder, WebSphere***
Hardware	***PC Hardware, Windows NT, Windows Server 2003, Windows Server 2000, Unix, FileNet***
Software	***SAS Miner , Citrix, Rational Suite***
Tools	***Microsoft Office Suite: Excel, Access, Project, Power Point, Word***
Databases	***Tuxedo, Oracle, MS Access, MS SQL Server***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Wyoming Department of Health, Division of Healthcare Financing***
Contact Name	***Jan Stall, Eligibility & Operations Administrator***
Phone Number	***(307) 777-5472***
Fax Number	***(307) 777-6964***
Email Address	***jan.stall@wyo.gov***

Client Reference 2

Company Name	***Nevada Division of Welfare and Supportive Services***
Contact Name	***Steve Fisher, AMPS/Access NV Project Manager***
Phone Number	***(775) 684-0549***
Fax Number	***(775) 684-0712***
Email Address	***ShFisher@dwss.nv.gov***

Client Reference 3

Company Name	***County of Sacramento, Dept. of Human Assistance***
Contact Name	***Dan Kalamaras, Ex CalWIN Deputy Project Manager***
Phone Number	***(916) 875-3793***
Fax Number	***(916) 875-3789***
Email Address	***KalamarasDan@saccounty.net***

John White, Advisor

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***John White***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Principal***	
# of Years in Classification:	***9***	**# of Years with Firm:**	***11***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

John has over 17 years of experience with system implementation projects for CSE programs and other HHS clients. He has 25 years of experience assisting public sector clients to define and achieve their organizational visions through IT enablement and program modernization. He has extensive experience with large-scale systems projects, managing change across and within organizations while maintaining high quality, and developing and implementing change management plans. John has also led the vision for the technology solutions for the Pennsylvania CSE program to achieve and maintain its status as the top performer in the country. Those solutions include business intelligence, data warehousing, performance management improvement modules, automated case closure, CSE employer portal, mobile solution, e-application and the Pennsylvania CSE System (PACSES) home page. John is currently the executive advisor for the Oregon Child Support Origin project and leads Deloitte's national child support practice.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***10/2015 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Executive Advisor***
Software/Hardware Used	***IBM WebSphere, IBM Tivoli Workload Scheduler, Java, IBM Jazz Suite, Atlassian Jira, TOAD, Enterprise Content Manager, Open Text Extreme, Microsoft Project Plan***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Provided overall guidance and governance including leadership, staff management, project scheduling, stakeholder management, financial management, and overall scope of the project. Worked closely with the state leadership team on project startup, staffing, facilities management, and governance of the project.	

Pennsylvania PACSES project	***06/2006 – Present***
Company Name	***Commonwealth of Pennsylvania***
Company Location	***Harrisburg, PA***
Role on Project	***Project Partner / Project Manager***
Software/Hardware Used	***.Net, Oracle DBMS, Unisys DMS and RDMS, COBOL, Unisys Assembler, Cognos, Adobe LiveCycle, Informatica, EMC Documentum, SQL Server, KM Sys Equate, WebMethods, SSRS – SQL Server Reporting Services***
Project Description	
The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.	
Role Description	
As Project Partner, John is responsible for the overall management and operations of PACSES, including overseeing all areas of the application. He functions as the liaison for both the Commonwealth Application Manager and the Commonwealth Financial Program Manager, and manages compliance with the contract, established the strategy for meeting contractual goals, and led the team in those efforts. John also served as the Project Manager overseeing all aspects of the delivery of the PACSES project including application services and support, application maintenance and modification, architecture and infrastructure, and the innovations teams. He led the vision for the technology solutions for Pennsylvania to become the top performing child support state in the country by providing advice and leadership on nationally recognized performance management tools and techniques. Includes business intelligence and	

Pennsylvania PACSES project	***06/2006 – Present***
data warehousing, development of performance management improvement modules, automated case closure, child support employer portal, the PACSES home page, mobile solution, and e-application.	

Massachusetts COMETS HD project	***04/2008 – 04/2015***
Company Name	***Commonwealth of Massachusetts, Department of Revenue, Bureau of Child Support Enforcement***
Company Location	***Boston, MA***
Role on Project	***Advisor***
Software/Hardware Used	***Industry Print BPM , MS Project***
Project Description	
The Deloitte team provided advisory services to Bureau of Child Support Enforcement which included the development of an IT Technology roadmap, gathering requirements and drafting an RFR, and managing the project management office of COMETS HD, the state's child support enforcement system with a total case load of 217,000.	
Role Description	
As Advisor, John was responsible for the oversight and advisory services supporting the Commonwealth's efforts to implement their COMETS HD system. He provided advisory and oversight services in Massachusetts from the first engagement, the IT Technology Roadmap project at the Bureau of Child Support, to assess their supporting technology for their child support program and develop a plan to successfully migrate from their existing technology to a more flexible, scalable, and maintainable technology platform. John's role included oversight, strategic direction, and technology advisory services for the project, which included working with key stakeholders to help define their technology direction toward incremental renewal of their child support system. The technology roadmap project led to the overall incremental replacement of the COMETS and COMETS FM systems.	

Indiana INvest project	***07/2009 – 11/2015***
Company Name	***Indiana Department of Child Services, Child Support Bureau***
Company Location	***Indianapolis, IN***
Role on Project	***Advisor***
Software/Hardware Used	***Industry Print BPM , MS Project***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
As Advisor, John was responsible for the oversight and advisory services associated with the business process redesign project. John's role entailed oversight, strategic direction, and technology advisory services on the Indiana project, including working with key stakeholders to define their technology direction toward incremental renewal of their child support system (INvest).	

MN CSED Business Process Assessment project	***07/2008 – 03/2009***
Company Name	***Minnesota Department of Human Services, Child Support Enforcement Division***
Company Location	***St. Paul MN***
Role on Project	***Advisor/Technical Strategy Lead***
Software/Hardware Used	***Industry Print BPM , MS Project***
Project Description	
The Deloitte team of approximately 10 people was responsible for the execution of the business process assessment over the course of nine months.	
Role Description	
As Advisor, John was responsible for the oversight and advisory services associated with the business process redesign project at the Department of Human Services Child Support Enforcement Division. He provided leadership and input to the development of the "to be" processes by providing insight on national leading practices. John's role was oversight, tactical direction, and technology strategy advisor for the project, which included working with key stakeholders to help define their technology direction toward incremental restoration of their child support system.	

Ohio Support Enforcement Tracking System project	***06/2001– 01/2006***
Company Name	***State of Ohio, Ohio Job and Family Services Agency, Office of Child Support Enforcement***
Company Location	***Columbus, OH***
Role on Project	***Project Director***
Software/Hardware Used	***JAVA, IBM DB2, COBOL MVS, Cognos, Oracle, Informatica, Postal Soft Verification, Finalist***
Project Description	
This was a $60 million project to design, develop, maintain, and operate the statewide child support system. The Support Enforcement Tracking System has over 900,000 cases, 88 counties, has collected over $1 billion dollars in child support, and distributes over $1 million dollars every night in child support payments.	
Role Description	
As Project Director, John led a team of 150 consultants in the implementation of over 30 software releases to the statewide child support system. He developed and implemented the risk management process throughout the Office of Child Support and Management Information Systems and designed and orchestrated the implementation of the State of Ohio's release management methodology, which has been adopted as a State of Ohio ODJFS software process. John assisted development and design groups to implement revised design documents "to be" integrated with system development standards and led a team responsible for the development, training, and implementation of a structured business requirements gathering process. ***John led the development of business functional requirements documentation, developed standards for conducting JAD sessions, formulated document templates, and managed training of state business subject matter experts. He successfully helped the State of Ohio avoid $50 million dollars in federal sanctions by managing the FSA88 and PRWORA federal Certification, then led the development of the federal certification team to successfully respond and demonstrate the system compliance to the federal audit review team. John was responsible for financial accountability of the project including revenue management, invoice management, change control procedures, and deliverable management. He was also responsible for project status reporting, risk management, issue management, metric based reporting, and financial management of the project.***	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Maine***		
City, State	***Orono, ME***		
Degree	***Bachelor of Science, Management Information Systems and Marketing***	***Completion Date***	***05/1991***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 03/2005***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Java, SQL, COBOL, SAS, WebSphere MQ***
Hardware	***IBM Mainframe z/OS, Windows, Unix***
Software	***Rational Suite, Eclipse***
Tools	***Microsoft Suite, MS Project Server and Desktop***
Databases	***DB2, IMS DB, Oracle, Teradata, SQL Server***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Pennsylvania Department of Human Services , Bureau of Child Support Enforcement***
Contact Name	***Bob Patrick, IVD Director***
Phone Number	***(717) 514-7696***
Fax Number	***(717) 705-5197***
Email Address	***rpatrick@pa.gov***

Client Reference 2

Company Name	***Massachusetts Department of Revenue, Child Support Enforcement Division***
Contact Name	***Michele Cristello, Deputy Commissioner***
Phone Number	***(617) 626-4042***
Fax Number	***N/A***
Email Address	***cristellom@dor.state.ma.us***

Client Reference 3

Company Name	***Ohio Department of Job and Family Services,*** ***Division of Child Support Enforcement Systems, Bureau of Information Systems***
Contact Name	***Sylvan Wilson, Assistant Director***
Phone Number	***(614) 466-2303***
Fax Number	***N/A***
Email Address	***Sylvan.wilson@jfs.ohio.gov***

Margot Bean, Federal Certification Lead

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Margot Bean***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Managing Director***	
# of Years in Classification:	***1***	**# of Years with Firm:**	***8***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Margot Bean is a Managing Director in Deloitte's Public Sector Practice, focusing on helping state and tribal governments develop and maintain high performing child support programs that are responsive to customer needs and compliant with federal laws, regulations and reporting requirements. She has over 30 years of experience in the child support program.

Prior to coming to Deloitte, Margot served as the Commissioner of the federal Office of Child Support Enforcement in the Administration for Children and Families, within the U.S. Department of Health and Human Services where she oversaw numerous technology solutions designed to enhance service delivery, including reviewing and approving RFPs, and certifying California's automated child support system (CA CSE).

Margot's areas of expertise include performance improvement, federal requirements, program management, and user requirements. She is experienced in the federal certification of CSE systems, recently as the federal certification lead in the Oregon Origin project. She spent significant time as the IV-D Director in both New York State and Guam on CSE replacement efforts including requirements, conversion, and federal certification, providing the translation between child support business needs and system development.

As a past president of the Eastern Regional Interstate Child Support Association, she currently serves on the Honorary Board. Margot has been an advisor to the Western Interstate Child Support Enforcement Council for over seven years. She also is a National Child Support Enforcement Association past president, Honorary Life member and current Board member. She is a non-practicing attorney licensed in the Territory of Guam and New York State.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***10/2015 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Federal Certification/QA Lead and Advisor***
Software/Hardware Used	***Microsoft Suite, IndustryPrint, SharePoint***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
In her various roles on the project, Margot is responsible for advising the quality assurance team and reviewing functional design deliverables for federal certification compliance. In this role, she reviewed over 1300 system requirements and design documents for federal certification compliance. She also advises the ongoing federal certification activities including transfer of knowledge, and the creation of the federal certification questionnaire and federal visit materials. Margot provides ongoing advice to the Deloitte and Oregon team members on issues related to each CSE module and the federal expectations and interactions.	

Pennsylvania PACSES project	***08/2010 – Present***
Company Name	***Commonwealth of Pennsylvania, Department of Public Welfare, Bureau of Child Support Enforcement***
Company Location	***Harrisburg, PA***
Role on Project	***Subject Matter Advisor***
Software/Hardware Used	***Microsoft Suite, SharePoint***
Project Description	
The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.	

Pennsylvania PACSES project	***08/2010 – Present***
Role Description	
Margot serves as subject matter advisor on the PACSES, with recent focus on the predictive analytics efforts, which has led to improvement in Pennsylvania's already outstanding federal performance. She also provides child support insight to the IV-D Director about leading practices on a regular basis.	

Indiana INvest project	***07/2009 – 11/2015***
Company Name	***Indiana Division of Child Services, Child Support Bureau***
Company Location	***Indianapolis, IN***
Role on Project	***Subject Matter Advisor***
Software/Hardware Used	***Microsoft Suite, IndustryPrint©, SharePoint***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
Margot served as a child support processes subject matter advisor in gap analysis and To-Be strategy sessions bringing her perspective and knowledge of national leading practices and trends. She also led the Deloitte support of the Indiana Feasibility Study development, and served as quality review of the functional child support system requirements development for Indiana's system replacement project, INvest. She served as an advisor relating to project management, federal requirements, and federal certification.	

Massachusetts COMETS HD project	***12/2009 – 01/2016***
Company Name	***Massachusetts Department of Revenue Child Support Enforcement Division***
Company Location	***Boston, MA***
Role on Project	***Subject Matter Expert***
Software/Hardware Used	***Microsoft Suite, IndustryPrint, SharePoint***
Project Description	
The Deloitte team provided advisory services to Bureau of Child Support Enforcement which included the development of an IT Technology roadmap, gathering requirements and drafting an RFR, and managing the project management office of COMETS HD, the state's child support enforcement system with a total case load of 217,000.	
Role Description	
Margot served as a child support system requirements subject matter adviser on the project where Deloitte developed an RFR for the state CSE agency to procure a vendor to replace their automated system. She also served on an ad hoc basis as an advisor relating to project management and federal requirements in Deloitte's PMO. The PMO supported COMETS HD, DOR's automated system replacement project.	

OCSE Data Analytics and Technical Support project	***10/2012 – 06/2013***
Company Name	***Administration for Children and Families (ACF), Office of Child Support Enforcement Division of Planning, Research and Evaluation(DPRE)***
Company Location	***Washington, DC***
Role on Project	***Project Director***
Software/Hardware Used	***Microsoft Suite, SharePoint***
Project Description	
The federal Office of Child Support Enforcement (OCSE) partners with federal, state, tribal, local governments, and others to promote parental responsibility so that children receive reliable support from both of their parents. In fiscal year 2013, the program served 16 million children and collected $28 billion nationwide. This project involved an analysis of the data OCSE collects from the states, territories, and tribes to suggest potential uses of the data, provide conceptual dashboards, and provided further advanced analytics suggestions. It also analyzed the Annual and Preliminary Reports to Congress process and content, and provided new templates.	
Role Description	
Margot served as project director and child support data and reports subject matter expert on a project that analyzed data from the states and tribes for use in dashboards and advanced analytics. Over an eight-month timeframe, she led a team that performed data source analysis, built conceptual dashboards, and provided conceptual advanced analytics solutions options. Margot managed executive relationships, provided insight into potential data use, and reviewed and edited major deliverables. In addition, she provided advice and oversight related to the federal reports.	

NYC OCSE Business Analysis and Operations, Enforcement and UDC project	***07/2010 – 09/2010*** ***05/2011 – 03/2012***
Company Name	***New York City Human Resources Administration, OCSE Business Analysis and Operations, Enforcement and UDC***
Company Location	***New York, NY***
Role on Project	***Project Manager***
Software/Hardware Used	***Microsoft Suite, IndustryPrint, SharePoint***
Project Description	
The New York City Child Support Agency services over 397,000 cases a year. Deloitte was engaged to conduct a business process analysis of a variety of areas that affected New York City child support performance, and options for improvement. This included the enforcement and undistributed collections processes, petition/summons court establishment process workflow, federal reporting analysis and improvement options, Train-the-Trainers, agency goals performance improvement, executive reports analysis, policy procedure approval workflow analysis, and predictive analytics.	
Role Description	
Margot was the project manager for three separate and unique business process improvement projects in the New York City OCSE, and also served as a child support subject matter advisor for the various threads. She provided child support subject matter advice on over 30 as is and to be sessions, and for the development of a predictive model. As a result of this project, NYC disbursed over $23 million of undistributed collections to families, reducing the amount of erroneously held money by more than 36%. Deloitte identified a federal reporting change that resulted in over $5 million in increased incentive funds to the state and to New York City. Using the concepts delivered in the agency goals performance improvement thread, NYC has improved support establishment from 70% to 80%.	

Federal Office of Child Support Enforcement	***06/2005 – 01/2009***
Company Name	***Department of Health and Human Services, Administration for Children and Families (ACF), Office of Child Support Enforcement (OCSE)***
Company Location	***Washington, DC***
Role on Project	***Federal Commissioner of OCSE***
Software/Hardware Used	***Microsoft Suite***
Project Description	
The federal Office of Child Support Enforcement (OCSE) partners with federal, state, tribal, local governments, and others to promote parental responsibility so that children receive reliable support from both of their parents as they grow to adulthood. The Federal Commissioner manages OCSE, which oversees the national CSE program by creating policy, auditing, monitoring, penalizing, and rewarding performance, providing technical assistance, creating and awarding grant opportunities, and overseeing the state and tribal system automation efforts.	
Role Description	
Margot served as the Commissioner of the federal OCSE, overseeing a program with a $4.5 billion budget. She provided oversight for the successful effort to certify the California Child Support Automation System (CS CSE) as meeting all federal requirements and as a single statewide system, resulting in the refund of penalties and the lifting of the spending cap, and oversaw the updating of the Federal Certification Guide. Margot also directed the auditing of state systems data reliability and created and implemented a national initiative to renew focus on the core mission of the program, resulting in an increase in national collections performance on two key child support performance measures for the first time in several years. She implemented an internal coordination council to ensure coordination of over 300 strategic and ongoing activities across ten divisions and ten regions, reducing duplication of effort and maximizing resources. She oversaw the expansion of the tribal child support enforcement program by improving internal processes, resulting in the expansion of the program to 31 comprehensive tribal programs and 11 start-up grants.	

New York Office of Temporary and Disability Assistance Center for Child Well-being	***09/1998 – 07/2005***
Company Name	***New York Office of Temporary and Disability Assistance, Center for Child Well-being***
Company Location	***Albany, NY***
Role on Project	***IV-D Director, Division of Child Support Enforcement***
Software/Hardware Used	***Microsoft Suite***
Project Description	
The New York Office of Temporary and Disability Assistance Center for Child Well-being (Child Support Enforcement) services over 856,000 cases and currently collects over $1.7 billion in child support a year. The Center for Child Well-being monitors and provides technical assistance for the County administration of child support services. It also provides a number of centralized services for child support cases, including the SDU payment processing, call center, and FIDM.	
Role Description	
Margot served as IV-D CSE Director for four years and as a special assistant attorney for almost three years. In these roles, she focused on statewide performance improvement, developed and oversaw the RFP process for the Financial Institution Data Match, oversaw the re-procurement of the SDU and was actively involved in the successful certification of the New York State automated child support system by the federal government as meeting PRWORA requirements, avoiding substantial monetary penalties. She wrote the certification questionnaire and managed the federal review. Margot also oversaw automated system modernization and implementation efforts, which included a system redesign project involving a phased approach from a mainframe to an open system (Java), and an interface with the New York State Unified Court Management System.	

New York Office of Temporary and Disability Assistance Center for Child Well-being	***09/1998 – 07/2005***

Margot focused on county relationships and processes, along with central office improvements, resulting in increasing collections to over $1.4 billion dollars and increasing order establishment from 65% to 81%. She revamped medical support procedures, increasing the number of cases with medical support to 55% and obtaining coverage for over 72,000 previously uncovered children. During Margot's tenure as the IV-D CSE Director, collections increased 40%, order establishment increased from 65% to 81%.

Office of the Guam Attorney General, Family Division	***05/1991 – 06/1998***
Company Name	***Office of the Attorney General of Guam, Family Division***
Company Location	***Hagatna, Guam***
Role on Project	***IV-D Director (1995-1998), Assistant Attorney (1991-1995; 1980 - 1983)***
Software/Hardware Used	***Microsoft Suite***
Project Description	
Guam is a U.S. territory with a total IV-D caseload around 7,000 child support enforcement cases. During this timeframe, Guam embarked on the transfer of the Texas CSE automated system to Guam.	
Role Description	
Margot served as the IV-D CSE Director for the Territory of Guam, where she managed the successful transfer of the Texas child support system (TxCSES) to Guam, implementation, and federal certification. As part of the system development effort, she verified requirements, performed user acceptance tests, manually converted cases, and provided training to users. Margot managed the development of the certification material for the federal certification review, and led the territory's team during the OCSE in-person certification review of the system. The Guam system was federally certified before the Texas donor system. Prior to assuming the directorship, she handled child support cases as a government attorney, handled all intergovernmental cases, managed the APDU process, and served as the territory's subject matter advisor interfacing with the company developing the transfer system from Texas to Guam.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Lewis and Clark Northwestern School of Law***		
City, State	***Portland, OR***		
Degree	***Juris Doctor / Law Review***	***Completion Date***	***06/1979***

Institution Name	***William Smith College***		
City, State	***Geneva, New York***		
Degree	***Bachelor of Arts, Political Science***	***Completion Date***	***06/1975***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Completion Date: 03/2011***
- ***Licensed, non-practicing attorney in New York State (01/1980) and Guam (09/1980)***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***n/a***
Hardware	***n/a***
Software	***n/a***
Tools	***Microsoft Suite, IndustryPrint***
Databases	***SharePoint***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Indiana Child Support Bureau***
Contact Name	***Cynthia Longest, IV-D Director***
Phone Number	***(317) 233-4482***
Fax Number	***N/A***
Email Address	***Cynthia.Longest@dcs.IN.gov***

Client Reference 2

Company Name	***NYC Human Resources Administration, Office of Child Support Enforcement***
Contact Name	***Frances Pardus-Abadessa, Executive Deputy Commission***
Phone Number	***(929) 221-4587***
Fax Number	***N/A***
Email Address	***Ad9132@dfa.state.ny.us***

Client Reference 3

Company Name	***Federal Office of Child Support Enforcement***
Contact Name	***Donna Bonar, Deputy Commissioner***
Phone Number	***(202) 401-9271***
Fax Number	***N/A***
Email Address	***Donna.Bonar@acf.hhs.gov***

Keith Ketcher, Quality Assurance

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Keith Ketcher***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Principal***	
# of Years in Classification:	***13***	**# of Years with Firm:**	***1***

Information should include a brief summary of the proposed individual's professional experience.

Keith is a seasoned corporate executive with repeated examples of successful accomplishments leading large, complex, and note-worthy endeavors over his 25 year career. Most of Keith's career has been dedicated to State Health and Human Services clients, including 16 years serving child support enforcement clients. He successfully led portfolios in a management role – driving sales growth and repeatable delivery results – and led large teams in high pressure situations with aggressive deadlines during individual leadership roles. Keith derives professional success through servant-based leadership with his own team, establishing trust-based relationships with client leadership, executives, and sponsors, and through systematic planning, disciplined execution, and prioritization of efforts that align to critical objectives.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Idaho CSE Migration and Modernization project	***08/2016 – Present***
Company Name	***Idaho Department of Health and Welfare***
Company Location	***Boise, ID***
Role on Project	***Account Manager***
Software/Hardware Used	***Natural and Java programming languages, ADABAS and Oracle databases***
Project Description	
The Idaho Department of Health and Welfare embarked on a system modernization project for its Child Support Enforcement system in July 2016. The team has completed development and System Test and is in the midst of a phased production rollout that will conclude in November 2017.	
Role Description	
Account Manager with overall leadership for the Deloitte team.	

BreEZe	***10/2014 – 03/2016***
Company Name	***California Department of Consumer Affairs***
Company Location	***Sacramento, CA***
Role on Project	***Account Manager***
Software/Hardware Used	***MicroPact Versa software package implementation with Oracle database***
Project Description	
The BreEZe project began in 2010 and the final major release was completed in February 2016. This $47M project created a new online licensing and enforcement system for the Department of Consumer Affairs (DCA). BreEZe allows licensees and license applicants to do business with DCA electronically, and allows greater access for consumers to interact with DCA. BreEZe improves data quality, replaces old technology and brings DCA's services to the Web for customer self-service. BreEZe has been successfully deployed to 18 of California's Boards and Bureaus.	
Role Description	
Account Manager with overall leadership for the team and serving as primary point of contact for DCA executive leadership and control agencies.	

California EDR project	***08/2011 – 03/2016***
Company Name	***California Franchise Tax Board***
Company Location	***Sacramento, CA***
Role on Project	***Account Manager***
Software/Hardware Used	***IBM hardware running AIX LPARs with external storage. Generally, an IBM software stack – WebSphere app server, Initiate for MDM, DB2 database, DataStage for ETL, Pega Systems for Case Management and Workflow. Custom Java***
Project Description	
The Enterprise Data to Revenue (EDR) project began July 1, 2011 and concluded on December 31, 2016. EDR modernized the FTB enterprise operations and systems. This means more efficient operations throughout the department, better customer service, maximized transparency, and more revenue: about a billion dollars more annually by the end of the project. EDR also provides multiple self-service options for taxpayers via the MyFTB Account/Taxpayer Folder. As of August 2017, the project has delivered more than $3.7B of incremental revenue and is projected to deliver $1B annually ongoing.	
Role Description	
Account Manager with overall leadership for the team and serving as primary point of contact for FTB executive leadership.	

California CalHEERS project	***10/2012 – 10/2014***
Company Name	***California Department of Health Care Services, Covered California***
Company Location	***Sacramento, CA***
Role on Project	***Program Director***
Software/Hardware Used	***Complete Oracle stack of technical architecture, Weblogic, Exadata, Exalogic, OBIEE, ODI for ETL, Java app.***
Project Description	
The Affordable Care Act of 2010, known as federal health care reform, required states to establish Health Benefit Exchanges for individuals and small businesses to obtain affordable health care coverage. The California Healthcare Eligibility, Enrollment, and Retention System (CalHEERS) is an automated system that: • ***Serves as the consolidated system support for eligibility, enrollment, and retention for the California Health Benefit Exchange (also known as Covered California), Medi-Cal, and Healthy Families.*** • ***Streamlines resources from which individuals and small businesses will be able to research, compare, check their eligibility for, and purchase health coverage.*** ***The CalHEERS Project is a $400M+ initiative which began in June 2012, with the system going live to the public 15 months later on October 1, 2013. The base term of the project continued through the summer of 2017. The CalHEERS system development involved two project sponsors - Covered California and Department of Healthcare Services (DHCS). CalHEERS supports the maintenance, operations, and on-going business of Covered California. It is also one of the systems that support the maintenance, operations, and on-going business of DHCS. CalHEERS supports account creation, consumer application, eligibility rules, and health plan selection for insurance affordability programs. CalHEERS interfaces via the Electronic Health Information Transfer (eHIT) with the Statewide Automated Welfare Systems (SAWS) for Modified Adjusted Gross Income (MAGI) Medi-Cal eligibility, enrollment and reporting, and provides data for potential eligibility to other programs such as non-MAGI Medi-Cal, CalFresh, and California Work Opportunities and Responsibility for Kids (CalWORKS).***	
Role Description	
Keith served as Program Director, leading the team across all aspects of the program, including more than 500 personnel contributing from multiple delivery locations (Sacramento CA, Austin TX, multiple locations in India).	

California CSE project	***09/2001 – 06/2010***
Company Name	***California Department of Child Support Services***
Company Location	***Sacramento, CA***
Role on Project	***Application Development and M&O Lead***
Software/Hardware Used	***IBM stack, Java/J2EE, DB/2 database, ClearCase/ClearQuest***
Project Description	
The California Child Support Automation System (CCSAS) project began in July 2003 and concluded in June 2010. CCSAS allowed the California Department of Child Support Services to achieve the statewide transition of California's 51 county and regional child support agencies to the new single statewide child support automation system. Federal laws enacted in 1988 and 1996 required all states to put statewide child support systems in place and establish a single state location for processing all child support collections and disbursements. ***The California Child Support Automation System (CCSAS) combined statewide case management capabilities with centralized child support collection and payment processing through the State Disbursement Unit (SDU).***	
Role Description	
Keith led the solution development and sales campaign on this $800M initiative. He led the application development team (peak headcount exceeding 200 people) and led the maintenance and operations efforts after successful statewide deployment.	

Wyoming Parental Obligation System for Support Enforcement (POSSE)	***12/1993 – 07/1999***
Company Name	***Wyoming Department of Family Services***
Company Location	***Cheyenne, WY***
Role on Project	***Application Development Lead***
Software/Hardware Used	***Natural/ADABAS, AIX servers***
Project Description	
The POSSE project began in the summer of 1993 and concluded its first phase in 1997. POSSE allowed the Wyoming Department of Family Services to meet the federal requirement to deploy a single, statewide automated system to support its child support program. The project included the typical phases of the System Development Lifecycle – requirements, design, build, test, and deploy, and also included user training development and delivery. ***In 1998, Wyoming started the POSSE Enhancements Project (PEP), with the primary purpose of implementing the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) requirements. This project completed successfully in 1999.***	
Role Description	
Keith was a design and development lead on the initial POSSE project and moved to become overall project manager for the PEP project.	

Mississippi Enforcement and Tracking of Support System (METSS)	***07/1992 – 12/1993***
Company Name	***Mississippi Department of Human Services***
Company Location	***Jackson, MS***
Role on Project	***Designer and Developer***
Software/Hardware Used	***Natural/ADABAS, IBM mainframe***
Project Description	
The METSS project began in the 1991 and concluded in 1995. METSS allowed the Mississippi Department of Human Services to meet the federal requirement to deploy a single, statewide automated system to support its child support program. The project included the typical phases of the System Development Lifecycle – requirements, design, build, test, and deploy, and also included user training development and delivery.	
Role Description	
Keith was a designer and developer on the METSS project.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Oklahoma***		
City, State	***Norman, OK***		
Degree	***Bachelors of Science, Electrical Engineering***	***Completion Date***	***12/1995***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional, 12/2010***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***COBOL, WebSphere, Weblogic, SQL***
Hardware	***IBM Mainframe, IBM AIX, PC Hardware, Windows NT, Unix***
Software	***Java/J2EE, ClearCase, ClearQuest, Oracle stack, Exadata, Exalogic, OBIEE, ODI for ETL, OPA, Initiate for MDM, DataStage for ETL, Pega Systems for Case Management and Workflow***
Tools	***Microsoft Office suite (Word, Excel, Powerpoint, Project)***
Databases	***Oracle, DB2, ADABAS***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Covered California***
Contact Name	***Karen Ruiz, Chief Technology Officer***
Phone Number	***(916) 717-0355***
Fax Number	***(888) 329-3700***
Email Address	***Karen.Ruiz@covered.ca.gov***

Client Reference 2

Company Name	***Covered California***
Contact Name	***David Maxwell-Jolly, Chief Strategy Officer (retired)***
Phone Number	***(916) 502-2210***
Fax Number	***n/a***
Email Address	***dmaxj@sbcglobal.net***

Client Reference 3

Company Name	***California Franchise Tax Board***
Contact Name	***Cathy Cleek, Chief Information Officer***
Phone Number	***(916) 845-3310***
Fax Number	***(916) 845-3191***
Email Address	***Cathy.Cleek@ftb.ca.gov***

Michael Leszczynski, PMO Lead

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Michael Leszczynski***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***2***	**# of Years with Firm:**	***7***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Michael Leszczynski is a senior consultant in the Technology service area, Systems Integration service line. He brings extensive experience in leading large public sector clients through major technology transformations. As a senior consultant in the Technology industry for more than six years, Michael is known for his proficient knowledge of the entire Software Development Lifecycle (SDLC). He is skilled in project management oversight. He is currently the functional manager on the EDD UI M&O Initial Claims Enhancement Project leading the design effort for application related changes.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Unemployment Insurance – Initial Claims Enhancement	***10/2016 – Present***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Functional Manager***
Software/Hardware Used	***.NET, SQL***
Project Description	
Upgrade the Unemployment Insurance initial claim intake process and automate claim filing based on a set of business rules	
Role Description	
• ***Led the functional design team for a large scale system implementation project, planning and managing the necessary activities*** • ***Compiled functional design effort estimates as well created as the overall design schedule*** • ***Led JAD sessions which included EDD division chiefs and key stakeholders*** • ***Compiled and monitored status reports to be used for meetings with key stakeholders and executives*** • ***Coordinated with multiple ongoing project leaders to assess any functional and/or schedule impacts***	

Employment Development Department (EDD) - IDM Oracle Upgrade	***03/2016 – 10/2016***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Testing Manager***
Software/Hardware Used	***.NET, SQL***
Project Description	
To provide a single portal to the state of CA users for both Unemployment Insurance (UI) and State Disability Insurance (SDI) to access either application (UI or SDI).	
Role Description	
• ***Managed the Master System Test Plan (MSTP) a $1.3 million dollar deliverable to deliver on time*** • ***Compiled and delivered on time the Initial Build Summary Report a $1.3 million dollar deliverable*** • ***Planned and estimated the required testing resources based on the given timeline and activities that needed to be completed*** • ***Provided oversight to state testing resources that were responsible for testing the Portal application***	

MAGI Medicaid System Transfer	***06/2015 – 02/2016***
Company Name	***Oregon Health Authority***
Company Location	***Salem, OR***
Role on Project	***Implementation***
Software/Hardware Used	***.NET, SQL***
Project Description	
To implement the KYNECT system for future modified adjusted gross income (MAGI) Medicaid and Children's Health Insurance Program (CHIP).	
Role Description	

- ***Worked with leadership to define the overall cutover plan***
- ***Worked with the technology team to compile an hour by hour pre-cutover, cutover, and post-cutover plan***
- ***Defined the overall help desk process and structure while providing staffing recommendations***
- ***Conducted meetings with lead stakeholders to provide updates and overall project status***
- ***Gathered project status updates across system leads***
- ***Assisted in development of implementation planning documentation***

Employment Development Department - Unemployment Insurance – Continued Claims Redesign	***03/2010 – 06/2015***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Development Lead, Design Lead, Testing Support, PMO***
Software/Hardware Used	***.NET, SQL***
Project Description	
To design, develop, test, and implement the Unemployment Insurance Modernization Continued Claims Redesign.	
Role Description	

Development Lead

- ***Calculated design, development, and testing effort estimates for enhancements and system fixes***
- ***Planned monthly maintenance builds that included enhancements and system fixes***
- ***Provided status reports for executives***
- ***Conducted quality reviews on updates being implemented as part of maintenance builds***

Design Lead

- ***Designed business processes to aid in the development of a new application for a major public sector client***
- ***Identified gaps in current process in order to streamline updated business processes***
- ***Facilitated design sessions to define, analyze and document requirements; these sessions included senior state executives and diverse stakeholder groups***
- ***Supported offsite teams in the development and implementation of new business applications***
- ***Led team across large scale project; tasks involved high-visibility tactical assignments with tight schedules and limited resources***
- ***Designed and maintained application configuration documentation for public sector client***
- ***Wrote and maintained business database that links business components using Microsoft Access***
- ***Processed client issues that came through HP Service Manager***

Testing Support

Employment Development Department - Unemployment Insurance – Continued Claims Redesign	***03/2010 – 06/2015***

- ***Wrote and executed test scripts of the business application using HP Quality Center***

PMO

- ***Implemented a change control process in Team Foundation Server (TFS)***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Nevada Reno***		
City, State	***Reno, NV***		
Degree	***Bachelor Science Business Administration (B.Sc), Major: Management Information Systems (MIS)***	***Completion Date***	***12/2009***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Windows XP, Windows Vista, Windows 7***
Hardware	***BizTalk Servers, Application Servers, IIS, Business Rules (ILOG & In Rule) Servers, Web Servers***
Software	***Visual Studio, SQL, Microsoft Office Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Visio, Microsoft Project, Visual Basic***
Tools	***HP Quality Center, HP Service Manager, Microsoft SharePoint, JIRA***
Databases	***SQL***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***CA Employment Development Department***
Contact Name	***Alexandra Simien***
Phone Number	***(916) 654-6755***
Fax Number	***n/a***
Email Address	***Alexandra.Simien@edd.ca.gov***

Client Reference 2

Company Name	***CA Employment Development Department***
Contact Name	***Maria Rutherford***
Phone Number	***(916) 651-9489***
Fax Number	***n/a***
Email Address	***Maria.Rutherford@edd.ca.gov***

Client Reference 3

Company Name	***CA Employment Development Department***
Contact Name	***Adam Brunner***
Phone Number	***(916) 654-8241***
Fax Number	***n/a***
Email Address	***Adam.Brunner@edd.ca.gov***

Key Personnel

Kent Wheeler, Project Manager

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Kent Wheeler***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Managing Director***	
# of Years in Classification:	***16***	**# of Years with Firm:**	***9 years, 11 months***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Kent has over 30 years of experience in technology management, program management, cost and management accounting, financial and strategic planning, operational management, contract negotiations and management, and systems integration/enterprise resource planning (SI/ERP) information system implementations.

Kent has developed a unique blend of advanced managerial skills, cross-industry experience, and technical expertise with a proven ability to negotiate and coordinate business and technology in a synergetic way. He quickly assesses and builds partnerships within all levels of an organization.

Kent was the Project Director on the nation's most recent large-state CSE system certification, Florida's CAMS project, where he led the implementation and delivery of the system from inception through certification. During that time, he established himself as a project leader as he drove the successful implementation of the certified child support enforcement system.

Currently, Kent serves as the Project Director on the Oregon Origin project, where he leads a team that is transferring and modifying the CA CSE system to meet the Oregon requirements. His understanding of the entire process surrounding the successful transfer and adapting CA CSE for Oregon requirements is invaluable for the NCSEAS project.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***10/2015 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Project Director***
Software/Hardware Used	***JAVA, Industry Print, Microsoft Office Suite, IBM Security Access Manager eBusiness with Web-SEAL, OpenText ExStream, IBM Cognos Suite, IBM HTTP Server, IBM DB2 Advanced Enterprise Server Edition, IBM Rational Collaborative Lifecycle Management, SONAR, Adobe Captivate, MyEclipse Blue, Junit, Liquibase***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Kent's role on this engagement is the project director for the entire project. Kent has overall responsibility for the day-to-day management of the engagement with a focus on program management across all of the teams on the project including functional, technical, development, policies and procedures, training, PMO and security. ***Kent serves as the day-to-day lead for Deloitte as the primary Systems Integrator. Kent is the lead representative in the weekly status meetings, issue, risk, staffing and communications meetings. Kent also serves as the lead in the monthly project steering committee, sponsor meeting and workplan meetings. Kent was the Project Director lead during orals, contract negotiations, analysis, design and construction phases of the project lifecycle.***	

Florida CAMS project	***12/2008 – 10/2015***
Company Name	***State of Florida, Florida Department of Revenue, Child Support Enforcement Division***
Company Location	***Tallahassee, FL***
Role on Project	***Project Director***
Software/Hardware Used	***SAP (Finance, CRM, Procurement, BI), Microsoft Office Suite***
Project Description	
The CAMS project implemented full CSE functionality through configuration and customization of an SAP/COTS solution. Deloitte executed the full SDLC project through deployment and federal certification into maintenance and operations. The Florida CSE program manages more than 656,000 child support cases through roughly 4,000 representatives in 43 service sites (including external agencies) spread throughout 65 counties.	
Role Description	
Kent's role on this engagement was the project director for the entire project. Kent had overall responsibility for the day-to-day management of the engagement with a focus on program management across all of the teams on the project including functional, technical, development, training, PMO, security and Maintenance and Operations. ***Kent served as the day-to-day lead for Deloitte, leading the team through design, build, test, and certification. Kent was the lead representative in the weekly status meetings, issue, risk, staffing, and communications meetings. Kent also served as the lead in the monthly project steering committee, sponsor meeting and workplan meetings. Kent was the Project Director lead during contract negotiations, analysis, design, construction, testing, go live, federal certification and maintenance and operations phases of the project lifecycle.***	

Clinical Information System (CIS) project	***10/2005 – 11/2008***
Company Name	***Novant Health***
Company Location	***Charlotte, NC***
Role on Project	***VIP IT Operations***
Software/Hardware Used	***Allscripts, Siemens Invision, T-System, McKesson PACS, Cerner Millennium***
Project Description	
The client was implementing a Clinical Information System (CIS) with Cerner as the selected vendor partner. The client hired Deloitte Consulting to help assess key benefit categories that are associated with the improvement in the quality of patient care or "customer service" levels to patients and their families, potential Cost Saving benefits are those that positively impact the bottom line over a projected period of time. Deloitte Consulting was also engaged to help with the assessment of the project management responsibilities for integration testing for the current Cerner Millenium installation.	
Role Description	
Kent was in charge of day-to-day operations management. Kent worked closely with the IT Directors and Managers to provide consistent service to clinicians, physicians, administration and patients. Kent worked with the CIO and other leadership to understand service improvement areas, and then facilitated a plan of action to enhance or add new elements to provide better service to end users. Kent also facilitated the development of new policies and procedures to support day-to-day operations, relationship management, budgeting, and internal/ external audit compliance. Kent also facilitated the development of new customer service standards and internal/external IT communications often presenting IT updates to senior executive, corporate and facility based leadership teams. Teaming with strategic sourcing leadership, Kent has helped to enhance a contract negotiations and management model for IT related products and services. Kent was often involved with contract reviews and negotiations with vendors. ***As a senior IT leader and an Executive at this Healthcare system, Kent participated in several corporate leadership committees representing Corporate IT. Kent also served as the senior IT Executive on multiple clinical application implementation projects. Kent was the senior IT Executive, collaborating with the senior Physician Executive, implementing the ambulatory electronic medical record and patient***	

Clinical Information System (CIS) project	***10/2005 – 11/2008***
management system. Kent was also asked to facilitate the transition of one of the Hospitals from their old systems to the Healthcare system footprint.	

Project Genesis	***11/2003- - 10/2005***
Company Name	***Johnson Controls Inc.***
Company Location	***Milwaukee, WI***
Role on Project	***Global Project Director of Project Genesis***
Software/Hardware Used	***SAP, Oracle, IBM***
Project Description	
Project Genesis was a Global SAP Implementation in over 20 countries and 180 plants. The implementation included functionality within finance, materials management, purchasing, Executive reporting, systems development and technology architecture. The implementation also included the implementation of an internal shared service organization in North America as well as an outsourced implementation of a shared service organization in Europe.	
Role Description	
Kent led the project representing the client's best interest as the overall Program Director reporting to the Project Executive Sponsor/CFO. Kent was responsible for grounding the project that was started a year earlier in terms of budget, timeline, resources, scope and Executive management expectations. Kent also developed a project management department for the project and a project management strategy to serve for the remainder of the project. ***Kent also managed the Global Consulting firm in terms of budget, contract, staffing and deliverables. This included working with the client's purchasing organization to be a co-lead in negotiating the SAP implementation contract as well as the European outsourcing arrangement. Kent was also responsible for managing the relationship between the client and the outsourcing integrator after the contract was awarded.***	

Energen – Alagasco project	***02/2002 – 11/2003***
Company Name	***Energen - Alagasco***
Company Location	***Birmingham, AL***
Role on Project	***Director of SAP and Technology***
Software/Hardware Used	***SAP, Oracle***
Project Description	
The project was a SAP implementation for a major gas/utility company in the Southeast. The project implemented the following SAP modules: FI-GL, FI-AP, FI-AR, FI-AA, FERC, CO-CCA, CO-PCA, PM, MM-IM, MM-PP, MM-WM, technology architecture and systems development.	
Role Description	
Kent was the lead sales Partner during the proposal cycle, implementation and production support. Kent's other responsibilities were to interface the Business Vice Presidents/Executives with the CIO to research, discuss and strategically plan IT initiatives that solve business requirements. Kent also had the responsibility of managing the technology sub-team's, the harmonization across those teams as well as defining technology needs to support Business and IT initiatives. Kent was also responsible for leading the production support efforts across business applications and serves on the advisory board for the IHRIS project, while also serving as the chair for the Technology Initiative Council. ***Other responsibilities include contract negotiation and development, vendor and consulting sourcing, and advisor to the PMO. Kent was also the lead on the re-development of the company disaster recovery and business continuity planning initiative and Sarbanes-Oxley compliance via the SAP system.***	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Randolph Macon College***		
City, State	***Ashland, VA***		
Degree	***BA Business/Economics***	***Completion Date***	***06/1985***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***ITIL Certification, Date Completed: June 2006***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***SAP***
Hardware	***Unix, Sequel, IBM Blade Servers, IBM Mainframe, Client Server Technology, Windows 2012 Datacenter R2***
Software	***SAP – ABAP, JAVA, Myeclipse Blue, Viusal Paradigm, Opentext Design Manager, UPerform***
Tools	***Microsoft Office Suite, HP Quality Center***
Databases	***Microsoft Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Oregon, Department of Justice (Child Support Enforcement)***
Contact Name	***Kate Cooper Richardson, IV-D Director CSE/Executive Sponsor***
Phone Number	***(503) 947-4357***
Fax Number	***n/a***
Email Address	***Kate.Richardson@doj.state.or.us***

Client Reference 2

Company Name	***State of Oregon, Department of Justice (Child Support Enforcement)***
Contact Name	***Karen Coleman, Project Executive***
Phone Number	***(503) 947-4311***
Fax Number	***n/a***
Email Address	***karen.coleman@doj.state.or.us***

Client Reference 3

Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Contact Name	***Mary Whitacre, Project Manager***
Phone Number	***(850) 717-7000***
Fax Number	***n/a***
Email Address	***WhitacrM@dor.state.fl.us***

Rajiv Patel, Technical Lead

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Rajiv Patel***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Manager***	
# of Years in Classification:	***4***	**# of Years with Firm:**	***13***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Rajiv has 17 years of public and private sector experience working on large system development, integration, and maintenance projects. He has 13 years of experience working in the public sector, including six years with California Department of Child Support Services and other HHS clients. He has extensive experience leading and architecting application development and implementation efforts in large-scale automated system projects. Rajiv is currently the application architect for the maintenance and enhancement phase of California CSE, which supports the largest child support system in the country. He leads a team of technical architects, developers, and data modelers to design and implement enhancements to the existing child support application. Rajiv has led the design and implementation effort for 180 major enhancements and 1,200 system fixes and maintenance change requests to help improve the California CSE system over the past six years.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

California CSE project	***07/2011 – Present***
Company Name	***State of California, California Department of Child Support Services***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Architect/Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Hibernate, RAD, Eclipse, Apache Ant, UNIX Kron Shell Scripting, Perl, JMS, WSDL, MQ Series, Windows 2007, Linux, UNIX , LDAP (TAMe), Active Directory, Adobe Live Cycle Designer/ES2, IBM Heap Analyzer, JProfiler. Web Server: Apache. Application Server: Websphere., Database: DB2. Design Pattern Used: MVC (STRUTS), AJAX, Bootstrap.***

Project Description

The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The scope of the project included designing, developing, implementing, and integrating county systems into a single state-of-the-art child support enforcement system to meet federal certification requirements. Fully implemented in late 2008, the CSE system manages 1.6 million child support cases and supports almost 8,000 child support enforcement caseworkers in collecting approximately $3 billion per year for California children.

Role Description

In his current role as Application Architect, Rajiv's responsibilities include:

- ***Assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, Interfaces, and testing approach.***
- ***Leading the technical design and development effort and managing a team of over 15 developers to design and build and maintain the Case Management application modules.***
- ***Building development schedules and plans, and prioritizing development work and monitoring progress of the project team.***
- ***Participating and leading various client meetings with business users and functional teams to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements.***
- ***Assisting and guiding client counterparts with their design and development efforts and coordinating between development, functional requirements, and integration testing teams.***
- ***Building Use Case diagrams using UML applying OOPS concepts and building logical data models.***
- ***Building technical documentation artifacts such as Class Diagrams, Sequence Diagrams, and Logical Data Models.***
- ***Analyzing and resolving the more complex application production issues, performing code and design reviews, and creating programming standards.***
- ***As the Application Architect led the design and development of over 30 enhancement projects. Some of the key projects include:***
  - ***Kiosk Payment Services for NCPs at LCSA Locations***
  - ***Electronic Filing of Legal documents with courts for Napa, Monterey, San Mateo, Sanata Cruz counties***
  - ***DCSS Tribal Case Manager Functionality***
  - ***DCSS Mobile App***
  - ***Electronic Levy Processing Interface with FAST Levy vendor***
  - ***Electronic Lien Processing Interface with CeRTNA vendor for Sacramento, Shasta, Sonoma counties***
  - ***Work Number Interface Implementation***

California CSE, Electronic Lien Processing Interface with SECURE vendor (Los Angeles, Orange, San Mateo and San Diego Counties) project	***04/2016 – 05/2017***
Company Name	***State of California, California Department of Child Support Services***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Architect/Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Hibernate, RAD, Eclipse, Apache Ant, UNIX Kron Shell Scripting, Perl, JMS, REST, MQ Series, Windows 2007, Linux, UNIX , LDAP (TAMe), Active Directory, Adobe Live Cycle Designer/ES2, IBM Heap Analyzer, JProfiler. Web Server: Apache. Application Server: Websphere., Database: DB2. Design Pattern Used: MVC (STRUTS), AJAX, JAXB.***
Project Description	
The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The Electronic Lien Processing Interface with SECURE vendor project involved creating a new interface between CA CSE System and a third party vendor SECURE to enable processing electronic lien filings for Los Angeles, Orange, San Mateo and San Diego County recorders offices with a phased implementation for each of the counties.	
Role Description	
In his role as Application Architect, Rajiv's responsibilities included: • ***Leading the design of the business processes required to build the new Electronic Lien Interface and modifications required to the CA CSE system as a result of the integration.*** • ***Assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, Interfaces, and testing approach.*** • ***Leading the technical design and development effort and managing a team of over 8 developers to design and build the new Electronic Lien Interface and modify the CA CSE systems Enforcement module.*** • ***Designing the Electronic Lien Interface between the CA CSE system and SECURE.*** • ***Developed schedules and plans, and prioritizing development work and monitoring progress of the project team.*** • ***Participating and leading various client meetings with business users and functional teams to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements.*** • ***Assisting and guiding client counterparts with their design and development efforts and coordinating between development, functional requirements, and integration testing teams.*** • ***Building Use Case diagrams using UML applying OOPS concepts and building logical data models.*** • ***Building technical documentation artifacts such as Class Diagrams, Sequence Diagrams, and Logical Data Models.*** • ***Analyzing and resolving the more complex application production issues, performing code and design reviews, and creating programming standards.***	

California CSE, Virtual Interactive Online Application (VIOLA) Portal for Case Intake	***01/2015 – 02/2016***
Company Name	***State of California, California Department of Child Support Services***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Architect/Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Hibernate, RAD, Eclipse, Apache Ant, UNIX Kron Shell Scripting,***

California CSE, Virtual Interactive Online Application (VIOLA) Portal for Case Intake	***01/2015 – 02/2016***
	Perl, JMS, WSDL, MQ Series, Windows 2007, Linux, UNIX , LDAP (TAMe), Active Directory, Adobe Live Cycle Designer/ES2, IBM Heap Analyzer, JProfiler. Web Server: Apache. Application Server: Websphere., Database: DB2. Design Pattern Used: MVC (STRUTS), AJAX.
Project Description	
The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The VIOLA Portal project involved creating a mobile-friendly responsive customer portal (VIOLA) for Child Support Case Intake and integrating it with the CA CSE Case Worker Portal.	
Role Description	
In his role as Application Architect, Rajiv's responsibilities included: • ***Assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, Interfaces, and testing approach.*** • ***Leading the design of the business processes required to build the new customer portal VIOLA and modifications required to the CA CSE Case Worker Portal as a result for the integration.*** • ***Leading the technical design and development effort and managing a team of over 11 developers to design and build the mobile-friendly responsive Customer Portal and modify the CA CSE Case Worker Portal Case Initiation module.*** • ***Design the interface between the customer portal VIOLA and CA CSE Case Worker Portal.*** • ***Developed schedules and plans, and prioritizing development work and monitoring progress of the project team.*** • ***Participating and leading various client meetings with business users and functional teams to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements.*** • ***Assisting and guiding client counterparts with their design and development efforts and coordinating between development, functional requirements, and integration testing teams.*** • ***Building Use Case diagrams using UML applying OOPS concepts and building logical data models.*** • ***Building technical documentation artifacts such as Class Diagrams, Sequence Diagrams, and Logical Data Models.*** • ***Analyzing and resolving the more complex application production issues, performing code and design reviews, and creating programming standards.***	

California CSE, Electronic Document Workflow project	***07/2013 -12/2014***
Company Name	***State of California, California Department of Child Support Services***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Architect/Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Hibernate, RAD, Eclipse, Apache Ant, UNIX Kron Shell Scripting, Perl, JMS, WSDL, MQ Series, Windows 2007, Linux, UNIX , LDAP (TAMe), Active Directory, Adobe Live Cycle Designer/ES2, IBM Heap Analyzer, JProfiler. Web Server: Apache. Application Server: Websphere., Database: DB2. Design Pattern Used: MVC (STRUTS).***
Project Description	
The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The Electronic Document Workflow project involved creating ability for the case workers to receive notifications when certain documents are scanned or uploaded into the CA Case Worker Portal based on specific rules, configurations and document types defined at their counties.	

California CSE, Electronic Document Workflow project	***07/2013 -12/2014***

Role Description

- ***Leading the design of the business processes required to build the new by working with the various local child support agencies at the county level. Formulate the routing rules based on their business processed that would be configurable and identify the configurations for each county for the over 500 types of documents.***
- ***Assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, and testing approach.***
- ***Leading the technical design and development effort and managing a team of over 8 developers to design and build the rules and screens to enable the routing of the notification.***
- ***Developing schedules and plans, and prioritizing development work and monitoring progress of the project team.***
- ***Participating and leading various client meetings with business users and functional teams to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements.***
- ***Assisting and guiding client counterparts with their design and development efforts and coordinating between development, functional requirements, and integration testing teams.***
- ***Building Use Case diagrams using UML applying OOPS concepts and building logical data models.***
- ***Building technical documentation artifacts such as Class Diagrams, Sequence Diagrams, and Logical Data Models.***
- ***Analyzing and resolving the more complex application production issues, performing code and design reviews, and creating programming standards.***

AOC Courts Case Management System V4 (CCMS-V4) Case Management project	***08/2007– 06/2011***
Company Name	***California Administrative Office of Courts***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Hibernate, RAD, Eclipse, Apache Ant, UNIX Kron Shell Scripting, Perl, JMS, WSDL, MQ Series, Windows 2007, Linux, UNIX, LDAP (TAMe), Active Directory, Adobe Live Cycle Designer, IBM Heap Analyzer, JProbe*** ***Web Server: Apache. Application Server: Websphere, Weblogic. Database: ORACLE 9.x, 10.x, DB2. Design Pattern Used: MVC (STRUTS), AJAX.***

Project Description

The AOC Courts Case Management System V4 (CCMS-V4) Case Management project was a statewide case worker portal to allow the County court case workers, judges, state attorneys to manage their court business the courthouse or court facilities and also interface with other state agencies to exchange information via electronic data exchanges. The system was one of the largest consolidated enterprise Court Case Management system build to manage over 9 million cases filed each year in the State of California.

Role Description

As Application Development Lead, Rajiv performed the following activities:

- ***Participated and lead various client meetings with business users and functional team to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements.***
- ***Assisted and guided client counterparts with their design and development efforts and coordinated between development, functional requirements, and integration testing teams.***
- ***Led technical design and development effort.***
- ***Managed and led a team of over 5 developers to design and build Case Management application modules.***

AOC Courts Case Management System V4 (CCMS-V4) Case Management project	***08/2007– 06/2011***

- ***Built development schedule and plans and prioritized development work for team and monitored progress of project team.***
- ***Assisted in assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, Interfaces, and testing approaches.***
- ***Built Use case diagrams using UML applying OOPS concepts and also built a logical data models, and was also responsible for building the technical documentation artifacts like Class Diagrams, Sequence Diagrams, and Logical Data Models etc.***
- ***Analyzed and resolved the more complex application issues, performed code and design reviews, and created programming standards.***
- ***Built dynamic web applications, web portals, batch applications and sites with constantly updating content using Java JEE, JSP, HTML, XML, XSL, CSS, JavaScript, MVC Struts, Spring Framework, EJB.***
- ***Implemented asynchronous server calls using AJAX and modifying HTML content on web pages based on user action.***
- ***Implemented Service Oriented Architecture (SOA) principles by creating Web Services using Java Message Service (JMS), Web Services Definition language (WSDL), MQ Series and Simple Object Access Protocol (SOAP) to build National Information Exchange Model (NIEM) conformant web services.***

CCMS V3 Deployment	***02/2006 – 12/2007***
Company Name	***San Diego County and Sacramento County Superior Courts***
Company Location	***San Diego, CA 92101***
Role on Project	***Application Development Lead***
Software/Hardware Used	***Java/J2EE, JSP, JDBC, JavaScript, EJB, LDAP, HTML, XML, XSL, CSS, Spring JDBC, JDO, Spring, Struts, Eclipse, Apache Ant, UNIX Kron Shell Scripting, Perl, JMS, WSDL, Windows 2007, Linux, UNIX, LDAP (TAMe), Active Directory, Adobe Live Cycle Designer, JProbe, FileNet*** ***Web Server: Apache. Application Server: Weblogic.*** ***Database: ORACLE 8.x, 9.x*** ***Design Pattern Used: MVC (STRUTS), Injection Dependency, Singleton, Factory Facade.***

Project Description

The CCMS-V3 system deployment for San Diego and Sacramento County to modernize their legacy systems by moving to a single modern Web Based Case Management system(CCMS V3) for the Case Categories of Civil, Small Claims and Probate in all their offices. The deployment activities included application configuration, new customized modules, interfaces, custom forms and report design and build, data conversion, application defect management and pre deployment testing. The system was successfully deployed to the two counties for all their offices servicing Civil, Small Claims and Probate Case Categories.

Role Description

As Application Development Lead, Rajiv performed the following activities:

- ***Participated and lead various client meetings with business users and functional team to understand the client's business requirements and to provide technical assistance to help them resolve complicated business requirements specific to the counties courts processes.***
- ***Understand the San Diego and Sacramento County Courts business processes to set up base configuration for the CCMS V3 system.***
- ***Managed and led technical design and development effort team of over 6 developers to design and build new Case Management application modules on top of the existing CCMS V3 system customized for San Diego and Sacramento County Courts.***
- ***Assisted and guided client counterparts with their design and development efforts and coordinated between development, functional requirements, and integration testing teams.***

CCMS V3 Deployment ***02/2006 – 12/2007***

- ***Built customized Forms and Reports and Interfaces for Sacramento and San Diego county courts in addition to existing out of the box items provided by the CCMS V3 system.***
- ***Built development schedule and plans and prioritized development work for team and monitored progress of project team.***
- ***Assisted in assessing, designing and creating a solution for enterprise application's technical infrastructure integration like security (LDAP), specific databases, Application Servers, Programming languages, Utilities, Document Generation, Interfaces, and testing approaches.***
- ***Integrated a document scanning and imaging solution using FileNet into CCMS V3 system for San Diego county courts.***
- ***Built Use case diagrams using UML applying OOPS concepts and also built a logical data models, and was also responsible for building the technical documentation artifacts like Class Diagrams, Sequence Diagrams, and Logical Data Models etc.***
- ***Analyzed and resolved the more complex application issues, performed code and design reviews, and created programming standards.***
- ***Built dynamic web applications, web portals, batch applications and sites with constantly updating content using Java JEE, JSP, HTML, XML, XSL, CSS, JavaScript, MVC Struts, Spring Framework, EJB.***
- ***Implemented Service Oriented Architecture (SOA) principles by creating Web Services using Java Message Service (JMS), Web Services Definition language (WSDL), MQ Series and Simple Object Access Protocol (SOAP) to build National Information Exchange Model (NIEM) conformant web services.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***California State University***		
City, State	***Sacramento, CA***		
Degree	***Master of Science, Computer Science***	***Completion Date***	***01/2002***

Institution Name	***University of Poona***		
City, State	***Poona, India***		
Degree	***Bachelor of Engineering (Computer Engineering)***	***Completion Date***	***07/1997***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***None***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***UNIX AIX, Linux, Windows***
Hardware	***None***
Software	***Java 4,5,6,7, XML,XSLT,XSD, XSL,JavaScript, JQuery, BootStrap, ramework for Responsive Web, Ajax, SQL, Korn Shell, HTML, J2EE/JEE, EJB, JSP, JSP EL, Hibernate, HQL), XMLBeans, JUnit, DBUnit, EasyMock, JMS, Servlets, Struts, Tiles, Spring Framework, Ant, UNIX shell scripts, Power Builder, Perl, C, C++, VC++, COBOL, Web Services***
Tools	***RAD, Eclipse, WebSphere, WebLogic, IBM MQ, Apache Tomcat, IBM ClearCase, IBM ClearQuest, TestDirector, IBM Tivol, IBM RequisitePro, CVS, Business Objects, QTP, LDAP, JDBC, Cold Fusion, Adobe LiveCycle), Crystal Reporting, FTP/SFTP, IBM Content Manager, SOAP UI***
Databases	***DB2 9.x,10.x, Oracle 8.i,9.i, 10, 11g, MySQL***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***California Department of Child Support Services***
Contact Name	***Lisa Close, Application Requirements/Testing Manager***
Phone Number	***(916) 464-5447***
Fax Number	***n/a***
Email Address	***Lisa.Close@dcss.ca.gov***

Client Reference 2

Company Name	***California Department of Child Support Services***
Contact Name	***Catherine Lanzaro, IT Applications Branch Chief***
Phone Number	***(916) 464-5007***
Fax Number	***n/a***
Email Address	***Catherine.Lanzaro@dcss.ca.gov***

Client Reference 3

Company Name	***California Department of Child Support Services***
Contact Name	***Melissa Jones, Application Development Manager***
Phone Number	***(916) 464-6790***
Fax Number	***n/a***
Email Address	***Melissa.Jones@dcss.ca.gov***

Jay Arumugam, Implementation Lead

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jay Arumugam***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Manager***	
# of Years in Classification:	***10***	**# of Years with Firm:**	***2***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Jay currently leads Application Development for the Oregon Origin worker portal. As a certified Project Management Professional (PMP) and Information Technology Infrastructure Library (ITIL) certified Professional, Jay has nearly 20 years of experience in Project Management, Software Development, Delivery Management, and Account Management, with 19 of those years in child support enforcement projects. He has successfully led teams that included members in India, effectively facilitating communication and understanding for positive project outcomes. His experience includes designing and implementing large-scale child support enforcement applications in Oregon, Texas, Michigan, and New Mexico. Jay has sound technical knowledge of Software Engineering Institute's Capability Maturity Model (SEI CMM Level 4), ISO 9001 Quality Processes and databases such as Oracle and DB2. Jay has worked with numerous clients and established an excellent reputation of delivering the projects on time and within the budget.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***11/2016– Present***
Company Name	***State of Oregon***
Company Location	***Oregon 97302***
Role on Project	***Application Development Manager (Worker Portal)***
Software/Hardware Used	***IBM WebSphere, IBM Tivoli Workload Scheduler, Java, IBM Jazz Suite, Atlassian Jira, TOAD, Enterprise Content Manager, Open Text Extreme, Microsoft Project Plan***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Jay leads the implementation of all worker portal modules for Oregon's Origin child support case management, case initiation, establishment, interstate and locate modules. He led the application development team defining the framework for worker portal pages and developed 305 pages across the functional modules. He led the triage team for analyzing the system test defects from an application development perspective. He was involved in JAD (Joint Application Design) sessions with the Business Analysts for various functional modules in Origin. He also led the JTD (Joint Technical Design) sessions with the client technical team for various modules in Origin.	

Texas TxCSES T2 project	***05/2011 – 09/2016***
Company Name	***Texas Office Of Attorney General, Child Support Division***
Company Location	***Austin, TX***
Role on Project	***Batch Architect/Establishment & Enforcement Development Manager***
Software/Hardware Used	***WebSphere Extended Compute Grid, BPM, Portal, WODM, IBM Rational Tools (RSA, Clear Case, Clear Quest) and TOAD***
Project Description	
This project entailed the custom build of a new child support system (TxCSES T2) that modernizes and automates Case Initiation & Management, Establishment, Enforcement, and Financial functionality. T2 will support a growing caseload of over 1.5m cases.	
Role Description	
Jay supported the implementation of Enforcement Establishment Renewal for TxCSES T2. He led the Batch Architecture team defining the architecture scope of batch jobs. He also executed the role of Technical SPOC (Single Point of Contact) in defining the batch architecture. He assisted by implementing the standards across Enforcement Establishment Technical development team. He worked as a member of Design Review Board in the project. Jay provided the road map to implement the batch jobs in TxCSES T1. Jay was involved in the design activities for the Enforcement Establishment Renewal business process models as part of T2 project. He was involved in JAD/Review sessions with the Business Experts of Enforcement Establishment module for Enforcement Establishment Renewal process. Jay led the design team as well as offshore development team to develop the Enforcement Establishment Renewal functionality of the T2 system.	

Michigan MiCSES project	***12/2001 – 05/2011***
Company Name	***State of Michigan***
Company Location	***Lansing, MI***
Role on Project	***Batch Architect/Financial Management Development Manager***
Software/Hardware Used	***Oracle 11g/9i, PL\SQL, Java, XML, Oracle Forms and Reports, Oracle Designer UNIX, Windows, MS Project, Visio, Oracle Grid Control, SQL Analyzer, SQL Impact, Toad, SQL Developer, AUTOSYS***

Project Description

The Michigan Child Support Enforcement System (MiCSES) is the statewide CSE automated system that is PRWORA compliant, client-server and thin-client web based architecture. The goal of this project was to automate Case Initiation & Management, Establishment, Enforcement, and Financial functionality for a caseload of over 846,000 thereby ensuring that all Michigan children have the financial and emotional support of both parents.

Role Description

As manager, Jay's responsibilities include:

- ***Supported the implementation of financial court order for calculating surcharge for child support qualified cases.***
- ***Led the Financial development team during the implementation of DRA.***
- ***Executed the role of Technical SPOC (Single Point of Contact) in implementing the batch automation process through CA–autosys scheduler.***
- ***Implemented standards across Finance/Technical development team.***
- ***Led the Production Operations SPOC for seven years, providing support to ensure MiCSES batch jobs were completed on time. Under Jay's leadership, the MiCSES System availability was 99.2%.***
- ***Provide MiCSES System updates based on the batch Cycle to State Led High Level Management Team.***
- ***Design the Maximize Revenue project for state of Michigan and also implemented the pilot phase to Calhoun County.***
- ***Work as a member of Design Review Board in the project.***
- ***Coordinate with Data Warehouse Team to exchange the data between the Host and DW Report System.***
- ***Provide the road map to purge and archive the data from the database.***
- ***Work with Technical Control Group (DBAs) to develop the technical solutions that are executed efficiently within the batch window available.***
- ***Develop the application that generates batch schedules automatically and eliminating the manual intervention for the batch execution on daily basis.***
- ***Validate that all changes to production systems follow IT Change Management process, documentation and procedures established in CMM Level 4 and also DIT specific procedures.***
- ***Provide the technical/business inputs for contract renewal proposal.***

New Mexico Child Support Enforcement System (CSES) project	***03/1998– 12/2001***
Company Name	***State of New Mexico***
Company Location	***Santa Fe, NM***
Role on Project	***Case Management Lead/Financial Lead***
Software/Hardware Used	***DB2, COBOL, CICS, COOL: GEN (IEF), PLATINUM, FILEAID, JCL, SYNCSORT***
Project Description	
This project entailed the custom build of a child support enforcement system (CSES) for the State of New Mexico, and a Maintenance and Operations phase from January 2001 to May 2005. The system was developed as an IBM mainframe program using COBOL, COOLgen, and DB2. CSES provides support for over 66,000 cases and over 340 full-time staff. Through the CSES system, the State of New Mexico distributes approximately $114,839,125 annually.	
Role Description	
While Jay was on the New Mexico project, his role consisted of the following: • ***Worked in Financial Subsystems (Collections, Disbursement, Distribution, Financial Reporting and Support Order).*** • ***Worked in the Finance Development team during PRWORA implementation and for maintenance phase.*** • ***Provided the data from CSED system to WEB Interface.*** • ***Enhanced Electronic Fund Transfer (EFT) for Collections to direct debits the payer's accounts.*** • ***Designed & developed the Automatic recycling process, this recycles unidentified payments, received and tries to identify the same with available information.*** • ***Redesigned Federal reports OCSE-34 and OCSE-157 that are submitted to Federal Government for incentives.*** • ***Implemented several Performance Tuning initiatives to reduce the batch run times and saved the money to state for CPU Usage.*** • ***Steered estimation, resource allocation, monitoring and tracking progress, and status reporting.***	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University Of Madras, India***		
City, State	***Chennai, Tamil Nadu, India***		
Degree	***Bachelor of Engineering in Electronics and Communication***	***Completion Date***	***06/1993***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional, Date Completed, 10/2006***
- ***ITIL Certified, 10/2008***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***PL/SQL, Java, XML, VS COBOL II, C, Visual Basic***
Hardware	***IBM 3090, IBM Compatible PCs, HP 9000 Series, M9000***
Software	***Toad, Documentum, J2EE Tools, Oracle Grid Control, SQL Impact, SQL Developer, AUTOSYS, CICS, IMS DB/DC, JCL, VSAM, SDF2, TSO/ISPF, EASYTRIEVE, SQL, FILE-AID, QMF, SPUFI, SYNCSORT, CHANGEMAN, Expediter, Platinum Utilities, CA7, FTP***
Tools	***Microsoft Project, Visio, Test Tracker System, MS Word, MS Excel***
Databases	***Oracle 9i and 11g, SQL Server, DB2, IMS DB, Teradata, Microsoft Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Oregon***
Contact Name	***Gene D. Gustin, Business & Functional Design Manager, Division of Child Support, Oregon Department of Justice***
Phone Number	***(971) 915-5122, (541) 580-1508***
Fax Number	***n/a***
Email Address	***Gene.Gustin@doj.state.or.us***

Client Reference 2

Company Name	***Texas Office of Attorney General, Child Support Division***
Contact Name	***Karla Rodriguez, Program Service Manager***
Phone Number	***(512) 460-6820***
Fax Number	***n/a***
Email Address	***karla.rodriguez@texasattorneygeneral.gov***

Client Reference 3

Company Name	***Texas Office of Attorney General, Child Support Division***
Contact Name	***Mara Friesen, Deputy Director Attorney General***
Phone Number	***(512) 463-2191***
Fax Number	***n/a***
Email Address	***mara.friesen@texasattorneygeneral.gov***

Client Reference 4

Company Name	***State of Michigan***
Contact Name	***Pratin Trivedi, Director, Technology and Payment Options***
Phone Number	***(517) 930-5871***
Fax Number	***n/a***
Email Address	***TrivediP@michigan.gov***

Individual Team Members

Kim King

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Kimberly (Kim) King***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***10***	**# of Years with Firm:**	***10***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Kim has over 12 years of testing experience in developing and executing test plans; testing of case management systems focused on submitting defects and testing fixes by drafting, executing and updating test scenarios, creating test processes and sub-processes, and test documentation standards as per IEEE and ISO. Kim's experience includes working on various State of California Health and Human Services projects such as CA CSE, DIA, ISAWS, CWS/CMS and CalWIN. In addition, Kim has been involved in the planning and execution of migration related activities for case management systems. Kim also worked as a Public Assistance Specialist for the Yolo County Department of Employment and Social Service.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

California CSE project	***05/2013 – Present***
Company Name	***State of California Department of Child Support Services (DCSS), California Child Support Enforcement (CSE)***
Company Location	***Rancho Cordova, CA***
Role on Project	***Application Test Analyst III***
Software/Hardware Used	***Rational ClearQuest, Rational ClearCase, IBM DB2, PuTTY, Rational Requisite Pro, Tivoli Workload Scheduler/Job Scheduling Console, WinSCP, Java, J2EE***

Project Description

The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The scope of the project included designing, developing, implementing, and integrating county systems into a single state-of-the-art child support enforcement system to meet federal certification requirements. Fully implemented in late 2008, the CSE system manages 1.6 million child support cases and supports almost 8,000 child support enforcement caseworkers in collecting approximately $3 billion per year for California children.

Role Description

Kim is part of the System Test team for the financial module of the CSE application. Her responsibilities include:

- ***Understanding design and code changes, drafting test scenarios and executing test scenarios.***
- ***Working with test lead, requirements analysts and developers to ensure sufficient test coverage.***
- ***Logging defects for all issues identified during testing, and retesting the defects once they have been fixed.***
- ***Reporting status to the test lead on a regular basis.***
- ***Participating in Technical Problem Resolution Team (TPRT) meetings to discuss new defects.***
- ***Participating in ADS/IDEA sessions to understand Change Requests and defects, their solutions, and the applicable test scenarios.***
- ***Validating that defects for each release are tested successfully, on time and with a high-level of quality.***
- ***Prepping data and inbound files for batch job testing.***
- ***Executing batch jobs through console for test script execution.***
- ***Developing training modules to help onboard new testers on the Financial team.***
- ***Developing test scenarios using the Application Process Flows (APFs) which will provide full coverage of the APFs.***

She was also the System Test representative for the Application Resolution Team, a 6-month pilot project to streamline the Altiris Incident (Production tickets) and Defect workload. The pilot was focused on building a self-contained team in order to achieve adaptability with resources and efficiency. In this role, she performed the following activities:

- ***Worked closely with members of Production Support, Development and Design Specification teams to resolve all Production incidents.***
- ***Participated in testing for the Forms-A-Thon effort in which the Agile methodology was loosely used to implement 112 forms changes within two months.***

California Disability Insurance Automation (DIA) project	***03/2011 – 02/2012***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Integration Test Lead***
Software/Hardware Used	***Team Foundation Server, Microsoft .NET Technology, BizTalk, SQL Server, Test Director, Clear Quest, Clear Case, HTML, Javascript***
Project Description	
The Disability Insurance Branch (DIB) of the Employment Development Department (EDD) regulates the Disability Insurance (DI) program for the State of California. The DI program provides temporary, partial wage replacement to eligible disabled workers who suffer a loss of wages and are unable to work due to illness, injury, or childbirth. The DI program covers the majority of California employees, approximately 13 million workers. It is completely funded through employee payroll deduction. The Disability Insurance Automation project (DIA) aimed to create an online application available to claimants, medical providers, and employers for submission of disability claim information. The first phase implementation for 1,500 Internal Users across 16 offices statewide was in September 2012.	
Role Description	
Kim was the Integration test lead for a custom development web-based public portal for the state-wide Disability Insurance system that includes claims filing, eligibility, accounts payable and accounts receivable, and multiple interfaces to external and internal systems. Her responsibilities included: • ***Managing a team of approximately 10 testers.*** • ***Leading the team in the creation of test scripts based on the analysis of use cases, requirements, and functional specifications.*** • ***Understanding web based technologies like HTML, Javascript to write appropriate test scripts to test online web pages.*** • ***Prepping data and inbound files for batch job testing.*** • ***Executing batch jobs through console for test script execution.*** • ***Verifying sufficient test coverage of the application and traceability to the requirements.*** • ***Leading the team in the execution of unit, smoke, integration, functional, regression, User Acceptance Test, and security tests.*** • ***Leading the team in the defect management process.*** • ***Reporting status to the project manager on a regular basis.*** • ***Ensuring the each quality build was delivered on time, with a high-level of quality.*** • ***Identifying risks and escalating to upper management effectively to get resolutions.*** • ***Deloitte lead for the Paid Family Leave testing effort, a significant effort related to the project's external go-live.***	

California ISAWS project	***01/2010 – 07/2010***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Migration Lead***
Software/Hardware Used	***Unisys MAPPER, Oracle, Tuxedo***
Project Description	
The Interim Statewide Automated Welfare System (ISAWS) was an interactive welfare system that automated eligibility determination and benefit issuance for the CalWORKs/TANF, Food Stamps/SNAP, Medi-Cal/Medicaid, Foster Care and County Medical Services Programs. The system interfaced with Child Support, FTB, MEDS, WDTIP, EBT, EFT and several other automated entities. It provided an automated facility for the administration and management of various public assistance programs, and supported the information needs at the County and State level. The system provided services to 35 counties within the	

California ISAWS project	***01/2010 – 07/2010***
State, with over 350,000 active cases and 900,000 individuals receiving assistance within the State. It was used by approximately 10,000 users and processed upwards of 7 million transactions per day.	
Role Description	
Kim led the planning and execution of Migration related efforts for the ISAWS application. Her responsibilities included: • ***Working in conjunction with the State and County Consortia Management.*** • ***Participating in workgroup meetings with the C-IV project (who managed the new system) to discuss time lines, deliverables, roles and responsibilities, and details of all migration related work efforts.*** • ***Responding to requests from the C-IV project for migration related work.*** • ***Providing support for all migration related activities.***	

California ISAWS project	***11/2008 – 12/2009***
Company Name	***State of California Office of Systems Integration (OSI)***
Company Location	***Sacramento, CA***
Role on Project	***Track Lead***
Software/Hardware Used	***Unisys MAPPER, Oracle, Tuxedo***
Project Description	
The Interim Statewide Automated Welfare System (ISAWS) was an interactive welfare system that automated eligibility determination and benefit issuance for the CalWORKs/TANF, Food Stamps/SNAP, Medi-Cal/Medicaid, Foster Care and County Medical Services Programs. The system interfaced with Child Support, FTB, MEDS, WDTIP, EBT, EFT and several other automated entities. It provided an automated facility for the administration and management of various public assistance programs, and supported the information needs at the County and State level. The system provided services to 35 counties within the State, with over 350,000 active cases and 900,000 individuals receiving assistance within the State. It was used by approximately 10,000 users and processed upwards of 7 million transactions per day.	
Role Description	
Kim was the track lead for the ISAWS Cutover Activities change request. Her responsibilities included: • ***Managing the budget and scope for the change request.*** • ***Developing deliverables related to the work effort.*** • ***Leading the effort to develop detailed work plans/checklists comprising tasks to be executed during the ISAWS Cutover activities.*** • ***Ensuring that the people responsible for executing the tasks on the work plans/checklists were sufficiently informed of their responsibilities, and executed their tasks accordingly.*** • ***Leading Integrated team meetings involving internal and external groups.*** • ***Conducting large workshops with county employees to review in detail each task on the County-specific checklists.*** • ***Providing updates to the State, Consortium and Deloitte management teams.***	

California CWS/CMS project	***02/2006 – 10/2008***
Company Name	***State of California Department of Human Services (DHS), Child Welfare Services Case Management System (CWS/CMS)***
Company Location	***Sacramento, CA***
Role on Project	***System Tester***
Software/Hardware Used	***Manual Testing, Lotus Notes***
Project Description	

California CWS/CMS project	***02/2006 – 10/2008***

The Child Welfare Services Case Management System (CWS/CMS) application is used by all 58 counties in the State of California to automate the functions of county child welfare offices. The system has over 19,500 users, handling a total of 1 million cases and 4 million referrals, and provides for a centralized statewide system that allows child welfare workers to share information on child abuse cases.

Role Description

Kim was part of the System Test team for the CWS/CMS application. Her responsibilities included:

- ***Testing the CWS/CMS application for proper functionality by submitting defects and testing the fixes.***
- ***Understanding design and code changes, drafting test scenarios, executing test scenarios and updating the existing test case suite with current application functionality.***
- ***Test team facilitator for County Test Workshop (User Acceptance Testing). Responsibilities included assisting the county testers with the new functionality, addressing and documenting issues as they arose and managing the status of all open issues.***
- ***Managing the Full System Test (FST) project, including leading a team of nine people to complete the activities required for maintaining a comprehensive suite of test cases. Additionally, implementing a process improvement by combining the current FST procedure and summary documents into one Master document.***
- ***Understanding web based technologies like HTML, Javascript to write appropriate test scripts to test online web pages.***
- ***Verifying sufficient test coverage of the application and traceability to the requirements.***
- ***Document creation for test team deliverables, including Release Test Plans and Test Exit Reports.***
- ***Participating in process improvement discussions and decisions based on strong understanding of the testing processes and procedures.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of California***		
City, State	***Irvine, CA***		
Degree	***Bachelor of Arts***	***Completion Date***	***06/2001***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Java, Microsoft .NET, Unisys MAPPER***
Hardware	***Windows/Intel based PCs***
Software	***IBM DB2 Content Manager, Tivoli Access Manager***
Tools	***Rational ClearCase, Rational ClearQuest, Rational Requisite Pro, Microsoft Office Suite, Tivoli Workload Scheduler/Job Scheduling Console, WinSCP, Putty, Team Foundation Server, Test Director, Lotus Notes***
Databases	***DB2, Oracle***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***California Department of Child Support Services***
Contact Name	***Lisa Close, Application Requirements/Testing Manager***
Phone Number	***(916) 464-5447***
Fax Number	***n/a***
Email Address	***Lisa.Close@dcss.ca.gov***

Client Reference 2

Company Name	***CA State Controller's Office***
Contact Name	***Mary Margaret Wilson, Data Processing Manager III***
Phone Number	***(916) 322-7329***
Fax Number	***n/a***
Email Address	***mmwilson@sco.ca.gov***

Client Reference 3

Company Name	***Child Welfare Services/Case Management System***
Contact Name	***Cheryl Davis, Retired***
Phone Number	***(530) 755-2254***
Fax Number	***n/a***
Email Address	***donaldpluscheryl@gmail.com***

Robert Holguin

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Robert Holguin***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***3***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Robert has over a decade of experience with system implementations and integrations for child support programs in multiple states, including ten years working directly on the State of California Department of Child Support Services CSE system. He has extensive experience with large-scale systems projects, managing change across and within the organization while keeping high quality standards, including developing and implementing automated and manual test plans. His deep experience in child support automated financial transaction processing testing was essential to the successful implementation of the CSE State Disbursement Unit (SDU). During the CSE implementation phase, this was with Bank of America as the initial business partner; the SDU was subsequently transitioned to a partnership with Wells Fargo Bank during the maintenance phase. Robert led the system testing effort for Federal certification of all FSA88 and PRWORA functionality as specified in the Administration for Children and Families' (ACF) publication "Automated Systems for Child Support Enforcement: A Guide for States 2000," and knows the current 2009 version well. He also has experience as an application developer on the New Mexico child support enforcement system (CSES).

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

California CSE project	***12/2013 – Present*** ***02/2005 – 05/2013***
Company Name	***State of California, Department of Child Support Services***
Company Location	***Rancho Cordova, CA***
Role on Project	***System Test Analyst III***
Software/Hardware Used	***Windows/Intel based PCs, AIX/IBM RS 6000, WebSphere, IBM DB2 Content Manager, Tivoli Access Manager, Kofax Capture/KCNS, InfoPrint Manager, Adobe LiveCycle ES3, MQ Series, iText, Hyperion, struts, VBScript, IBM Rational Application Developer, Eclipse, Microsoft Visual Studio, Rational ClearCase, ClearQuest, Requisite Pro, Microsoft Office Suite, HP ALM and HP UFT, IBM Rational Suite, Tivoli Workload Scheduler, SFTP-WinSCP, Putty***
Project Description	
The CSE project is one of the largest information technology projects ever undertaken by the State of California, peaking with more than 300 consulting staff and 300 client counterparts over eight years. The scope of the project included designing, developing, implementing, and integrating county systems into a single state-of-the-art child support enforcement system to meet federal certification requirements mandating a single CSE system per state. Fully implemented in late 2008, the CSE system manages 1.6 million child support cases and supports more than 10,000 child support enforcement caseworkers in collecting approximately $3 billion per year for California children.	
Role Description	
As System Test Analyst III, Robert performs software requirements analysis with the client team representatives. He constructed master data sets from several data sources to be used for testing and regression testing. He leads the automation regression team which is tasked with test case development and automated test execution using HP Application Life Cycle Management (ALM) and Quick Test Professional(QTP). He also provides first-tier support for QA system test technical/environmental and functional issues. Robert provided leadership of the system testing effort for Federal certification of all FSA88 and PRWORA functionality as specified in the Administration for Children and Families' (ACF) publication "Automated Systems for Child Support Enforcement: A Guide for States 2000".	

New Mexico CSES project	***11/2002 – 02/2005***
Company Name	***State of New Mexico - Human Services Department***
Company Location	***Santa Fe, NM***
Role on Project	***Application Developer***
Software/Hardware Used	***Windows/Intel based PCs, IBM-MVS(OS/390), IBM-AS400, IBM DB2 Database, COBOL, COOL:Gen Computer Aided Software Engineering tool, IBM DB2 Command Editor***
Project Description	
This project entailed the custom build of a child support enforcement system (CSES) for the State of New Mexico, and a Maintenance and Operations phase from January 2001 to May 2005. The system was developed as an IBM mainframe program using COBOL, COOLgen, and DB2. CSES provides support for over 66,000 cases and over 340 full-time staff. Through the CSES system, the State of New Mexico distributes approximately $114,839,125 annually.	
Role Description	

New Mexico CSES project	***11/2002 – 02/2005***
As an Application Developer, Robert performed software design, development, implementation, and modification of the CSES application in an integrated environment. He also provided Level-3 Help Desk support for the CSES application, database, infrastructure, and project operations.	

Coventry Workers' Comp Services	***05/2013 – 12/2013***
Company Name	***Coventry Health Care, An AETNA Company***
Company Location	***West Sacramento, CA***
Role on Project	***Senior QA Consultant***
Software/Hardware Used	***IBM DB2 HP ALM and HP UFT, Windows/Intel based PCs, Citrix, Java, Kronos, Java, VBScript***
Project Description	
Coventry Workers' Comp Services offers workers' compensation cost and care management solutions for employers, insurance carriers, and third-party administrators. With roots in both clinical and network services, the BR 4 system leverages more than 30 years of industry experience, knowledge, and data analytics. BR4 is an integrated suite of solutions, powered by technology to enhance network development, clinical integration, and operational efficiencies at the client's desktop, with a focus on total claims cost.	
Role Description	
As a Senior QA Consultant, Robert led the quality assurance team in test case development and automated test execution using HP Quality Center/Application Life cycle Management. He developed new automated test scripts and maintained current automated test scripts using VBScript and Visual Basic for Applications.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***New Mexico State University***		
City, State	***Las Cruces, NM***		
Degree	***Bachelor of Arts, Psychology***	***Completion Date***	***12/1991***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***ITIL Foundation in IT Service Management, Date Completed: 06/2014***
- ***Certified Software Tester, CSTE, Date Completed: 02/2017***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Java, Visual Basic, korn shell, ant, IBM Rational Application Developer, Microsoft Visual Studio, Web Services, synchronous and asynchronous queues with MQ Series***
Hardware	***Windows/Intel based PCs, AIX/IBM RS 6000***
Software	***WebSphere, IBM DB2 Content Manager, Tivoli Access Manager, Kofax Capture/KCNS, InfoPrint Manager, Adobe LiveCycle ES3, MQ Series, iText, Hyperion, struts, VBScript, Adobe Captivate***
Tools	***IBM Rational Application Developer, Eclipse, Microsoft Visual Studio, Rational ClearCase, ClearQuest, Requisite Pro, Microsoft Office Suite, HP ALM and HP UFT, IBM Rational Suite, Tivoli Workload Scheduler, SFTP-WinSCP, Putty***
Databases	***DB2, Oracle***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***California Department of Child Support Services***
Contact Name	***Lisa Close, Application Requirements/Testing Manager***
Phone Number	***(916) 464-5447***
Fax Number	***N/A***
Email Address	***Lisa.Close@dcss.ca.gov***

Client Reference 2

Company Name	***California Department of Child Support Services***
Contact Name	***Dinesh Joshi, Senior Information Systems Analyst***
Phone Number	***(916) 464-5710***
Fax Number	***n/a***
Email Address	***Dinesh.Joshi@dcss.ca.gov***

Client Reference 3

Company Name	***California Department of Child Support Services***
Contact Name	***Paul Hagge, Senior Information Systems Analyst***
Phone Number	***(916) 464-7055***
Fax Number	***n/a***
Email Address	***Paul.Hagge@dcss.ca.gov***

Santosh Padankanti

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Santosh Kumar Padakanti***	**Key Personnel: (Yes/No)**	***Yes/No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***4***	**# of Years with Firm:**	***7 years***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Santosh has over 12 years of software development experience using JAVA, J2EE, Spring MVC, Spring REST, SOAP Web services, Hibernate, IBM, WebSphere Process Server, and Tivoli Workload Scheduler. He is versed in all aspects of the software development life cycle (SDLC), and focuses on design and development work areas. He successfully led the interface development team in the Oregon Origin project. He also led teams in the Nevada Healthcare Reform Eligibility Engine project, and for an AIG project.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***05/2016 – Present***
Company Name	***Department of Justice – State of Oregon***
Company Location	***Salem, Oregon***
Role on Project	***Senior Developer***
Software/Hardware Used	***Java 1.8, JSP, Struts 1.3, Servlets, Spring, Spring REST, Hibernate, Ant, Eclipse, DB2, Tivoli Workload Scheduler, SOAP***

Project Description

This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.

Role Description

- ***Involved in understanding the requirements***
- ***Involved in Batch and Interface design***
- ***Involved in setting up the batch environment***
- ***Involved in setting creating the scripts required for batch execution***
- ***Involved in configuring batches in Tivoli Workload Scheduler for automating***
- ***Involved in understanding and modifying the framework related changes***
- ***Involved in Code reviews***

Nevada HCR-EE project	***05/2015 – 04/2016***
Company Name	***Division of Welfare and Supportive Services***
Company Location	***Carson City, Nevada***
Role on Project	***Senior Developer***
Software/Hardware Used	***Java, JSP, Servlets, Spring, Spring MVC, Spring REST, Maven, Eclipse, DB2, Jenkins, SOAP***

Project Description

The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.

Role Description

- ***Involved in understanding the requirements***
- ***Involved in understanding the EGL code to convert registration and case info modules***
- ***Involved in Registration and Case Info module development.***
- ***Took the lead on Registration module and CASE Info module in development and unit testing***
- ***Involved in SYT and UAT testing support***

Nevada HCR-EE project	***05/2015 – 04/2016***

- ***Involved in addressing performance issues in PRODUCTION region***
- ***Involved in addressing production defects***

AIG	***07/2012 – 04/2015***
Company Name	***AIG***
Company Location	***USA***
Role on Project	***Senior Consultant***
Software/Hardware Used	***IBM Websphere Process Server, IBM Data power, Java 1.6, IBM MQ, SOAP Webservices***
Project Description	
A Global Insurance Giant as a part of the program to implement a single solution for its claims processing, enagaged Deloitte to support & maintain the middleware components. Besides stabilizing the core application, Deloitte middleware team was responsible for fixing issues to ensure homogenity across global roll outs	
Role Description	

- ***Involved triaging and resolving day to day issues***
- ***Identify the code improvements and fix***
- ***Fix production defects***
- ***Train new team members***
- ***Analyze and provide estimates for new enhancements***
- ***Coordinate with Client and Deloitte team for enhancement development.***

Canon One Service	***06/2011 – 06/2012***
Company Name	***Canon Europe***
Company Location	***Europe***
Role on Project	***Consultant***
Software/Hardware Used	***IBM WESB 7.0.0.3, Oracle EBS 11.5.8, Siebel***
Project Description	
Client is a world-leading innovator and provider of imaging and information technology solutions for the home and office environments. ***Project goal is to implement and deliver optimized end-to-end contact center supported by a single solution across Europe covering all tiers using Siebel***	
Role Description	

- ***Involved in understanding the requirements***
- ***Designed and Developed the integration framework with integration specification and canonical data model***
- ***Developed most complex business and mediation flows Using WESB and WPS. Used most of the bindings (MQ, JMS, SCA, HTTP and SOAP) and adapters (File, FTP, JDBC, Oracle E-Business Suite, Email etc…). Developed common utilities like core java components, logging & exception handling framework, Custom Data Handlers and Security policies***
- ***Involved in reviewing peers code***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Vasavi College Of Engineering***		
City, State	***Hyderabad, Telangana, India***		
Degree	***Master in Computer Applications***	***Completion Date***	***06/2003***

Institution Name	***Nishitha Degree College***		
City, State	***Nizamabad, Telangana, India***		
Degree	***Bachelors in Computer Science***	***Completion Date***	***06/2000***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Windows and Linux***
Hardware	***n/a***
Software	***Java 1.8, Struts, JSP, Servlets, EJB, Spring, Spring REST, SOAP, Webspherer Application Server, Websphere process Server, Tivoli Workload Scheduler***
Tools	***n/a***
Databases	***DB2, Oracle, MS Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Oregon, Department of Justice***
Contact Name	***James Wollenweber***
Phone Number	***(971) 915-5114***
Fax Number	***n/a***
Email Address	***James.j.wollenweber@doj.state.or.us***

Client Reference 2

Company Name	***AIG***
Contact Name	***Srinivasan Madhira***
Phone Number	***(973) 402-3124***
Fax Number	***n/a***
Email Address	***Srinivasan.Madhira@aig.com***

Client Reference 3

Company Name	***AIG***
Contact Name	***Ravi Akella***
Phone Number	***(973) 402-3724***
Fax Number	***n/a***
Email Address	***Ravi.Akella@aig.com***

Mike Moreno

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Mike Moreno***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Manager***		
# of Years in Classification:	***1***	**# of Years with Firm:**	***1***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mike Moreno, joined Deloitte Consulting LLP in 2016 as a Human Capital Manager. He brings over 10 years of experience in organization transformation activities including designing and deploying child support payment portals, crafting stakeholder communications, and providing insight into governmental policy. Prior to joining Deloitte, Mike was the Chief Executive Officer of Civic Communications LLC, a communications and management firm providing services with expertise in research, training, and technical assistance through a network of professionals with expertise in policymaking, branding, marketing, communication, and organizational change.

In addition to his role at Civic Communications, Mike joined CiviTek in 2008 to manage the Resolution Team, an escalated Child Support Help Desk in Florida. From 2009 to 2016, he led all Marketing and Program Management activities for the company's various child support and government related e-commerce services.

Mike is an active leader in the child support community and currently serves on the Board of Directors for the National Child Support Enforcement Association (NCSEA) and the Eastern Regional Interstate Child Support Association (ERICSA). Mike earned both his Bachelor of Music degree and Master of Business Administration degree (MBA) at Florida State University.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***08/2016 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Training & Implementation Deputy Lead***
Software/Hardware Used	***Microsoft Office Suite, Adobe Captivate, Adobe RoboHelp***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Mike Moreno is the deputy lead for all Implementation and Training related project activities, including end-user training, technical training, online procedures, rollout strategy, site support, help desk support, and cutover activities planning. Mike also leads the team developing online procedures which utilizes an iterative process to analyze over 700 legacy procedures and roughly 500 functional design documents, draft new or revised procedures, and validate drafted procedures with the client. As the procedures are validated, they are imported in the online help authoring tool, Adobe RoboHelp. RoboHelp is mapped to every page and section in the new system to enable context sensitive help accessible by end-users.	

Civic Communications, LLC	***06/2009 – 08/2016***
Company Name	***Civic Communications, LLC***
Company Location	***Portland, OR***
Role on Project	***Chief Executive Officer***
Software/Hardware Used	***Adobe Creative Suite, Microsoft Office Suite, Intuit QuickBooks***
Project Description	
Civic Communications was formed in 2009 to support civic-minded organizations. The company specializes in developing educational and training materials, communication plans, toolkits, and guidance documents. For organizations wanting to build in-house training capacity, they offer curricula with visual-rich slides, in-depth scripts, and print-ready handouts. Materials are customized based on the goal and audience.	
Role Description	
• ***Successfully managed 50+ projects for public sector clients, developing and implementing a variety of training resources*** • ***Led expansion into child support providing training, communication, and branding consulting services*** • ***Extensive work with public health clients to develop training curricula, as well as outreach and educational materials*** • ***Recognized in the child support community as a highly engaging and dynamic facilitator, trainer, speaker, and coach.***	

FACC Services Group, LLC DBA CiviTek	***04/2009 – 02/2016***
Company Name	***FACC Services Group, LLC DBA CiviTek***
Company Location	***Tallahassee, FL***
Role on Project	***Marketing and Program Manager***
Software/Hardware Used	***Microsoft Office Suite, Adobe Creative Suite, Salesforce CRM***
Project Description	
CiviTek provides payment and financial solutions, court case management and technical support to governments, large and small. They offer solutions that maximize operational efficiency and provide the ability to better connect public service to its citizens.	
Role Description	
• ***Identified new verticals and developed new business relationships that continue to generate annual throughput of $30+ million*** • ***Tripled assets under management for a government investment pool that currently stands at $1.5+ billion in assets and represents 56+ governmental entities*** • ***Marketed and managed child support and other government related e-commerce products that are responsible for the handling of $250+ million/year***	

FACC Services Group, LLC DBA CiviTek	***04/2008 – 04/2009***
Company Name	***FACC Services Group, LLC DBA CiviTek***
Company Location	***Tallahassee, FL***
Role on Project	***Child Support Resolution Team Program Manager,***
Software/Hardware Used	***Microsoft Office Suite***
Project Description	
CiviTek provides payment and financial solutions, court case management and technical support to governments, large and small. They offer solutions that maximize operational efficiency and provide the ability to better connect public service to its citizens.	
Role Description	
• ***Managed an escalated child support call center environment, handling 12,000+ inquiries/year*** • ***Developed, implemented, and managed best practices and improved processes in business operations, which resulted in a program output increase of ~7%***	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Florida State University***		
City, State	***Tallahassee, FL***		
Degree	***Master of Business Administration***	***Completion Date***	***04/2008***

Institution Name	***Master of Business Administration***		
City, State	***Tallahassee, FL***		
Degree	***Bachelor of Music***	***Completion Date***	***04/2004***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***n/a***
Hardware	***n/a***
Software	***Adobe Creative Suite, Microsoft Office Suite, Adobe RoboHelp***
Tools	***n/a***
Databases	***n/a***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Oregon, Department of Justice (Child Support Enforcement)***
Contact Name	***Karen Coleman, Project Executive***
Phone Number	***(503) 947-4311***
Fax Number	***n/a***
Email Address	***karen.coleman@doj.state.or.us***

Client Reference 2

Company Name	***State of Oregon, Department of Justice (Child Support Enforcement)***
Contact Name	***Tammy Kramer***
Phone Number	***(503) 947-4321***
Fax Number	***n/a***
Email Address	***tammy.kramer@doj.state.or.us***

Client Reference 3

Company Name	***FACC Services Group, LLC DBA CiviTek***
Contact Name	***Peggy Ball***
Phone Number	***(850) 577-4582***
Fax Number	***n/a***
Email Address	***pball@flclerks.com***

Pratik Dutta

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Pratik Dutta***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Business Technology Analyst***	
# of Years in Classification:	***2***	**# of Years with Firm:**	***2***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Pratik is a Consultant with hands on experience in various stages of system development including requirements definition, design and writing specifications, technical architecture, development, and testing. In his two years on the Oregon Origin project he has focused on gathering and developing detailed data reporting and business intelligence requirements, and developing the design for the reporting/data warehouse. Pratik also developed string and system test cases to test the system user pages and reports.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***10/2015 - Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Reporting/Data Warehouse Analyst and Tester***
Software/Hardware Used	***IBM Rational Jazz, IBM Cognos***

Project Description:

This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.

Role Description

In his roles on this project, Pratik's responsibilities included:

- ***Developed detailed reporting/data warehouse and business intelligence requirements through collaborative Requirements Refinement Sessions with stakeholders.***
- ***Developed Requirements Traceability Matrix for detailed requirements across various process areas, leveraging the Automated Systems for Child Support Enforcement: A Guide for States 2009.***
- ***Developed functional design and contributed to the development of technical design for reporting/data warehouse and business intelligence during the System Design phase.***
- ***Developed string and system test cases to test reports and associated pages within the CSE system, Origin. System testing included validation of OLAP database after ETL transaction with OLTP base database.***
- ***Contributed development of training deliverables associated to IBM Cognos.***
- ***Collaborated with stakeholders to identify Clarification Requests and Change Requests for the reporting and data warehouse solution.***

Amgen R&D project	***09/2014 – 10/2015***
Company Name	***Amgen Inc.***
Company Location	***Thousand Oaks, California***
Role on Project	***Graduate Operations Intern***
Software/Hardware Used	***Arena Simulation, SAP***

Project Description

Amgen Inc. is a global pioneer in Biologics and Therapeutics. As a part of Research and Development R&D effort towards discovery and commercial production of high value biologics the firm initiated cost effective technologies to replace traditional bio-reactor processes. The project involved process optimization and Value Stream Mapping for the R&D effort across multiple experiment team with the end goal of cutting R&D costs of high potential drugs by $2 million per year.

Role Description

Pratik's responsibilities included:

- ***Functional team member to develop real-time analytics based energy optimization system for pilot plant in Thousand Oaks, California.***
- ***Developed strategy framework to roll-out system globally across six (6) sites.***
- ***Independently led resource, time, and work study of micro cloning and sample development in Research and Development (R&D) division, which was the first of its kind.***

Amgen R&D project	*09/2014 – 10/2015*

- ***Simulated the process to recognize R&D savings and resource optimization across 5 years bolstered by various statistical models and lean principles.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	*University of Southern California, Viterbi School of Engineering*		
City, State	*Los Angeles, CA*		
Degree	*Master of Science, Industrial and Systems Engineering*	*Completion Date*	*05/2015*

Institution Name	*Sathyabama University*		
City, State	*Chennai, India*		
Degree	*Bachelor of Engineering, Mechanical and Production Engineering*	*Completion Date*	*05/2013*

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	*Arena Simulation, SAP*
Hardware	*Windows 8*
Software	*BM Rational Jazz Suite, IBM Cognos*
Tools	*Microsoft Excel, Microsoft PowerPoint, Microsoft Word*
Databases	*N/A*

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Oregon Department of Justice***
Contact Name	***Gene Gustin***
Phone Number	***(971) 915-5122***
Fax Number	***n/a***
Email Address	***Gene.Gustin@doj.state.or.us***

Client Reference 2

Company Name	***Oregon Department of Justice***
Contact Name	***James J Wollenweber***
Phone Number	***(971) 915-5114***
Fax Number	***n/a***
Email Address	***James.J.Wollenweber@doj.state.or.us***

Client Reference 3

Company Name	***Oregon Department of Justice***
Contact Name	***Amy Desmond***
Phone Number	***(971) 915-5267***
Fax Number	***n/a***
Email Address	***amy.desmond@doj.state.or.us***

Natalie Martella

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Natalie Martella***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Consultant***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***3***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Natalie Martella has worked in child support projects since beginning her career with Deloitte. She started her career as an open system analyst on the Pennsylvania PACSES project. Natalie has been with the Oregon Origin project since it started in October of 2015, where she is the case management and locate lead. She led over 45 JAD sessions covering over 600 requirements during the design phase. Natalie is currently leading system testing activities, managing testers and developers to successfully run over 350 test cases. Natalie brings a first-hand understanding of the CA CSE system being transferred, as she used the CA CSE Proof of Concept system to guide her JAD sessions in Oregon. She also understands areas where states can differ, given her work in two CSE programs. She brings passion, energy, and a combination of technical and interpersonal skills to any project. Natalie has been an integral part of many teams and has learned to communicate and collaborate effectively with others in order to achieve a common goal.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***10/2015 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Case Management and Locate Lead/Testing Lead***
Software/Hardware Used	***RQM, DOORs, RTC, Reverse Sequel***

Project Description

This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.

Role Description

- ***Used previous experience to strategize and led client meetings to design Origin worker pages and develop functional requirements for managing child support enforcement cases***
- ***Worked with various business units to develop customer strategies and improve the end user experience***
- ***Team Lead; solution design related to automation of child support case management system including interfaces with external partners for locate services***
- ***Led over 45 case management and locate JAD sessions covering over 600 requirements during the design phase***
- ***System Testing Lead managing testers and developers to successfully run over 350 test cases***

Pennsylvania PACSE project	***09/2014 – 09/2015***
Company Name	***Commonwealth of Pennsylvania Child Support Enforcement System***
Company Location	***Harrisburg, PA***
Role on Project	***Open System Analyst***
Software/Hardware Used	***Mainframe, Open Systems Applications (.NET, Oracle), MS Access, MS Excel, MS PowerPoint, MS Word, Team Foundation Server (TFS), Sparx Enterprise Architect***

Project Description

The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.

Role Description

As an analyst on the Open Systems team of PACSES, Natalie performed the following activities:

- ***Participated and facilitated client discussions in order to complete system requirements, general system design, and detailed system design activities; including gathering and revising requirements, initial design efforts comprising of start-up documentation and mock-ups.***

Pennsylvania PACSE project	***09/2014 – 09/2015***

- ***Responsible for monitoring and tracking project initiative health and metrics by generating reports to track the actual hours and costs burned by the initiative team versus the amounts projected at the start of the initiative.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Pittsburgh***		
City, State	***Pittsburgh, Pennsylvania***		
Degree	***Bachelor of Business Administration, Management Information Systems and Marketing***	***Completion Date***	***05/2014***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***SQL***
Hardware	***Windows***
Software	***Visual Studio: Team Foundation Server (TFS), Balsamiq, Sparx Enterprise Architect***
Tools	***RQM, DOORs, RTC, Reverse Sequel***
Databases	***Oracle, Microsoft SQL Server***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Oregon, Department of Justice***
Contact Name	***Gene D. Gustin***
Phone Number	***(541) 580-1508***
Fax Number	***N/A***
Email Address	***Gene.Gustin@doj.state.or.us***

Client Reference 2

Company Name	***State of Oregon, Department of Justice***
Contact Name	***Karen Coleman***
Phone Number	***(971) 915.5175***
Fax Number	***N/A***
Email Address	***karen.coleman@doj.state.or.us***

Client Reference 3

Company Name	***Commonwealth of Pennsylvania, Department of Human Services (DHS), Bureau of Child Support Enforcement (BCSE)***
Contact Name	***Joyce Match***
Phone Number	***(717) 705-5104***
Fax Number	***(717) 705-5197***
Email Address	***joyceMatch@pacses.com***

Arun Elangovan

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Arun Elangovan***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***6***	**# of Years with Firm:**	***10***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Arun is a Project Delivery Specialist with 8 years of experience working on Child Support Projects. Arun is currently on the Oregon Origin project on the Interface Technical team where he is developing the child support partner interfaces. Arun completed mock-up screenshots, worked through design and development for the partner interfaces, and assisted in the financial design delivery. Arun is the key contact person for all inter-agency activities. Arun has the experience of managing and leading a team as demonstrated during Florida CAMS project. He started his child support enforcement career on the Florida CAMS project, where he led a functional and technical interfaces team, and prepared technical design documents for the conversion, forms, and reports teams.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***04/2016 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Technical / Functional Business Analyst (BA)***
Software/Hardware Used	***JAVA, IBM Cognos, IBM Websphere, ETL-Infosphere, Hp Extreme, IBM Content Manager***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
As Technical / Functional BA, Arun performs the following responsibilities: • ***Co-lead for the Interface Technical team by coordinating the development of interfaces.*** • ***Functional point of contact for all child support interfaces.*** • ***Design activities for major interfaces, such as IV-A, IV-E CSENET, and FCR.*** • ***Coordinate with external agencies for any queries and update child support design to the interface files.*** • ***Create functional design documents for major interfaces.*** • ***Create functional design document for batches, and screens across all process areas.*** • ***Knowledge share activities to the technical interface team in interface design and technical document preparation during the design phase of the project.*** • ***Involved in preparing interface roll out strategy and working closely with the Agency's team.*** • ***Key contact person for all inter-agency activities.*** • ***Extensively coordinate for connectivity and system testing with external agencies.*** • ***Set up the FTP process and file names coordination.*** • ***Coordinate the system testing defects resolution activities by analyzing and resolving the issue.***	

Florida CAMS project	***12/2009 – 03/2016***
Company Name	***State of Florida, Florida Department of Revenue, Child Support Enforcement Division***
Company Location	***Tallahassee, FL***
Role on Project	***Functional and Technical Team Member***
Software/Hardware Used	***SAP Customer Relationship Management 2007 (CRM 6), SAP ERP Central Component (ECC), Business Intelligence (BI), Enterprise Portal (EP) and SAP Business Objects (DQXI) as well as non-SAP solutions including Serena Requirement Traceability Management (RTM) tool and Crystal Report***
Project Description	
The CAMS project implemented full CSE functionality through configuration and customization of an SAP/COTS solution. Deloitte executed the full SDLC project through deployment and federal certification into maintenance and operations. The Florida CSE program manages more than 656,000 child support	

Florida CAMS project	***12/2009 – 03/2016***

cases through roughly 4,000 representatives in 43 service sites (including external agencies) spread throughout 65 counties.

Role Description

Arun started as a technical resource on the project and prepared technical design documents for Conversion, Interfaces, Forms, and Reports by reviewing the functional design documents. As he gained knowledge about the child support system, he took the functional role for interfaces as well. He contributed as a technical and functional role for all child support interfaces. Arun worked closely with agency resources to capture the design requirements in functional and technical documents, then he developed the code to meet the requirements. He also led the interface team with four team members.

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***PSG College of Technology***		
City, State	***Coimbatore, India***		
Degree	***Bachelor of Engineering***	***Completion Date***	***05/2007***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***SAP, Java***
Hardware	***Windows 2000 Server , Windows 2000, Windows XP, Linux/Unix , Windows 10, Windows 9***
Software	***SAP CRM, SAP ECC, SAP BI, SAP Data Services, Java***
Tools	***Microsoft Project Central***
Databases	***SAP Middleware, Oracle 9i***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Contact Name	***Alan Cole, Business Analyst***
Phone Number	***(850) 766-0862***
Fax Number	***n/a***
Email Address	***colealan@dor.state.fl.us***

Client Reference 2

Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Contact Name	***Danielle Fredette***
Phone Number	***(850) 617-8233***
Fax Number	***n/a***
Email Address	***fredettd@dor.state.fl.us***

Client Reference 3

Company Name	***Oregon Department of Justice, Child Support Enforcement***
Contact Name	***Mackenzie Wright***
Phone Number	***(971) 915-5144***
Fax Number	***n/a***
Email Address	***Mackenzie.Wright@doj.state.or.us***

Bianca Blanco

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Bianca Blanco***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***2 months***	**# of Years with Firm:**	***2 years***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Bianca is a Senior Consultant in the Human Capital Digital Enablement practice with over 10 years of Organizational Development and Change Management experience. She has lead end-user adoption activities (change readiness, leadership alignment, communications and training) for enterprise-wide digital transformations. She has also worked in a variety of industries including Public Sector, High-Tech, Financial Services, Entertainment and Utilities. Her projects include: change readiness and management for technology adoption, talent strategy development, succession planning program design and implementation, and organizational competency design.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***07/2017 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Implementation Lead***
Software/Hardware Used	***Custom ERP – JAVA Solution, Adobe Captivate***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Implementation Lead for state-wide implementation of child support program and system. Oversees planning and execution of Help Desk and Site Support during Implementation period. Works closely with Agency to facilitate identification and execution of interim business processes during Implementation period. In this role, she uses Adobe Captivate, which is similar to Articulate and Camtasia.	

Workday Implementation	***03/2017 – 07/2017***
Company Name	***Walmart***
Company Location	***Bentonville, AR***
Role on Project	***Training Lead, Mexico & Central America***
Software/Hardware Used	***Workday***
Project Description	
End-user training design for Workday implementation in Latin American markets.	
Role Description	
Designed training strategy for Mexico and Central American markets as part of overall user adoption strategy; managed team of Deloitte (Mexico & USI) and client resources to develop end-user training content.	

Salesforce Implementation	***03/2016 – 03/2017***
Company Name	***City National Bank***
Company Location	***Los Angeles, CA***
Role on Project	***Organizational Change Management Lead***
Software/Hardware Used	***Salesforce.com***
Project Description	
Change Management for enterprise-wide implementation of Salesforce.com.	
Role Description	

Salesforce Implementation	***03/2016 – 03/2017***
Developed and executed Organization Change Management for Agile implementation of Salesforce.com, with a focus on executive and leadership alignment and communications strategy and development. Prepared end users for phased go-live through change impacts assessment, leadership workshops, and pre/post go-live communications.	

Intel project	***10/2015 – 02/2016***
Company Name	***Intel***
Company Location	***San Jose, CA***
Role on Project	***Change Management Consultant***
Software/Hardware Used	***N/A***
Project Description	
Talent strategy development with focus on future workforce capabilities for growing business unit.	
Role Description	
Developed hypotheses on talent supply/demand synthesized from trends in computing industry. Outlined talent strategy recommendations based on client talent data, interviews, labs/working sessions, and external benchmarking of talent practices at leading technology companies.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Claremont Graduate University***		
City, State	***Claremont, CA***		
Degree	***M.A., Organizational Behavior***	***Completion Date***	***12/2010***

Institution Name	***University of California, Los Angeles***		
City, State	***Los Angeles, CA***		
Degree	***B.A., Psychology***	***Completion Date***	***06/2007***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***Prosci Change Management Certification, 07/2014***
- ***Korn Ferry / Lominger Leadership Architect, 03/2014***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Custom ERP – JAVA Solution, Workday, Salesforce.com***
Hardware	***n/a***
Software	***MS Office Suite***
Tools	***n/a***
Databases	***n/a***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Walmart***
Contact Name	***Shellene Beacham***
Phone Number	***479-715-7356***
Fax Number	***n/a***
Email Address	***Shellene.Ekins@walmart.com***

Client Reference 2

Company Name	***City National Bank***
Contact Name	***John Zieglgansberger***
Phone Number	***(213) 673-8744***
Fax Number	***n/a***
Email Address	***John.Zieglgansberger@cnb.com***

Client Reference 3

Company Name	***City National Bank***
Contact Name	***Hovig Margossian***
Phone Number	***(213) 673-8704***
Fax Number	***n/a***
Email Address	***Hovig.Margossian@cnb.com***

Arun Gnanavel

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Arun Gnanavel***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Analyst***	
# of Years in Classification:	***03***	**# of Years with Firm:**	***1.5***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Arun Gnanavel has 14+ years of software development experience in Analysis, Design, Development, Support and Unit Testing of application software in Mainframe and Web based environments with client / server architectures using Java & J2EE technologies such as Spring, JDBC and XML. He is experienced in using code generation and code analysis tools and has done extensive work experience in supporting Insurance industry. Worked in Life, Annuity, Health, P &C and Auto products using VANTAGE-ONE® product. Additionally, Arun has experience in SQL, PL/SQL and Stored Procedures in DB2, also trained and worked in SQL query tuning for performance improvement, including 5+ years of experience in Web technologies using Java Enterprise Edition Solutions. He has experience with the Nevada DWSS environment, including NOMADS, through his work as senior developer and deployment lead for the DWSS SNAP TANF Expansion project and the DWSS SSBM project.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

NV SNAP TANF Expansion Project	***12/2015 – 08/2017***
Company Name	***State of Nevada, Division of Welfare and Supportive Services***
Company Location	***Carson City, NV***
Role on Project	***Senior Developer and Deployment Lead***
Software/Hardware Used	***Java EE, Spring Framework, DB2, EGL, COBOL, CICS, IBM Websphere Application server, IBM Websphere MQ , Sonar, XML, JSON, SOAP UI, Bugzilla, Perforce, SVN, Eclipse***

Project Description

The State contracted with Deloitte to design, develop, and implement SNAP/TANF business rules and modernize the caseworker portal. The SNAP/TANF rules leveraged the integration of the ILOG based rules engine with NOMADS. The project scope also included removal of HATS macros, conversion of the Struts-based user interface to Spring MVC framework, and integration with existing NOMADS modules for prior-medical, recertification, alerts and triggers (OASIS and MMIS), and NCP referrals.

Role Description

- ***Analyze the Business requirements and arrive the technical solutions.***
- ***Document the solutions and work towards getting them approved from all Client Stakeholders.***
- ***Work towards delivering the Code as per the solutions mentioned in the approved DUVs and PMNs***
- ***Support DWSS Operations team to deploy the delivered Software into SIT, UAT, Pre Prod (Training) and Prod Environments.***
- ***Support DWSS Testing team for their UAT and Pre Prod testing.***
- ***Create Adhoc/Data analytic SPUFI reports for Support Eligibility & Payments team.***
- ***Support DWSS Help Desk team for any post production issues.***

Nevada SSBM project	***06/2014 – 12/2015***
Company Name	***State of Nevada, Division of Welfare and Supportive Services***
Company Location	***Carson City, NV***
Role on Project	***Senior Developer***
Software/Hardware Used	***EGL, Java, Spring Batch, Spring MVC, Java Script, MVS COBOL, SPUFI, DB2, CICS, MQ Series, Crystal Reports***

Project Description

For the Supported State-Based Marketplace (SSBM) project, the State needed a solution to process eligibility and enrollment for medical benefits applications referred from the federal hub and also send denied applications to the federal hub. The solution also provided the client's eligibility for non-ESI MEC. The client received approximately 62,000 referrals from SSBM and also referred approximate 155,000 applications to SSBM with the help of an integrated eligibility system that serves core public assistance programs including medical assistance, cash assistance, and food benefits.

Role Description

- ***Analyze the Business requirements and arrive the technical solutions.***
- ***Prepare DUVs and PMNs.***
- ***Develop and Unit test the software as per DUVs and PMNs.***
- ***Provide SIT, UAT, Pre prod and Prod support.***

Modernization of Benefit Payment Systems	***07/2012 – 06/2014***
Company Name	***State Farm® Group of Companies***
Company Location	***Bloomington, IL and Dallas, TX***
Role on Project	***Project Lead***
Software/Hardware Used	***Java EE, COBOL, JCL, CICS, Assembler, MQ Series, Java Script, ReXX, DB2, VSAM, DB2 Stored Procedure, IMS-DB, VANTAGE-ONE®, File-AID: Mvs, Db2, Xpeditor, Changeman, Easytrieve Plus, Cognos, Crystal Reports***
Project Description	
State Farm had devised the program Customer Driven Evolution to shift all its application "on a Platform" called ICP so that it has the ability to acquire and service all of their State Farm insurance and financial services products across all access points. For that, a Capacity Build exercise was initiated to prepare the Knowledge Capture Document (KCD) for almost 50 applications. After that a pilot system called Benefit Payment Systems was developed to payments an aggregate customer owes.	
Role Description	
Primary responsibilities included from reviewing the business requirements, impact study, development, Project co-ordination and providing all levels of testing support.	

Phoenix project	***06/2007 – 06/2012***
Company Name	***Guardian Life Insurance Company of America***
Company Location	***New Yorkm NY and Chennai, India***
Role on Project	***Project Lead***
Software/Hardware Used	***Java EE, COBOL, JCL, CICS, Assembler, MQ Series, Java Script, ReXX, DB2, VSAM, DB2 Stored Procedure, IMS-DB, VANTAGE-ONE®, File-AID: Mvs, Abend-AID, Xpeditor, Changeman, Easytrieve Plus, Cognos, Crystal Reports***
Project Description	
Guardian is one of the largest mutual life insurance companies in America, with 150+ years of experience in providing diversified financial solutions, including life insurance, disability income insurance, retirement services, employee benefits, and investments. ***Major functions of Phoenix are New Plan registration and setup, inquiry, validation, member entry & coverage generation; captures plan information, administrating plan amendments, sets trigger processing for cross edit / coverage generation.***	
Role Description	
Primary responsibilities included from reviewing the business requirements, impact study, development, Project co-ordination and providing all levels of testing support.	

Service Express project	***10/2002 – 06/2007***
Company Name	***Verizon Data Services India Ltd***
Company Location	***Chennai, India***
Role on Project	***Senior Mainframe Developer***
Software/Hardware Used	***IBM Mainframe (IBM OS/390) using COBOL, JCL, VSAM, DB2, DB2 Stored Procedure, Omegamon, File-AID, Abend-AID, Xpeditor, Changeman***
Project Description	
Verizon Data Services, a subsidiary of Verizon Communications. It's a global company with more than 40 years' experience in managing information technology across a variety of platforms and within a range of industries. ***Service Express is a CRM application. It's the online portion of NBBE that is used by the customer facing forces of Verizon. Service Express is primarily used to provide ordering and customer care functionality for business & customer Accounts.***	
Role Description	
Preparing the General Design, Detailed Design, Interface Documents, Coding and Unit testing. Support regression testing. Validating the release.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Bharathiar University***		
City, State	***Coimbatore, Tamilnadu, India***		
Degree	***Bachelors of Engineering – Informational Technology.***	***Completion Date***	***04/2002***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***IBM Certified Application Developer – DB2V8.1 (10/2010)***
- ***PMI Certified Project Management Professional (PMP # 1505180) (05/2012)***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Web Based Systems and Mainframe Systems***
Hardware	***OS/390, Z/Os, Mainframe, Windows***
Software	***IBM Websphere MQ, IBM Websphere Application server, FileAid, Omegamon, NDM, LexisNexis bridger solution***
Tools	***Java EE, SQL, JSON, Spring Framework, XML, COBOL, JCL, CICS, Bugzilla, SVN, Perforce, SOAP UI, RAD, Eclipse IDE, RDz, Microsoft Office: Visio, Excel, Access, Project, Power Point, Word, OneNote, sharepoint***
Databases	***Oracle, DB2, VSAM***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State Of Nevada***
Contact Name	***Jerry Horine***
Phone Number	***(775) 684-0556***
Fax Number	***n/a***
Email Address	***jhorine@dwss.nv.gov***

Client Reference 2

Company Name	***State Of Nevada***
Contact Name	***Deidra Johnson***
Phone Number	***775-684-0573***
Fax Number	***n/a***
Email Address	***DXJOHNSON@dwss.nv.gov***

Client Reference 3

Company Name	***DXC Technologies (Formerly called Computer Sciences Corporation and Prior to that Covansys)***
Contact Name	***Soundir Sivaraman***
Phone Number	***(848)467-6360***
Fax Number	***n/a***
Email Address	***Soundirarajan_sivaraman@glic.com***

Amit Aphale

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Amit Aphale***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Manager***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***10***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Amit has over 12 years of experience in delivering modernized web based business applications using cutting edge web technologies. He has worked on assignments spanning across Public Sector, Consulting and Consumer Business.

He has more than ten years of experience working on public sector engagements in the Human and Health Services and Child Support domains. He has insightful knowledge and experience in project delivery throughout all the phases of SDLC including requirements, design, development, testing and application support. He has worked with multiple public sector clients including the States of Oregon, Nevada, Montana, Massachusetts and California to build enterprise applications.

Amit is currently working as the Application Development Manager on the Oregon Origin project, focusing on the customer and worker portals. He has worked with the State of Nevada client to build their Supported State-Based Marketplace (SSBM) application and the modernized AMPS and Eligibility Rule Engine applications.

He has great leadership skills with more than five years of experience in the role of a team lead; and over three years of experience as an Application Manager.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***06/2016 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, Oregon***
Role on Project	***Application Development Manager (Worker Portal, Customer Portal)***
Software/Hardware Used	***IBM WebSphere, IBM Tivoli Workload Scheduler, Java, Angular 4 and Bootstrap CSS, IBM Jazz Suite, Atlassian Jira, TOAD, Enterprise Content Manager, Open Text Extreme, Microsoft Project Plan***

Project Description

This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.

Role Description

As a development manager Amit has been responsible for the following on the project –

- ***He has led the design and development of responsive web design based customer portal application using Angular 4 and bootstrap technologies.***
- ***He has also led implementation of worker portal application for document management, customer service and enforcement modules.***
- ***He has led the application upgrade effort to upgrade the version of J2EE technologies including EJB, Hibernate, Struts, Spring, and Log4j inherited from California CA CSE.***
- ***He has led the Joint Application Design (JAD) and Joint Technical Design (JTD) sessions with client's business analysts and technical team for multiple change requests in Origin***

Nevada HCR-EE project	***03/2015 – 05/2016***
Company Name	***State of Nevada, Department of Welfare and Social Services***
Company Location	***Carson City, NV***
Role on Project	***Development Manager***
Software/Hardware Used	***WebSphere Application Server, WebSphere Business Process Manager Advanced, ILOG BRMS, Rational Application Developer, WebSphere Integration Developer, DB2***

Project Description

The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.

Role Description

As the Application Development Manager from offshore development center Amit has following responsibilities –

Nevada HCR-EE project	***03/2015 – 05/2016***

- ***Manage project deliverables for AMPS (Integrated Eligibility – IE Worker Portal) and Business Rules Engine from offshore.***
- ***Create estimation and build a development work plan for AMPS applications***
- ***Led the entire delivery of the application from design through production go-live.***
- ***Manage the design and development of the application components***
- ***Manage the System testing and provide support during the UAT phase***
- ***Lead architectural decisions for changes in the critical components and during redesigning.***
- ***Resolved the production go-live issues and stabilize the application immediately after go-live.***
- ***Estimate and manage the delivery of the change request after go-live of both the applications.***
- ***Mentoring and grooming the junior staff on domain knowledge, technology and professional attributes.***
- ***Manage process audits and recommend for process improvements.***

Nevada SSBM project	***06/2014 – 02/2015***
Company Name	***State of Nevada, Department of Welfare and Social Services***
Company Location	***Carson City, NV***
Role on Project	***Development Manager***
Software/Hardware Used	***WebSphere Application Server, Spring Batch, Rational Application Developer, DB2***

Project Description

For the Supported State-Based Marketplace (SSBM) project , the State needed a solution to process eligibility and enrollment for medical benefits applications referred from the federal hub and also send denied applications to the federal hub. The solution also provided the client's eligibility for non-ESI MEC. The client received approximately 62,000 referrals from SSBM and also referred approximate 155,000 applications to SSBM with the help of an integrated eligibility system that serves core public assistance programs including medical assistance, cash assistance, and food benefits.

Role Description

As the Application Development Manager from offshore development center Amit has following responsibilities –

- ***Manage project deliverables for SSBM – Integration batches and Access Nevada application from offshore.***
- ***Create estimation and build a development work plan for both the applications***
- ***Led the entire delivery of the application from design through production go-live.***
- ***Manage the design and development of the application components***
- ***Manage the System testing and provide support during the UAT phase***
- ***Lead architectural decisions for changes in the critical components and during redesigning.***
- ***Resolved the production go-live issues and stabilize the application immediately after go-live.***
- ***Estimate and manage the delivery of the change request after go-live of both the applications.***
- ***Mentoring and grooming the junior staff on domain knowledge, technology and professional attributes.***
- ***Manage process audits and recommend for process improvements.***

Massachusetts HIX project	***12/2012– 05/2014***
Company Name	***Commonwealth of Massachusetts, Executive Office of Human and Health services***
Company Location	***Quincy, MA***

Massachusetts HIX project	***12/2012– 05/2014***
Role on Project	***Development Lead***
Software/Hardware Used	***Weblogic 11g, Eclipse Juno, Web services, Experian's QAS Web Pro, Experian's Correct Address, Lexis Nexis, Spring batch, Oracle Policy Automation, EMC xPressions 4.2, Spring JDBC, Jasper reports.***
Project Description	
Commonwealth of Massachusetts is responsible for ensuring that a MA HIX/IES Exchange is operational by January 2014 and provides reusable components and artifacts to assist other states in meeting their goals to operate an Exchange. Deloitte worked with EOHHS, State of Massachusetts to implement HIX Information Technology components and consolidate the multiple eligibility systems in Massachusetts, leveraging where feasible existing components that are consumer-focused, cost-effective, reusable, and sustainable and that can be leveraged/reused by New England and other states to operate the MA HIX/IES System.	
Role Description	
As a development lead Amit was responsible for • ***Identify scope of work, create estimation and build a development work plan for different modules - Address Validation, Batch Jobs, Notices - Correspondence.*** • ***Design and Development and of the components*** • ***Support SIT and UAT phases*** • ***Ensures that all the technical processes are thoroughly documented for future references and as guidelines for standard development on the project*** • ***Manage risks/issues on the project.*** • ***Mentoring and grooming the junior staff on technology and professional attributes***	

Montana CHIMES EA project	***11/2011 – 11/2012***
Company Name	***State of Montana, Department of Public Health and Human Services***
Company Location	***Helena, MT***
Role on Project	***Development Lead***
Software/Hardware Used	***WebSphere 7.0 application server, Oracle 11g database, IBM ILOG JRules, MyEclipe Blue IDE (9.0 M2), EJB 2.0, Web Services, Mule ESB***
Project Description	
The State of Montana, Department of Public Health and Human Services (DPHHS) administers 150 major assistance programs and consists of 3 agencies, 11 divisions, and approximately 3,100 employees. Deloitte developed and implemented the Combined Health Information and Montana Eligibility System Enterprise Architecture (CHIMES EA) system that allowed them to enter all information in one place to determine SNAP, TANF, Medicaid, and Emergency Assistance benefits. It further allows users to coordinate services, workflow processes, and provide integrated case management. As part of meeting the ACA requirements Deloitte implemented a new self-service portal and data mart. Deloitte also enhanced the system as State policies and business processes changed.	
Role Description	
As a lead for Medicaid Integration track Amit had following responsibilities - • ***Designing the system architecture for successful integration between the SNAP, TANF and Medicaid programs.*** • ***Planning, managing, prioritizing and leading the development effort for the integration module*** • ***He is responsible for ensuring the development and deployment of CHIMES EA and Medicaid application and ensuring they are successfully integrated*** • ***Responsible for timely delivery of the application to the client. This includes but not limited to providing business understanding to the team, resolving technical as well as functional doubts as well as coding/unit testing some of the modules within the application***	

Montana CHIMES EA project	***11/2011 – 11/2012***

- ***He consistently analyzes the code that is delivered and provides inputs to achieve maximum amount of code quality***
- ***Ensures that all the technical processes are thoroughly documented for future references and as guidelines for standard development on the project***
- ***To ensure successful delivery during the System Integration, User Acceptance and Pilot phases***

California Court Case Management System V4	***04/2010 – 10/2011***
Company Name	***Administrative Office of the Courts(AOC) , State of California***
Company Location	***Santa Ana, CA***
Role on Project	***Development Lead***
Software/Hardware Used	***Java, JSP, Struts framework, EJB 2.0, Weblogic Server 10.3, Oracle 11g, JPA, SAP-BOXI report APIs for reports generation, Adobe Live Cycle APIs for forms generation***
Project Description	
The AOC Courts Case Management System V4 (CCMS-V4) Case Management project was a statewide case worker portal to allow the County court case workers, judges, state attorneys to manage their court business the courthouse or court facilities and also interface with other state agencies to exchange information via electronic data exchanges. The system was one of the largest consolidated enterprise Court Case Management system build to manage over 9 million cases filed each year in the State of California.	
Role Description	

As the Development Lead Amit has following responsibilities –

- ***Works at the development location in Santa Ana, California with the clients in understanding business requirements***
- ***Leading a team of 8 senior JAVA/J2EE developers to develop the functionality based on the design documents and reviewing their deliverables***
- ***Involved in coding and unit testing six functional areas in the applications.***
- ***Providing quick defect turnaround time during the production support phase.***
- ***Making timely escalations (development/resource issues/schedule) and pro-actively got the issues resolved.***
- ***Planning, managing, prioritizing and leading the defect resolution process for over 1500 defects/change requests.***
- ***Assisted several teams, including Stress Testing, Automation and Data Migration with functional and technical issues.***
- ***Responsible for delivering over 70 performance improvement issues in my functional area of the application***

Massachusetts Virtual Gateway EIM-ESM	***01/2008 – 03/2010***
Company Name	***State of Massachusetts, Executive Office of Health and Human Services (EOHHS)***
Company Location	***Boston, MA***
Role on Project	***Development Team Member***
Software/Hardware Used	***Java, JSP, Maverick framework, EJB 2.0, XML, Weblogic Server 9.0, Oracle 9i/10g, MQ series, Hibernate***
Project Description	

Massachusetts Virtual Gateway EIM-ESM	***01/2008 – 03/2010***
COMMON WEALTH OF MASSACHUSETTS provides health services for the state of Massachusetts (www.mass.gov). Enterprise Invoice Management and Enterprise Service Management is the project for Executive Office of Health and Human Services. This project deals with the billing systems of the EOHHS. It covers modules like contracts, billing, organization management, billing (Invoice, claims, SDR, etc), administration, etc.	
Role Description	
As the Development team member from offshore development center Amit has following responsibilities • ***Requirement Gathering: interacting with onsite team and clients for requirement elicitation.*** • ***Preparing Functional and Technical documentation*** • ***Fixing software and database script defects effectively*** • ***Assisting leads in activities like Planning, Monitoring, Defects tracking, Release activities, etc.*** • ***Involved in development, unit testing, performance testing and code review activities using JAVA/J2EE and Oracle*** • ***Do impact analysis for all issues, changes to requirements and design*** • ***Responsible for Defect Management throughout the Software Testing Life Cycle*** • ***Involved in build and environment management activities*** • ***Configuration Manager for the offshore team***	

Document Production Repository	***05/2006 – 09/2007***
Company Name	***McKinsey Consulting Co***
Company Location	***Mumbai, India***
Role on Project	***Development Team Member***
Software/Hardware Used	***EMC Documentum5.3,Webtop,DA,Peregrine Service Center, Web Development Kit, Documentum Foundation Classes***
Project Description	
DPR is a Content Management system for the client. This system is used for document production to create, edit, update, delete, and share documents for engagements. A strict security framework will control the access to engagements.	
Role Description	
As the Development Team Member from offshore development center Amit has following responsibilities • ***Interact on regular basis with the client to understand their issues with the tool*** • ***Analyze the issues and suggest resolution*** • ***Resolve the issues*** • ***Customize the web based application as per client's request*** • ***Grant roles/access to the clients to the application***	

Chen & Co – The Saver Program	***01/2005 – 04/2006***
Company Name	***Chen & Co.***
Company Location	***Mumbai, India***
Role on Project	***Development Team Member***
Software/Hardware Used	***JAVA1.4/J2EE Struts1.2,JBOSS4.0,CeWolf,Eclipse3.0***
Project Description	
The Saver Program is a value added advertising Program designed to help businesses increase their store traffic while simultaneously gaining a greater knowledge of their consumers. It would provide a platform for relaying promotions from businesses to consumers and provide feedback and research	

Chen & Co – The Saver Program	*01/2005 – 04/2006*

about product viability to the business. Management of consumer relationships would focus on details of each individual consumer rather than statistical averages for region-wise groups of consumers. Businesses were made to adapt and post unique and different local advertisements through general promotions and target this base of consumers through the consumer's individualized account web page.

Role Description

As the Development Team Member from offshore development center Amit has following responsibilities

- ***Develop the Low level and High level design documentation***
- ***Development of component***
- ***Unit/Integration testing of the components***
- ***Writing Unit test cases for the components***
- ***Writing the User Manuel of the components***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***P.E.S. College of Engineering, University Of Marathwada,***		
City, State	***Aurangabad, Maharashtra, India***		
Degree	***Bachelor of Computer Science and Engineering***	***Completion Date***	***07/2004***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Java8.0/J2EE, JSP, Servlets, EJB 3.0, JDBC2.0, Springs framework, Struts framework, Hibernate (ORM), Angular 4.0, Bootstrap, JPA, Spring Batch, Spring JDBC, Maverick framework, Jasper Reports, IBM BPM 8.0***
Hardware	***IBM Compatible PCs***
Software	***Toad, Documentum, J2EE Tools, Oracle Grid Control, SQL Impact, SQL Developer,***
Tools	***Microsoft Project, Visio, Test Tracker System, MS Word, MS Excel, Concurrent Version System, Visual Source Safe, Microsoft Visio, IBM JAZZ***
Databases	***Oracle 9i and 11g, SQL Server, DB2,, Microsoft Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Oregon***
Contact Name	***Gene D. Gustin, Business & Functional Design Manager, Division of Child Support, Oregon Department of Justice***
Phone Number	***(971) 915-5122, (541) 580-1508***
Fax Number	***n/a***
Email Address	***Gene.Gustin@doj.state.or.us***

Client Reference 2

Company Name	***State of Oregon***
Contact Name	***James Wollenweber, Technology Manager, Division of Child Support, Oregon Department of Justice***
Phone Number	***(971) 915-5114***
Fax Number	***n/a***
Email Address	***James.Wollenweber@doj.state.or.us***

Client Reference 3

Company Name	***State of Oregon***
Contact Name	***Amy Desmond, Test Lead, Division of Child Support, Oregon Department of Justice***
Phone Number	***(971) 915-5267***
Fax Number	***n/a***
Email Address	***James.Wollenweber@doj.state.or.us***

Selvam Asaithambi

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Arivuselvam (Selvam) Asaithambi***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Project Delivery Manager***	
# of Years in Classification:	***1***	**# of Years with Firm:**	***6***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Selvam has 15 years of software development experience in analysis, design, development, support and unit testing of application software in web based environments and client / server architectures using Java & J2EE technologies like Spring, Hibernate, Servlets, JSP, JDBC, XML, XSL, AJAX and WebServices. He also has experience in business process modeling using IBM Integration Designers and in creating business monitor models in business space using IBM WebSphere Integration Developer. He brings seven years of working experience in a SOA environment for NOMADS. Selvam has extensive experience working in the HHS environment in Nevada, helping to implement components of TANF, SNAP, and Medicaid.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Wyoming WES project	***06/2017 – Present***
Company Name	***State of Wyoming, Wyoming Department of Health (WDH)***
Company Location	***Cheyenne, WY***
Role on Project	***Technical Manager (Batch Processes, Reports, Automation)***
Software/Hardware Used	***Java EE, Struts, Hibernate, JBoss Application Server, Oracle, Oracle Enterprise Manager, Oracle Audit Vault, Mule ESB, JBoss BPM, Linux, HP Extreme, Pentaho, Websphere Application Server, Websphere Operational Design Management (WODM), Control - M***
Project Description	
Wyoming Eligibility System (WES) is a web-based Integrated Eligibility solution which administers benefits for the Medicaid, and HMK (CHIP) programs in Wyoming. During DDI, Deloitte successfully transitioned operations and maintenance of WES Medicaid/HMK from Northrop Grumman. Deloitte is responsible for Operations and Maintenance (O&M) services for the Wyoming Eligibility System (WES), resolving defect transitioned from incumbent vendor, Implement outstanding functionality required to meet base business and system requirements, Reduced reliance on monthly batch processes for continued issuance of coverage, improve performance, simplify reporting, and support scalability for additional programs integrated with Medicaid and CHIP in the WES.	
Role Description	
Responsible for managing the Batches on a daily basis to ensure uninterrupted service of the WES applications (Worker Portal and Client Web Portal) Processes. Responsible for creating adhoc and recurring reports necessary for management of the work load as well as inter departmental and Federal reports. Responsible for managing the Technical support team that aids the Helpdesk to resolve the tickets created by the case workers. Responsible for the Automation of recurring tasks like recurring reports to the client, system health check reports for the technical team and recurring data fixes in the database to avoid data corruption.	

Nevada SNAP TANF Expansion project	***03/2015 – 06/2017***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Lead (AMPS Integration, Access Nevada)***
Software/Hardware Used	***Java EE, Spring Framework, FileNet, DB2, IBM Websphere Application server, IBM Websphere Process Server, IBM Websphere MQ , Maven, Jenkins, Sonar, Apache Velocity, XML, JSON, SOAP UI, Bugzilla, Perforce, SVN, Eclipse, JQuery, Java Script.***
Project Description	
The State contracted with Deloitte to design, develop, and implement SNAP/TANF business rules and modernize the caseworker portal. The SNAP/TANF rules leveraged the integration of the ILOG based rules engine with NOMADS. The project scope also included removal of HATS macros, conversion of the Struts-based user interface to Spring MVC framework, and integration with existing NOMADS modules for prior-medical, recertification, alerts and triggers (OASIS and MMIS), and NCP referrals.	
Role Description	
As Technical Lead, Selvam's responsibilities included: Designed and developed the integration of Access Nevada (Client Web Portal) with AMPS (Worker Portal) using spring and the new persistence framework.	

Nevada SNAP TANF Expansion project	***03/2015 – 06/2017***
Also responsible for creating customized tools for measuring and monitoring code quality and code coverage using SONAR.	

Nevada HCR-EE project	***12/2012 – 03/2015***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Lead (Release Management, AMPS Integration, Access Nevada)***
Software/Hardware Used	***Java EE, Hibernate, FileNet, DB2, BPEL, IBM SOA Suite, IBM Websphere Business Monitor, IBM Websphere Process Server, IBM Websphere Service Registry and Repository, IBM Websphere MQ, ANT, Jenkins, XML, XSLT, SOAP UI, Bugzilla, Perforce, SVN, Eclipse, RAD, JQuery, Java Script, HATS.***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
As Technical Lead, Selvam's responsibilities included: Responsible for the integration of the State Based Exchange with AMPS (Worker Portal), so that applications created in the State Based Exchange are seamlessly transferred to the worker portal. Designed and developed the BPEL processes necessary for the collecting and transforming data needed by the eligibility rules. Also responsible for managing the releases and configurations by working with the client operations team.	

Nevada AMPS project	***05/2010 – 07/2012***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***SOA Consultant***
Software/Hardware Used	***Java EE, Hibernate, FileNet, DB2, BPEL, IBM SOA Suite, IBM Websphere MQ, IBM Websphere Process Server, IBM Websphere Service Registry and Repository, IBM Websphere Business Monitor, ANT, XML, XSLT, SOAP UI, Bugzilla, Perforce, Eclipse, RAD, JQuery, Java Script, HATS.***
Project Description	
Deloitte assisted the State in designing, developing, and implementing the Application Modernization and Productivity Services (AMPs) project. The scope of work included: implementing a web portal to present the caseworker with a single consolidated access to multiple systems; implementing a workflow to establish a predefined sequence of operations for imaged documents and data; implementing a document imaging system (DIS) to reduce physical storage space for paper documentation; and integrating the portal with ACCESS Nevada, NOMADS, DIS, and PRISM.	
Role Description	
As SOA Consultant, Selvam's responsibilities included: Designed and developed BPEL Processes and the transformation framework to choreograph an end to end process flow to save and synchronize data in NOMADS (Legacy System), AMPS (Worker Portal) and Access Nevada (Client Web Portal).	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Madurai Kamaraj University***		
City, State	***Madurai, Tamilnadu, India***		
Degree	***Bachelors of Computer Science and Engineering***	***Completion Date***	***07/2001***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***ITIL Foundation Certificate in IT Service Management, Date Completed: 08/25/2016***
- ***Java SE 8 Programmer, Date Completed: 04/07/2016***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***IBM SOA Suite, IBM Websphere MQ, IBM Websphere Process Server, IBM Websphere Service Registry and Repository, IBM Websphere Business Monitor, IBM Websphere Application server, JBoss Application Server, FileNet, UML***
Hardware	***Windows, Linux***
Software	***BPEL, Java EE, SQL, Java Script, JQuery, JSON, Spring Framework, Apache Velocity Framework, Hibernate, XML, XSLT***
Tools	***Microsoft Office Suite, Bugzilla, SVN, Perforce, SOAP UI, RAD. Eclipse IDE, HATS, ANT, Jenkins, Maven, Sonar***
Databases	***Oracle, DB2***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Laura Smith, Social Services Program Specialist***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0712***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 2

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Bruce Ferneyhough, Application Development Chief***
Phone Number	***(775) 684-0517***
Fax Number	***n/a***
Email Address	***bferneyhough@dwss.nv.gov***

Client Reference 3

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***David Texeira, Chief of Application Development***
Phone Number	***(775) 684-0540***
Fax Number	***n/a***
Email Address	***texeira@dwss.nv.gov***

Dildar Marhas

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Dildar Marhas***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Technical Architect***	
# of Years in Classification:	***10***	**# of Years with Firm:**	***7***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Dildar has over 23 years delivery experience in systems engineering, application development and complex systems integration utilizing state of art technologies in Retail, Manufacturing, Government, and Insurance industries. This includes eight years in Public Sector-State Government with a focus on Integrated Eligibility, Case Management and Legacy Modernization.

As the project manager and technical architect on multiple engagements, Dildar focuses on managing, designing and implementing scalable architectures while advising clients on technical standards and best practices. Dildar has successfully managed large technical teams throughout all phases of the software development lifecycle including requirements gathering, analysis, design, implementation, and project management

Specifically, he has worked alongside the State of Nevada, DWSS for six years which provides him great insight into the technical and operating environment for the NCSEAS project. He understands the DWSS environment and technical infrastructure.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Nevada HCR-EE project	***07/2012 – Present***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Manager/Project Manager***
Software/Hardware Used	***IBM WebSphere Portal Server 6.1.5, IBM WebSphere Rational Application Developer 7.5, Rational Business Developer v8.0, WODM Rule Designer v8.0, IBM Integration Developer v8.0 on Windows, WebSphere Application Server (WAS) v7.0 on AIX v6.1, IBM Rational Host Access Transformation Services v7.5.1, Jenkins Continuous Integration Server v1.466, IBM WebSphere MQ v7.5, Perforce. Mainframe Hardware: IBM System Z9. Mainframe Software: Z/OS Version 1.10. IDE: IBM Integration Designer v8.0.1, ODM Rule Designer v8.0.1, Rational Business Developer 7.5.4.***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
Dildar started out as Technical Manager and was given Project Manager responsibilities. Dildar led the project team to a timely and successful implementation of the overall solution. His role includes the following: • ***Establish overall solution architecture.*** • ***Lead and manage a multidisciplinary team.*** • ***Maintain architectural integrity across various sub-systems*** • ***Facilitate resource planning and allocation of staff throughout the software development lifecycle.*** • ***Manage and track progress throughout all phases of the project, including requirements, design, development, testing, and implementation.*** • ***Plan and participate in Steering Team meetings*** • ***Align requirements/design/implementation with project goals, objectives and scope.***	

Wyoming WES project	***6/2016– 09/2016***
Company Name	***State of Wyoming, Wyoming Department of Health (WDH)***
Company Location	***Cheyenne, WY 82002***
Role on Project	***Transition Manager***
Software/Hardware Used	***JBOSS, WebSphere Application Server, ILOG BRMS, Oracle, HP Exstream, RedHat, Mule ESB, jBPMN.***
Project Description	
Wyoming Eligibility System (WES) is a web-based Integrated Eligibility solution which administers benefits for the Medicaid, and HMK (CHIP) programs in Wyoming. During DDI, Deloitte successfully transitioned operations and maintenance of WES Medicaid/HMK from Northrop Grumman. Deloitte is responsible for Operations and Maintenance (O&M) services for the Wyoming Eligibility System (WES),	

Wyoming WES project	***6/2016– 09/2016***
resolving defect transitioned from incumbent vendor, Implement outstanding functionality required to meet base business and system requirements, Reduced reliance on monthly batch processes for continued issuance of coverage, improve performance, simplify reporting, and support scalability for additional programs integrated with Medicaid and CHIP in the WES.	
Role Description	
Dildar was the Transition Manager on WES M&O Project. He led the project team to a timely and successful transition of the overall solution from the incumbent vendor (Northrop Grumman) to Deloitte. His role included the following: • ***Develop, execute and manage a detailed transition plan.*** • ***Work with the Incumbent Contractor and lead the project team to successfully test and transition the technical environments and code, as well as documentation for ongoing management.*** • ***Manage functional and technical risks during transition.***	

Access Nevada Enhancement project	***05/2011 – 11/2011***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Manager***
Software/Hardware Used	***zOS, AIX, CICS, DB2, MQ, WebSphere Application Server, WebSphere Portal Server, WebSphere Process Server, Business Process Manager, Business Rule Management System, FileNet, Thunderhead, Rational Application Developer, IBM Integration Developer***
Project Description	
For the Access Nevada Enhancement project, Deloitte assisted the State in designing, developing, and implementing enhancements to the Access Nevada and AMPs applications. The scope of work included: modifying Access Nevada to display information in Spanish by changing field labels and variables on 45 java web pages; modifying Access Nevada to provide two ADA-compliant access features for handicapped individuals to the electronic application (i.e., mandatory field highlighting and color contrast on fields); modifying Access Nevada to enhance self-service, including some security login modifications (i.e., modifying application security to reinstate application access for expired user logins and enhanced online query by the client of their application benefit status based on the data fields available in the VRU extract); attaching collateral documentation electronically, which provided the ability for clients to attach supporting scanned documents to their Access NV electronic application; and converting dependent care expense (DCEX) and support deemed expense (SUDE) HATS macros to Java web services.	
Role Description	
As the Technical Manager, Dildar' s responsibilities were to: • ***Establish a solution architecture for "Check my Benefits" including security and benefits data-access, Spanish version of the application and ADA compliance and file-upload functionality.*** • ***Establish the upgrade path for the WebSphere Application Server platform to version 7.0.*** • ***Maintain architectural integrity across AMPS and Access NV initiatives.*** • ***Align requirements/design/implementation with project goals, objectives and scope.***	

Nevada AMPS project	***01/2010 – 11/2011***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Manager***
Software/Hardware Used	***Windows, Java/JEE, SQL, Hibernate, Struts, jQuery, JSR 286, XML, WebSphere Portal Server, WebSphere Process Server, WebSphere Service Registry and Repository, FileNet, HATS, Rational Application Developer, WebSphere Integration Developer, DB2***

Project Description

Deloitte assisted the State in designing, developing, and implementing the Application Modernization and Productivity Services (AMPs) project. The scope of work included: implementing a web portal to present the caseworker with a single consolidated access to multiple systems; implementing a workflow to establish a predefined sequence of operations for imaged documents and data; implementing a document imaging system (DIS) to reduce physical storage space for paper documentation; and integrating the portal with ACCESS Nevada, NOMADS, DIS, and PRISM.

Role Description

As the Technical Manager, Dildar' s responsibilities were to:

- ***Lead and manage geographically distributed team by aligning development tasks with project priorities and working closely with functional team and client managers in a fast-paced environment.***
- ***Support technical operations such as build and release management by advising and guiding client IT operations team.***
- ***Conduct technical meetings with client managers and development staff covering topics such as system integration, application development, technical issue resolution and training/knowledge transfer.***
- ***Coordinate and support load-testing of AMPS solution by providing guidance and technical advice***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Indian Institute of Technology***		
City, State	***Powaii, India***		
Degree	***Master of Technology(EE)***	***Completion Date***	***02/1987***

Institution Name	***Maulana Azad National Institute of Technology***		
City, State	***Bhopal, India***		
Degree	***Bachelor of Engineering, EE***	***Completion Date***	***06/1984***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 07/2014***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

Environments	***zOS, AIX, Windows, Xenix, Linux, OS/2, DOS***
Hardware	***IBM zSeries, pSeries, xSeries, Sun Solaris, Windows Server, IBM PC compatibles***
Software	***MQSeries, WebSphere Application Server, WBIMB, CICS Transaction Gateway, Web Services Gateway, WBIA, WBI, ODM, WebLogic, JBOSS. WebSphere ESB, MuleESB, WebSphere Process Server, IBM BPM, Tomcat***
Tools	***RSA, RAD, WSAD, WID,IID, Visual Age for Java, Message Broker Toolkit, Eclipse, Portal Toolkit, Junit, CVS, CruiseControl, Jenkins, SVN, Rational Clear case, JMeter, Rational Rose, Enterprise Architect, Struts, Tiles, Spring Framework, Hibernate, Nutch, Lucene, Axis, Synapse, Eclipse Plug-ins, Jelly, Bio-Perl, GMOD, .Net, Angular 2***
Databases	***DB2, Oracle, Sybase, MySQL, Postgres, SQL Server***

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State Of Nevada (DWSS)***
Contact Name	***David Texeira, DWSS ITM III***
Phone Number	***(775) 684-0540***
Fax Number	***(775) 684-0656***
Email Address	***texeira@dwss.nv.gov***

Client Reference 2

Company Name	***State Of Nevada (DWSS)***
Contact Name	***Laura Smith, Test Manager***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0656***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 3

Company Name	***State Of Nevada (DWSS)***
Contact Name	***Jerry Horine, Database Administrator***
Phone Number	***(775) 684-0556***
Fax Number	***(775) 684-0656***
Email Address	***jhorine@dwss.nv.gov***

Jennifer Hdairis

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jennifer Hdairis***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***4***	**# of Years with Firm:**	***4***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE

Information should include a brief summary of the proposed individual's professional experience.

Jennifer has ten years of experience in the IT industry, in software development and leading small developer teams. She is currently working as a Senior Developer and Team Leader for the Nevada Health Care Reform Eligibility Engine project. While she was on the NOMADS project, she assisted with the eligibility rules engine, updated the existing systems to include eligibility rules changes, and insured the synchronization of information between the multiple systems, and databases using IBM process server, Websphere portal, web services, HATS services, and MQ server. She is an experienced Java/J2EE developer, with a strong background in WebSphere Portal and Application servers, portlet development particularly with Struts and JSF frameworks, web services and IBM Web Content Management. In addition to being a Certified Java Developer and Web Component Developer, she is also PMP certified and holds several IBM certifications.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Nevada HCR-EE project	***11/2013 – Present***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Senior Developer and Team Leader***
Software/Hardware Used	***IBM WebSphere Portal 6.5. Integration: IBM BPM 8.5.5.7, IBM MQ v7.5. Database: IBM DB2 v10.0. Business Rules: ODM Rules Execution Server v8.5.5.7, ODM Decision Center v8.5.5.7. Scheduling: Windows Scheduler. Reporting: Crystal Reports. Correspondence: Thunderhead v6.0.1. Queue: Websphere MQ. IDE: IBM Integration Designer v8.5, ODM Rule Designer v8.5, Eclipse Luna. Mainframe Hardware: IBM System Z9, Mainframe. Software: Z/OS Version 1.10, CICS Transaction Server Version 4.1***

Project Description

The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.

Role Description

As Senior Developer and Team Leader, Jennifer has the following responsibilities:

- ***Provide production support for HCR-EE post go live.***
- ***Support for SSBM Integration to complete Send & Receive Account Transfer Process and update the PDF in AMPS Inbox for further case processing manually in AMPS and NOMADS.***
- ***Support with implementation of SSBM Integration changes to existing DWSS systems by pre-populating Application Modernization and Productivity Services (AMPS) screens with the data received from the SSBM as a part of Account Transfer process. In addition, Release-2 will also accommodate the changes needed in existing HCR-EE system for decommissioning of the Business Operations Solution (BOS) integration points with HCR-EE system.***
- ***Support the conversion of SNAP TANF Rules in the Rules engine***
- ***Designed, developed and implemented ThunderHead forms for redetermination/recertification***

Nevada HCR-EE project	***10/2012 – 10/2013***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***1470 E. College Parkway, Carson City, NV***
Role on Project	***Senior Developer***
Software/Hardware Used	***IBM WebSphere Portal Server 6.1.5, IBM WebSphere Rational Application Developer 7.5, Rational Business Developer v8.0, WODM Rule Designer v8.0, IBM Integration Developer v8.0 on Windows, WebSphere Application Server (WAS) v7.0 on AIX v6.1, IBM Rational Host Access Transformation Services v7.5.1, Jenkins Continuous Integration Server v1.466, IBM WebSphere MQ v7.5, Perforce. Mainframe Hardware: IBM System Z9. Mainframe Software: Z/OS Version 1.10., IDE: IBM Integration Designer v8.0.1, ODM Rule Designer v8.0.1, Rational Business Developer 7.5.4***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
As Senior Developer, Jennifer enabled the eligibility rules engine, updating the existing systems to include eligibility rules changes, and insuring the synchronization of information between the multiple systems, and databases using IBM process server, Websphere portal, web services, HATS services and MQ server.	

eGovernment Portal Website and Services project	***01/2012 – 10/2012***
Company Name	***Ministry of Information and Communications Technology, Jordan***
Company Location	***Bayader Wadi Al Seer, Jordan***
Role on Project	***Technical Design and Implementation Lead***
Software/Hardware Used	***WebSphere Portal 7.0, WebSphere Portal 6.0, DB2 9, AIX***
Project Description	
The eGovernment project, developed and launch new eGovernment portal, electronic forms, and integrated with SMS gateway for portal user subscribed notifications. It also migrated existing applications and content from IBM Websphere Portal 6.0 platform to IBM WebSphere Portal 7.0 Platform.	
Role Description	
As Technical Design and Implementation Lead, Jennifer was responsible for designing technical solutions, preparing design documents, information architecture and work breakdown, guided developers and prepared status reports.	

Online Parking Permits and Fines Payment Systems Maintenance and Enhancement project	***01/2010 – 12/2011***
Company Name	***Roads and Transport Authority***
Company Location	***Dubai, United Arab Emirates***
Role on Project	***Senior Developer and Team Leader***

Online Parking Permits and Fines Payment Systems Maintenance and Enhancement project	***01/2010 – 12/2011***
Software/Hardware Used	***Web Application Server 6.1, Oracle 9i, Struts 2.0, Rational Application Developer, SVN***
Project Description	
The existing systems needed to be updated to reflect new functionalities introduced into the three systems in addition to the production support of the three government systems.	
Role Description	
As Senior Developer and Team Leader, Jennifer was responsible for implementing changes to the web applications and their back-end databases.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Jordan***		
City, State	***Amman, Jordan***		
Degree	***Bachelors of Science in Computer Science***	***Completion Date***	***07/2004***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 04/2011***
- ***ITIL v3, Date Completed: 05/2015***
- ***Scrum Master certification December 2016***
- ***Oracle Certified Professional, Java Web Component Developer, EE 5, Date Completed: 10/2010***
- ***Sun Certified Java Programmer 5, Date Completed: 10/2009***
- ***IBM Certified Solution Developer – IBM WebSphere Portal V6.0, Date Completed: 11/2008***
- ***IBM Certified Application Developer – IBM Workplace Web Content Management 6, Date Completed: 11/2008***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***IBM WebSphere Portal Server 6.x, 7.x, IBM WebSphere Application Server 6.x, 7.x, 8.x, Domino Server***
Hardware	***Windows 2000, XP, Vista, Windows 10***
Software	***Portlet and Web Content Management for WebSphere Portal Server, BIRT, Google Analytics, Google Maps API, Lotus Notes, ClearCase, ClearQuest, Java, J2EE, EJB, JSF 1.2, JSF 2.0, JSR 186, JSR 286, Struts 2, MVC, JDBC, Webservices , Apache Commons, Log4j, Ajax, Dojo, JQuery, HTML, CSS, JavaScript, XML, RSS, Perforce, SVN, FileNet and Thunderhead***
Tools	***Microsoft Project, Microsoft Office, Visio, Bugzilla***
Databases	***Oracle, DB2, MySQL, Domino. Microsoft Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Nevada Division of Welfare and Supportive Services***
Contact Name	***David M. Texeira, DWSS IT Manager***
Phone Number	***(775) 684-0540***
Fax Number	***(775) 684-0656***
Email Address	***texeira@dwss.nv.gov***

Client Reference 2

Company Name	***Nevada Division of Welfare and Supportive***
Contact Name	***Laura Smith, Test Manager***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0656***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 3

Company Name	***Specialized Technical Serveries LLC e Services***
Contact Name	***Yahya Mufti, Software Architect***
Phone Number	***+966 56 6042440***
Fax Number	***n/a***
Email Address	***yahya.mufti@sts.com.jo***

Santh Narayanan

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Santhakumaran (Santh) Narayanan***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***20***	**# of Years with Firm:**	***4 months***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Santh is a Senior Software Engineer with more than 18 years of software development experience dedicated to development of SOA application, web based applications, distributed n-tier applications, web to host integration and OLAP and Data Warehousing. He has performed multiple roles throughout his career, including Project Lead, Team Lead, and Lead Architect. He works in Nevada on the HCR-EE project, where he designed and developed AMPS and PRISM. He also has implemented Agile Scrum Methodology to improve communication between engineering, product management and the client.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Nevada HCR-EE project	***04/2017 - 07/2017***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Team Lead***
Software/Hardware Used	***Eclipse, IBM DB2 database, SVN Perforce, Websphere application server, MQ Server, J2EE, Spring, Webservice, IBM Mainframe OS390, Thunderhead and BPM-BRE***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
As a team lead, Santh have been involved in the following: ***1. Design/development of AMPS and PRISM*** ***2. Unit, Integration and performance testing.*** ***3. Implementation and Production support***	

Modernization of GCB's Open VMS Alpha System	***04/2014 – 04/2017***
Company Name	***Ciber Inc.***
Company Location	***Greenwood Village, Colorado***
Role on Project	***Sr. Application Developer/Architect***
Software/Hardware Used	***MS Windows 2012 Server on Intel platform, IIS 8.5, .Net Framework 4.0 , ASP.Net MVC 5.0, Razor, JavaScript, JQuery, Microsoft Windows 7, Visual Studio 2013, C#, SQL Server 2012, SQL, T-SQL, Team Foundation Server, Twitter Bootstrap, RESTful.***
Project Description	
Nevada Gaming Control Board (GCB) is responsible for regulating gaming throughout the state, along with the Nevada Gaming Commission. The Commission is responsible for administering regulations, granting licenses and ruling on disciplinary matters brought before it by the GCB. The Gaming Control Board is broken down into six agencies – Administration, Audit, Enforcement, Investigation, Tax and License and Technology. In an effort to modernize its mission-critical HP Open VMS Alpha Systems, the State of Nevada Gaming Control Board selected Ciber's Application Development and Management practice to migrate existing data and application into a new, Ciber-designed custom solution.	
Role Description	
As a team member, Santh was responsible for laying the architecture and develop critical pieces of the application.	

IGT Server Based Gaming (sbX Products)	***11/2005 – 03/2014***
Company Name	***International Game Technology***
Company Location	***Reno, NV***
Role on Project	***Staff Engineer / Architect***
Software/Hardware Used	***MS Windows 2008 R2 Server on Intel platform, VMware, .Net Framework 4.0, WCF, WF, WPF, WCF guidance package, Tailored MSF Agile, Microsoft Windows XP professional, Visual Studio 2010, C#, SQL Server 2008 R2, SQL, T-SQL, Enterprise Architect.***
Project Description	
IGT, Network Application Systems division (NAS) is responsible for building the next generation system called server based (sbX) to monitor, manage and maintain casino floors with a whole myriad of gaming systems that may include slot machines, table systems, bonusing and tournaments.	
Role Description	
As a team member, Santh was responsible for laying the architecture, develop critical pieces of the application and also lead an offshore development team.	

Worker Performance System for NV DWSS	***05/2003 – 11/2005***
Company Name	***Covansys Inc.***
Company Location	***Farmington Hills, MI***
Role on Project	***Manager***
Software/Hardware Used	***J2EE, JDBC, Java, Servlets, JSP, IBM RAD, WebSphere application server, VSS, Web MVC, CSS, HTML, DHTML, JavaScript , UML, DB2 UDB, Windows XP***
Project Description	
WPS is a web-based system developed for the Supervisors and Managers of DWSS to be able to evaluate the performance of caseworkers on a monthly basis. The main objective of the system is to analyze data, make timely initial/ongoing eligibility decision and take action in accordance with current policy/procedures for all programs administered by DWSS.	
Role Description	
As a Manager, Santh was involved in Architecting, Designing, and Development of the system and worked with the team to achieve the following activities: • ***Conducted design reviews and technical reviews with other project stakeholders and created functional requirement document.*** • ***Designed, developed, created DB scripts and deployed database in testing regions.*** • ***Worked on full cycle of software development from analysis through design, development, testing and integration phases.*** • ***Responsible for integrating application with client's security portal application.*** • ***Created various reports for executive staff.***	

Nevada NOMADS project	***10/1999 – 04/2003***
Company Name	***Covansys Inc.***
Company Location	***Farmington Hills, MI***
Role on Project	***Team Lead***
Software/Hardware Used	***IBM compatible PC, Windows NT, IBM Mainframe OS390, IBM DB2 database, COBOL, CSP, CICS, TSO/ISPF, Rexx, JCL, QMF, SPUFI, VSAM, FILE-AID***

Project Description

Nevada Operations of Multi Automated Data Systems is a fully integrated IV-A (Food Stamps, TANF and Medicaid Eligibility) and CSE (Child Support Enforcement) System. Child Support Enforcement System is a Mainframe based application for managing, monitoring and distribution of monies to family under child support. The system has extensive interfaces to other systems like DMV, Employment Services, etc., to aid in tracking of delinquent parents. The system was divided mainly into 5 sub processes namely Case Intake / Case Management, Locate, Establishment, Enforcement and Finance.

Role Description

As a team lead, Santh has been involved in the following activities:

- ***Design/development of modules in the case intake / case management functional area.***
- ***Unit testing, Integration and performance testing.***
- ***Requirement gathering and participate in JAD sessions.***
- ***Identifying and solving production issues in the area of Collections and Disbursement.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Madras University, India***		
City, State	***Chennai, Tamil Nadu***		
Degree	***Bachelor of Engineering Computer Science***	***Completion Date***	***11/1993***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***Certified ScrumMaster from Scrum Alliance, Date Completed: 01/2014***
- ***Certified MongoDB for DBAs from MongoDB Inc., Date Completed: 06/2013***
- ***Sun Certified Programmer for the Java™ 2 Platform, Date Completed: 02/2002***
- ***Sun Certified Web Component Developer for J2EE Platform, Date Completed: 03/2002***
- ***IBM Certified System Administrator for Websphere Application Server V5.0, Date Completed: 02/2005***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Windows, IBM Mainframe OS/390, ZOS, VMware***
Hardware	***Windows Server 2008 R2, Windows 7, VMware, Windows Server 2003, Windows XP, ZOS, IBM OS/390***
Software	***C#, Spring, Java, J2EE, ASP .NET, Rabbit MQ, Angular, CSS, JavaScript, Typescript, PowerShell, COBOL, CICS***
Tools	***Team Foundation Server (TFS), SVN, Visual Studio, IBM RAD, Eclipse, IntelliJ, Webstrom, EA for UML***
Databases	***SQL server, IBM DB2, MongoDB, PostgreSQL, MySQL Enterprise***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Nevada Gaming Control Board (GCB)***
Contact Name	***Andrew Tucker IT Manager***
Phone Number	***(775).220-7589***
Fax Number	***n/a***
Email Address	***atucker@gcb.nv.gov***

Client Reference 2

Company Name	***Dell Inc.***
Contact Name	***Gopinath Kandhadi Sr. Principle Engineer***
Phone Number	***(775) 742-7350***
Fax Number	***n/a***
Email Address	***Kandhadi@hotmail.com***

Client Reference 3

Company Name	***Ciber Inc.***
Contact Name	***Manohar Sridharan – Project Manager***
Phone Number	***(916) 580-9201***
Fax Number	***n/a***
Email Address	***maxdynamics@gmail.com***

Santosh Solapurkar

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Santosh Solapurkar***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***6***	**# of Years with Firm:**	***8***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Santosh has over ten years of experience in software testing and has extensively been working on software testing project across domains like Health and Human Services, Welfare Systems, E-commerce, Banking, and Insurance. In addition, he has worked on multiple projects in Welfare systems focused on implementation of Medicaid, SNAP, TANF, CSE, Child Care, and E&T IT systems. Area of expertise/focus include: Test Estimation, Execution and Management. Softwfare Testing (Manual/Automated) Performance testing of web, web services, Online and offline batch, database. Using tools like JMeter, IBM RPT, and Custom Java Code. Tools and Utility development in EJB, Core Java, and IBM Development kit.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Wyoming WES project	***05/2016 – Present***
Company Name	***State of Wyoming, Wyoming Department of Health (WDH)***
Company Location	***Cheyenne, WY***
Role on Project	***Tech Lead, System Administrator***
Software/Hardware Used	***Software: Jboss, Pentaho, Control-M, JBPM, ILOG JRules (WODM/ODM)*** ***Database: Oracle DB*** ***Operating System: Red Hat Linux, Windows 2000 server***
Project Description	
Wyoming Eligibility System (WES) is a web-based Integrated Eligibility solution which administers benefits for the Medicaid, and HMK (CHIP) programs in Wyoming. During DDI, Deloitte successfully transitioned operations and maintenance of WES Medicaid/HMK from Northrop Grumman. Deloitte is responsible for Operations and Maintenance (O&M) services for the Wyoming Eligibility System (WES), resolving defect transitioned from incumbent vendor, Implement outstanding functionality required to meet base business and system requirements, Reduced reliance on monthly batch processes for continued issuance of coverage, improve performance, simplify reporting, and support scalability for additional programs integrated with Medicaid and CHIP in the WES.	
Role Description	
As a Tech Lead/ System Administrator Santosh leads team maintaining Wyoming Eligibility System (WES) • ***Leading and supporting a team for system upgrades and build and deployments*** • ***Client integration for all technical aspects*** • ***Worked on conducting technical session with client and vender*** • ***Verification of existing issues and prepare upcoming technical recommendations*** • ***Conduct performance evaluation tests and optimization of WES framework and infrastructure***	

Nevada HCR-EE project	***11/2012 – 04/2016***
Company Name	***State of Nevada Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Test Lead***
Software/Hardware Used	***Mainframe, iLog Rules engine, DB2, Java JSP.***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
As the Test Lead, Santosh's responsibilities were to:	

Nevada HCR-EE project	***11/2012 – 04/2016***

- ***Perform test execution and test management of major changes implemented for ACA/Healthcare reform.***
- ***Work with the development team members in design, implementation, and testing of major change requests.***
- ***Manage performance evaluation of iLogs rules Engine, Batches and external interfaces like Federal Hub.***
- ***Manage performance evaluation of Case Management and Citizen Portal***
- ***Design and implement automated regression suite of underlying applications.***
- ***Develop automated tests for major components based on Web, SOA, and Mainframe based applications.***

Montana CHIMES project	***01/2012 – 11/2012***
Company Name	***State Of Montana***
Company Location	***Helena, MT***
Role on Project	***Team Lead***
Software/Hardware Used	***WebSphere 7.0 Application Server (WAS), Oracle 11g database, IBM ILOG JRules 7.1, MyEclipse Blue IDE (9.1), Tivoli Access Manager 6.1 (TAM), TIBCO Netrics 4.4, Mule ESB 3.1, Adobe LiveCycle ES 2.5, Atlassian Bamboo***

Project Description

The State of Montana, Department of Public Health and Human Services (DPHHS) administers 150 major assistance programs and consists of 3 agencies, 11 divisions, and approximately 3,100 employees. Deloitte developed and implemented the Combined Health Information and Montana Eligibility System Enterprise Architecture (CHIMES EA) system that allowed them to enter all information in one place to determine SNAP, TANF, Medicaid, and Emergency Assistance benefits. It further allows users to coordinate services, workflow processes, and provide integrated case management. As part of meeting the ACA requirements Deloitte implemented a new self-service portal and data mart. Deloitte also enhanced the system as State policies and business processes changed.

Role Description

As the Test Team Lead, Santosh's responsibilities included:

- ***System test planning and system test execution.***
- ***Report testing status to project Leads.***
- ***Triage Defects with Development team and Subject Mater Experts.***
- ***Test Execution and Management of Interfaces of online and offline interfaces like SDX, BENDIX, SOLQ, IPV, Out of State Benefits etc.***
- ***Test Execution and Management of Business Intelligence Reports.***
- ***Integration testing for Self Service and Case Management applications.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Nagpur University***		
City, State	***Nagpur, India***		
Degree	***Bachelor of Engineering, Industrial Electronics***	***Completion Date***	***04/2003***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***n/a***
Hardware	***Unix (Sun Solaris v5.2), Windows XP, Vista, 2000,, Linux (Red Hat)***
Software	***IBM Rational Robot, HP Mercury QuickTest Professional (v9.2), IBM Test Manager, Parasoft SOATest, HP Quality Center, WATIR, Load Runner, SOAPUI Pro***
Tools	***MS Office (Word, Excel, PowerPoint and Outlook), VBScripting, Unix Shell Scripting, MSDOS Batch Programming, WATIR/RUBY***
Databases	***Oracle DB2***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Nevada Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Laura Smith, Test Manager***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0712***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 2

Company Name	***Nevada Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Sandra Chamberlin, Project Manager (PMO)***
Phone Number	***(775) 684-0578***
Fax Number	***(775) 684-0680***
Email Address	***shamberlin@dwss.nv.gov***

Client Reference 3

Company Name	***Nevada Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Sherry Haar, Functional Manager***
Phone Number	***(775) 684-0722***
Fax Number	***(775) 684-0617***
Email Address	***shaar@dwss.nv.gov***

Satish Mummalaneni

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Satish Mummalaneni***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Project Delivery Lead***	
# of Years in Classification:	***9***	**# of Years with Firm:**	***6***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Satish has over 19 years of experience in designing, developing, testing, test automation, and implementing large IT systems that span web-based, client/server and mainframe technologies. Along with his strong technology experience, he has extensive experience working in the Health and Human Services industry including working on ten different projects and over 19 years of working with Medicaid, SNAP, TANF, CSE, Child Care, and E&T IT systems. Specifically, he has worked alongside the State of Nevada, DWSS for more than 18 years which provides him great insight into the technical and operating environment for the NCSEAS project. He understands the DWSS envirnoment and NOMADS.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Nevada HCR-EE	***07/2012 – Present***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Integration Manager***
Software/Hardware Used	***IBM WebSphere Portal Server 6.1.5, IBM WebSphere Rational Application Developer 7.5, Rational Business Developer v8.0, WODM Rule Designer v8.0, IBM Integration Developer v8.0 on Windows, WebSphere Application Server (WAS) v7.0 on AIX v6.1, IBM Rational Host Access Transformation Services v7.5.1, Jenkins Continuous Integration Server v1.466, IBM WebSphere MQ v7.5, Perforce. Mainframe Hardware: IBM System Z9. Mainframe Software: Z/OS Version 1.10. IDE: IBM Integration Designer v8.0.1, ODM Rule Designer v8.0.1, Rational Business Developer 7.5.4.***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
Satish serves as the Integration Manager role on the HCR-EE project. Satish worked with a team to achieve the following activities: • ***Analyzed and converted Medicaid rules from legacy systems to ILOG rules engine.*** • ***Worked on Federal Hub and Health Insurance Exchange interfaces.*** • ***Aligned the existing Medicaid application to seamlessly integrate with single streamlined application.*** • ***Established service oriented architecture reference model for Health Care reform/ACA requirements.*** • ***Evaluated the impact of MAGI rules on existing Medicaid implementations.*** • ***Integrated CMS guidance, NIEM components framework into overall architecture of reference model to comply with required regulations.*** • ***Converted SNAP/TANF rules from legacy systems to ILOG rules engine.*** • ***Analyzed ACA changes impacts other integrated DWSS CSE and OASIS projects and provided conversion road map and implementation.***	

Deloitte Health Sciences and Government Practice project	***12/2011– 06/2012***
Company Name	***Deloitte HHS Practice***
Company Location	***Arlington, VA***
Role on Project	***Integration Manager***
Software/Hardware Used	***WebSphere Application Server, WebSphere Process Server, ILOG BRMS, Rational Application Developer, WebSphere Integration Developer, DB2.***
Project Description	

Deloitte Health Sciences and Government Practice project	***12/2011– 06/2012***
Deloitte Health Sciences and Government Practice has undertaken a firm-wide initiative to create reference models and consolidating leading practices to strengthen the methodology and tools related with Health Care Reform projects.	
Role Description	
Satish was the Integration Manager on the Deloitte Health Sciences and Government Practice project to create reference models and consolidate leading practices to strengthen methodology, tools and accelerators related with Health care reform projects. Satish worked with a team to achieve the following activities: • ***Established service oriented architecture reference model for Health Care reform/ACA requirements.*** • ***Developed reference implementation and accelerators for MAGI/Non-MAGI rules.*** • ***Evaluated the impact of MAGI rules on existing Medicaid implementations.*** • ***Integrated CMS guidance, NIEM components framework into overall architecture of reference model to comply with required regulations.***	

Nevada AMPS project	***07/2010 – 10/2011***
Company Name	***State Of Nevada, Division of Welfare and Supportive Services – AMPS Project***
Company Location	***Carson City, NV***
Role on Project	***Integration Manager***
Software/Hardware Used	***Windows, Java/JEE, SQL, Hibernate, Struts, jQuery, JSR 286, XML, WebSphere Portal Server, WebSphere Process Server, WebSphere Service Registry and Repository, FileNet, HATS, Rational Application Developer, WebSphere Integration Developer, DB2.***
Project Description	
Deloitte assisted the State in designing, developing, and implementing the Application Modernization and Productivity Services (AMPs) project. The scope of work included: implementing a web portal to present the caseworker with a single consolidated access to multiple systems; implementing a workflow to establish a predefined sequence of operations for imaged documents and data; implementing a document imaging system (DIS) to reduce physical storage space for paper documentation; and integrating the portal with ACCESS Nevada, NOMADS, DIS, and PRISM.	
Role Description	
Satish served as the Integration Manager role on the AMPS project. As the Integration Manager, Satish was responsible for overseeing technical design and implementation for multiple areas of the project that span mainframe and web technologies. Satish worked with a team to achieve the following activities: • ***Mapped NOMADS case registration data to various AMPS objects.*** • ***Created a new case inquiry service for complete NOMADS case data and eventually creating NOMADS case object to be used by AMPS for populating AMPS database.*** • ***Created various services related to case transfer, case access security and NOMADS office hierarchy.***	

Nevada Child Care System (NCCS) project	***10/2007 – 03/2010***
Company Name	***State Of Nevada, Division of Welfare and Supportive Services – Nevada Child Care System (NCCS)***
Company Location	***Carson City, NV***
Role on Project	***Implementation Manager***
Software/Hardware Used	***J2EE, JDBC, Java, ILOG , IBM RSA, RAD, WebSphere application server, Design Patterns, VSS, Perforce, JavaScript , Oracle, DB2 UDB, Windows XP.***

Nevada Child Care System (NCCS) project	***10/2007 – 03/2010***
Project Description	
DWSS developed a web application that provided child care services in addition to allowing providers to submit child attendance online through web attendance module.	
Role Description	
Satish served as the Implementation Manager on the NCSS project. Satish was responsible for overseeing overall conversion and implementation effort. Satish worked with a team to achieve the following activities: • ***Designed and developed conversion application and planned conversion strategy.*** • ***Involved in complete conversion strategies with DWSS SME's and end users about the legacy childcare application (CCMS).*** • ***Converted CCMS oracle data into DB2 with IBM data conversion tools for DB2.*** • ***Mapped the CCMS data, business logic, eligibility rules to NCCS data, business logic, eligibility and rules.*** • ***Performed gap analysis and documented the results and created various case flushing documents for case managers and provider maintenance workers.*** • ***Provided first tier support for all production issues.***	

Nevada Deficit Reduction Act (DRA) project	***01/2006 – 12/2006***
Company Name	***State Of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Conversion Manager***
Software/Hardware Used	***CICS, DB2, JCL, CSP, TSO, SPUFI and QMF, UML, DB2 UDB, Windows XP.***
Project Description	
DWSS developed a web application that provided child care services in addition to allowing providers to submit child attendance online through web attendance module.	
Role Description	
DWSS developed a web application that provided child care services in addition to allowing providers to submit child attendance online through web attendance module. Satish served as the Implementation Manager on the NCSS project. Satish was responsible for overseeing overall conversion and implementation effort. Satish worked with a team to achieve the following activities: • ***Designed and developed conversion application and planned conversion strategy.*** • ***Involved in complete conversion strategies with DWSS SME's and end users about the legacy childcare application (CCMS).*** • ***Converted CCMS oracle data into DB2 with IBM data conversion tools for DB2.*** • ***Mapped the CCMS data, business logic, eligibility rules to NCCS data, business logic, eligibility and rules.*** • ***Performed gap analysis and documented the results and created various case flushing documents for case managers and provider maintenance workers.*** • ***Provided first tier support for all production issues.***	

Nevada DWSS projects	***09/1998 – 06/2010***
Company Name	***State Of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Lead***

Nevada DWSS projects	***09/1998 – 06/2010***
Software/Hardware Used	***J2EE, JDBC, Java, Servlets, JSP, IBM RSA, RAD, ILOG, WebSphere application server, Design Patterns, VSS, Perforce, CSS, HTML, DHTML, JavaScript, Tag libs., YSlow and other front end performance testing tools, UML, DB2 UDB, Windows XP. IBM mainframe and related components like CICS, DB2, JCL, CSP, TSO, SPUFI, VSAM and QMF.***

Project Description

DWSS implemented various projects for the following systems:

- ***NOMADS – Integrated IV-A (TANF) and IV-D (Child Support) system***
- ***ME - Internal system developed to perform Management Evaluations for all of the six programs administered by DWSS***
- ***WPS - Web-based system developed for the Supervisors and Managers of DWSS to be able to evaluate the performance of caseworkers on a monthly basis***
- ***PDS - Portal security applications that provide security access to all web applications managed by DWSS.***
- ***ACCES NV - Customer facing, web-based self-service application for clients to apply for assistance***
- ***OASIS - Web enabled system for managing and monitoring of the Employment and Training programs of the IVA clients.***

Role Description

As the Technical Lead, Satish performed the following activities:

- ***Conducted Design and Technical reviews with project stake holders.***
- ***Designed, Developed, Created database scripts and deployed database in testing regions.***
- ***Mapped data for the new web based system with the mainframe system for data transformation in the subsequent phases.***
- ***Worked on Full Cycle of Software Development from Analysis through Design, Development, and Testing, Integration, Implementation and Stabilization phases.***
- ***Reporting status to DWSS management teams***
- ***Provided first tier support for all production issues.***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***MS University of Baroda***		
City, State	***Vadodara, Gujarat, India***		
Degree	***MS in Engineering***	***Completion Date***	***12/1996***

Institution Name	***Nagarjuna University***		
City, State	***Nagarjuna Nagar, Andhra Pradesh, India***		
Degree	***BS in Engineering***	***Completion Date***	***05/1995***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 04/2011***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Windows, Z/OS, IBM DB2/CICS, AIX, Novell***
Hardware	***Windows NT/2000/XP, Unix, Solaris, IBM AIX, Z/OS, IBM / DELL / HP PC***
Software	***Java, SQL, PL/SQL, COBOL, CSP, CICS, EGL, J2EE, EJB, JNDI, JAAS, JDBC, AWT, Swings, SERVLET, JSP, JSTL, SOAP, JMS, Web Services, JDK, MVC, Tag Libraries, Struts, Hibernate, Design Patterns, J2EE Patterns, SOA, AJAX, XML XSLT, HTML, DHTML, XHTML, Perl, Java Script, VB script, SPRING MVC, IBM WebSphere Application Server, WebSphere Portal and WebSphere Process Server***
Tools	***Perforce, CVS and VSS, SVN, Eclipse and XMLSpy, Jmeter, Yslow and Page, Speed, Microsoft Office, Microsoft Project, Bugzilla***
Databases	***DB2, UDB, MS Access, Oracle***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State Of Nevada (DWSS)***
Contact Name	***David Texeira, DWSS ITM III***
Phone Number	***(775) 684-0540***
Fax Number	***(775) 684-0656***
Email Address	***texeira@dwss.nv.gov***

Client Reference 2

Company Name	***State Of Nevada (DWSS)***
Contact Name	***Laura Smith, Test Manager***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0656***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 3

Company Name	***State Of Nevada (DWSS)***
Contact Name	***Jerry Horine, Database Administrator***
Phone Number	***(775) 684-0556***
Fax Number	***(775) 684-0656***
Email Address	***jhorine@dwss.nv.gov***

Surya Kandula

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Surya Kandula***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Manager***	
# of Years in Classification:	***4***	**# of Years with Firm:**	***5***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Surya has over 19 years of experience in designing, developing, testing, and implementing large IT systems that span web-based, client/server and mainframe technologies. Along with his strong technology experience, he has extensive experience working in the Health and Human Services industry including working on 6 different HHS projects. During his 17 years of working with Medicaid, SNAP, TANF and CSE systems, Surya worked on data exchange interfaces with state and federal agencies, eligibility systems and data conversion for DRA changes in the NOMADS Application. He understands the Nevada environment, having worked on the NOMADS system since 1999. Surya is PMI certified Project Management Professional (PMP).

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Nevada HCR-EE project	***09/2012 – Present***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City NV***
Role on Project	***Project Lead***
Software/Hardware Used	***IBM WebSphere Portal Server 6.1.5, IBM WebSphere Rational Application Developer 7.5, Rational Business Developer v8.0, WODM Rule Designer v8.0, IBM Integration Developer v8.0 on Windows, WebSphere Application Server (WAS) v7.0 on AIX v6.1, IBM Rational Host Access Transformation Services v7.5.1, Jenkins Continuous Integration Server v1.466, IBM WebSphere MQ v7.5, Perforce, Mainframe Hardware: IBM System Z9, Mainframe Software: Z/OS Version 1.10, IDE: IBM Integration Designer v8.0.1, ODM Rule Designer v8.0.1, Rational Business Developer 7.5.4***
Project Description	
The ACA required DWSS to align policies and systems to comply with ACA regulations. For the Health Care Reform Eligibility Engine (HCR-EE) project, DWSS contracted Deloitte to develop an eligibility rules engine that integrated with both existing and new external systems. Deloitte worked with DWSS through policy analysis to reach a mutual interpretation of the regulations, and navigated through evolving policy clarification from CMS. New APTC and Medicaid eligibility rules (including the addition of CHIP) were developed, along with the conversion of existing aged, blind, and disabled (ABD) Medicaid rules. The development of the business rules engine included the integration of an IBM decision center in the existing DWSS system environment.	
Role Description	
Surya serves as the Project Lead of a development team that performed the following activities: • ***Analyzed and converted Medicaid rules from legacy systems to ILOG rules engine.*** • ***Aligned the existing Medicaid application to seamlessly integrate with single streamlined application.*** • ***Evaluated the impact of MAGI rules on existing Medicaid implementations.*** • ***Converted SNAP/TANF rules from legacy systems to ILOG rules engine.*** • ***Analyzed the ACA changes impacts on other integrated DWSS CSE and OASIS projects and provided the conversion road map and implementation strategies.*** • ***Decommissioned the HATS Macro services by developing the business logic in Application Modernization and Productivity Services (AMPS).***	

Maryland CARES project	***07/2010 – 05/2011***
Company Name	***Maryland Department of Human Resources***
Company Location	***1100 Eastern Blvd, Essex, MD***
Role on Project	***Project Lead***
Software/Hardware Used	***IBM mainframe and related components like CICS, DB2, JCL, Cobol, TSO, SPUFI, VSAM and QMF.***
Project Description	
The CARES system is the integrated IV-A and IV-D system for the State of Maryland. This project maintained this system for the Maryland Department of Human Resources.	
Role Description	
As Project Lead, Surya performed the following activities:	

Maryland CARES project	***07/2010 – 05/2011***

- ***Working on Full Cycle of Software Development from Analysis through Design, Development, and Testing, Integration, Implementation and Stabilization phases.***
- ***Conducting Design and Technical reviews with project stakeholders.***
- ***Providing first tier support for all production issues.***

Nevada NOMADS project	***05/1999 – 06/2010***
Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Company Location	***Carson City, NV***
Role on Project	***Technical Lead***
Software/Hardware Used	***JDBC, Java, VSS, Perforce, UML, DB2 UDB, Windows XP. IBM mainframe and related components like CICS, DB2, JCL, CSP, TSO, SPUFI, VSAM and QMF***

Project Description

NOMADS is a fully integrated IV-A (Food Stamps, TANF and Medicaid Eligibility) and CSE (Child Support Enforcement) System. NOMADS is a statewide, on-line system for caseworkers to administer the title IV-A and IV-D programs. It also interfaces with a number of Federal and State agencies and Private entities for claim and applicant information.

Role Description

As Technical Lead, Surya' responsibilities included:

- ***Conducting Design and Technical reviews with project stakeholders.***
- ***Designing, developing, creating database scripts and deploying the database in testing regions.***
- ***Working on Full Cycle of Software Development from Analysis through Design, Development, and Testing, Integration, Implementation and Stabilization phases.***
- ***Conducting Design and Technical reviews with project stakeholders.***
- ***Reporting status to DWSS management teams.***
- ***Providing first tier support for all production issues.***
- ***Analyzing how NOMADS Deficit Reduction Act (DRA) changes impacted other integrated DWSS Child Support (CSE) projects.***

During his tenure, Surya worked on the following modules:

- ***DCFS Interfaces***
- ***MMIS Interfaces***
- ***TANF Eligibility Determination***
- ***FMC Eligibility Determination***
- ***Disag - Federal Data Reporting***
- ***Benefit Issuance***

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Andhra University***		
City, State	***Visakhapatnam, Andhra Pradesh, India***		
Degree	***Bachelor of Science in Engineering***	***Completion Date***	***04/1991***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 09/2009***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Windows, Z/OS, IBM DB2/CICS, AIX, Novell***
Hardware	***Windows NT/2000/XP, Unix, Solaris, IBM AIX, Z/O, IBM / DELL / HP PC***
Software	***Java, SQL, PL/SQL, COBOL, CSP, CICS, EGL, J2EE, EJB, JNDI, JAAS, JDBC, AWT, Swings, SERVLET, JSP, JSTL, SOAP, JMS, Web Services, JDK, MVC, Tag Libraries, Struts, Hibernate, Design Patterns, J2EE Patterns, SOA , AJAX, XML, XSLT, HTML,DHTML, XHTML, Perl, Java Script, VB script, SPRING MVC, IBM WebSphere Application Server, WebSphere Portal and WebSphere Process Server***
Tools	***Perforce, CVS and VSS, SVN, Eclipse and XMLSpy, Jmeter , Microsoft Office, Microsoft Project, Bugzilla***
Databases	***DB2, UDB***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***David M. Texeira, DWSS ITM III***
Phone Number	***(775) 684-0540***
Fax Number	***(775) 684-0656***
Email Address	***Texeira@dwss.nv.gov***

Client Reference 2

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Laura Smith, Test Manager***
Phone Number	***(775) 684-0554***
Fax Number	***(775) 684-0656***
Email Address	***lxsmith@dwss.nv.gov***

Client Reference 3

Company Name	***State of Nevada, Division of Welfare and Supportive Services (DWSS)***
Contact Name	***Jerry Horine***
Phone Number	***(775) 684-0556***
Fax Number	***(775) 684-0656***
Email Address	***jhorine@dwss.nv.gov***

Kayla Wells

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Kayla Wells***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***7***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Throughout her career, Kayla has been a part of many teams and has learned to communicate and collaborate effectively with others in order to achieve a common goal and provide clients with work products that meet or exceed their business needs and requirements. Her attention to detail, organizational skills, understanding and application of logical structure, and assiduous nature ensure that she is providing the best input when supporting her team in collaborative work efforts. As a Track Lead on the Open Systems team of PACSES, Kayla expanded her exposure, knowledge, and responsibilities in each of the phases of the System Development Lifecycle. This included gathering and revising requirements, initial design efforts including start-up documentation and mock-ups, design and development, implementation to production, and supporting applications post implementation. As an Application Manager on PACSES, Kayla has overseen the successful deployment of multiple releases, completed estmation efforts for new work, and managed the day to day activities of those team members which she supervises. Her projects include numerous customer service initiatives from requirements to deployment including customer on-line application and self-service, Mobile website, and interfaces.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Pennsylvania PACSES project	***08/2010 – Present***
Company Name	***Commonwealth of Pennsylvania Bureau of Child Support***
Company Location	***Harrisburg, PA***
Role on Project	***Open Systems Application Manager***
Software/Hardware Used	***Unisys Mainframe HSH-F, WebTS, eQuate (client and server-based), OpCon, SeGov, FTP, Oracle, KMSYS TeaaS, Adobe LiveCycle ES2, webMethods (ECS2), Workspace, Contentspace, Mainframe Resources Utilized, Windows Client (WPF), PHP File Server, Docushare, ISA, PACSES AD***

Project Description

The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.

Role Description

As an Application Manager on the Open Systems team of PACSES, Kayla is responsible to manage a team working on the system replacement effort for Pennsylvania while also acting as a subject matter expert point of contact for Open Systems modernization and enhancement work that is being completed. Kayla oversees all day to day work of the team and is responsible for status reporting to the Project Manager on PACSES, the PPMD on PACSES, as well as the client. Kayla manages the financials and schedule for the system replacement work, and is also involved in estimation for new work that the client is pursuing, including but not limited to the creation of level of effort documents, work orders, WOTTs, staffing plans, and work plans.

As a Track Lead on the Open Systems team of PACSES, Kayla expanded her exposure, knowledge, and responsibilities in each of the phases of the System Development Lifecycle. She was responsible for managing separate teams of developers and other Open Systems team members during all phases of multiple initiatives, maintenance and warranty releases occurring in parallel, as well as managing configuration management of technology components related to the releases. Kayla successfully implemented large initiative work orders, as well as smaller maintenance and warranty releases into production, and acted as the on-site point of contact during production releases.

As an Analyst on the Open Systems team of PACSES, Kayla had exposure and experience in all phases of the System Development Lifecycle. She was involved in gathering system requirements and creating requirements documentation. She participated and facilitated client discussions in order to complete general system design activities and deliverables. Kayla was also responsible for the necessary documentation for the remaining phases of the SDLC, from detailed system design to implementation documents. Kayla managed small teams of developers during development and testing phases, working to ensure that all work products delivered to the client on time and met or exceeded their business needs. Her projects include interfaces, child support on-line application and self-service, mobile website, and imaging.

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Pennsylvania State University***		
City, State	***State College, PA***		
Degree	***Bachelors of Science***	***Completion Date***	***05/2010***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 06/2017***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***C++, SQL***
Hardware	***Windows***
Software	***Visual Studio: Team Foundation Server (TFS), Balsamiq, Sparx Enterprise Architect***
Tools	***Microsoft Office: Excel, Power Point, Project, Visio, Word***
Databases	***Oracle, Microsoft SQL Server***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

The following are Kayla's references. Due to client confidentiality that restricts us from providing direct personal information, we have provided Rakesh Duttagupta's contact information will connect you directly to the client who would be able to discuss the project with you for two of her references. We would respect similar wishes of DWSS as a client, should you request it.

Client Reference 1

Company Name	***Commonwealth of Pennsylvania, Department of Human Services (DHS), Bureau of Child Support Enforcement (BCSE)***
Contact Name	***Joyce Match***
Phone Number	***(717) 705-5104***
Fax Number	***(717) 705-5197***
Email Address	***joyceMatch@pacses.com***

Client Reference 2

Company Name	***Deloitte Consulting LLP***
Contact Name	***Rakesh Duttagupta, Deloitte Principal***
Phone Number	***916 288 3977***
Fax Number	
Email Address	***rduttagupta@deloitte.com***

Client Reference 3

Company Name	***Deloitte Consulting LLP***
Contact Name	***Rakesh Duttagupta, Deloitte Principal***
Phone Number	***916 288 3977***
Fax Number	
Email Address	***rduttagupta@deloitte.com***

Vicky Tillman

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Vicky Tillman***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Solution Engineer***	
# of Years in Classification:	***9***	**# of Years with Firm:**	***12***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Vicky has over 31 years' experience in child support and 12 years' experience implementing large-scale Child Support systems in various states including Oregon Origin, Michigan, Pennsylvania PACSES, Florida CAMS, Indiana, Kentucky and Oregon. Each system had a different technology platform ranging from IBM mainframes, to Microsoft web technology to SAP ERP/COTS. These implementations provide a unique perspective on best practices and training approaches for child support solutions. Vicky's knowledge of Child Support allows her to understand and exceed the qualification requirements for CSE system implementations. She brings her current Oregon Origin experience as the functional lead for the financial management thread, and Training co-lead.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Oregon Origin project	***02/2016 – Present***
Company Name	***State of Oregon, Department of Justice***
Company Location	***Salem, OR***
Role on Project	***Business Analyst, Training Co-Lead***
Software/Hardware Used	***Microsoft Suite, IndustryPrint, SharePoint, Adobe Captivate***
Project Description	
This project entails the transfer and customization of the California CSE system to meet Oregon's requirements. Complete CSE implementation with the CA CSE transfer system from CA and reporting and data warehousing design concepts from design Michigan and New Jersey. The project follows the full SLDC lifecycle through implementation over a 3 year timeframe, followed by a 2 year maintenance and operations period.	
Role Description	
Vicky served as Business Analyst/Subject Matter Expert for the Financial Thread and performed the following activities including: • ***Participated in the Financial Requirements Joint Application Design (RJAD) sessions with the client to identify the financial processing requirements for the new child Support system.*** • ***Developed on-time delivery of the Functional Design Documentation which included the documentation for all processes including the batch and interface with partner agencies, page design, process flows and all forms creation included in the financial process.*** ***Vicky moved to Training Co-Lead in August, 2016. Her duties have included User Training Management Plan, Training Needs Analysis, Instructional Design, Storyboard and Proof of Concept Development for WBTs and ILTs. She also is responsible for content development for all training materials. In this role, she uses Adobe Captivate, which is similar to Articulate and Camtasia.***	

Pennsylvania PACSES project	***02/2012 – 11/2012; 02/2010 – 08/2010; 08/2005 – 03/2007***
Company Name	***Commonwealth of Pennsylvania, Department of Human Services (DHS), Bureau of Child Support Enforcement (BCSE)***
Company Location	***Harrisburg, PA***
Role on Project	***Various roles and assignments including Subject Matter Expert /Business Analyst / System Tester***
Software/Hardware Used	***PACSES consists of a mainframe-based application running on a Unisys mainframe and web-based Open System components developed in .NET and accessing an Oracle database. Windows Applications, MS Office, Mobile development, Predictive Analytics, Adobe LiveCycle***
Project Description	
The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.	

Pennsylvania PACSES project	***02/2012 – 11/2012; 02/2010 – 08/2010; 08/2005 – 03/2007***
Role Description	
As System Tester, Vicky's responsibilities include creating, reviewing and executing test scripts using the Microsoft Test Manager (MTM) application. She is also responsible for conducting peer review of other testing results and defect resolution. ***As System Tester, Vicky's responsibilities included creating, reviewing and executing test scripts using the Microsoft Test Manager (MTM) application. She was also responsible for conducting peer review of other testing results and defect resolution. In this role previously, she managed the testing for major deliverable for Forms Redesign. She also addressed comments received from client on the informal submission of design documentation to ensure client concerns were addressed in the final submission*** ***As Business, Analyst, Vicky's performed the following activities including:*** • ***User Support responsibilities including:*** – ***Responding to child Support user inquiries.*** – ***Providing quality assurance review of application meeting minutes.*** – ***Participating in site visits to evaluate their use of the application and identifying solutions to documented issues.*** • ***Documentation responsibilities including:*** – ***Developing and delivering workshop sessions.*** – ***Creating and reviewing course curriculum for the PA CSE Training Institute facilitated by Penn State University.*** – ***Creating Intranet and On-Line help documents.*** – ***Developing user tips and impacts relating to system modifications.*** – ***Issuing daily production reports.*** – ***Developing post implementation evaluation documentation to gage the success of system modifications.*** • ***Technical assistance responsibilities including:*** – ***Participating in system design.*** – ***Reviewing, prioritizing and processing application incidents.*** – ***Reconciling system data problems through data clean up initiatives.*** – ***Reviewing requirements, functional and technical design documents, test scripts, test plans, and test results.*** – ***Performing impact analyses on system enhancements and communicating this to key management and development personnel.***	

Indiana INvest project	***12/2012 – 02/2016; 03/2007 – 09/2009***
Company Name	***Indiana Department of Child Services, Child Support Bureau***
Company Location	***Indianapolis, IN***
Role on Project	***Business Specialist / Business Analyst***
Software/Hardware Used	***IndustryPrint, Microsoft Office Suite***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
For her assignment from 12/2012 to 02/2016 in Statement of Work (SOW) 5 and 6 along with a staff augmentation role, Vicky managed key tasks and activities in both SOW contracts. In SOW 5, she performed the following activities including:	

Indiana INvest project	***12/2012 – 02/2016; 03/2007 – 09/2009***

- ***Served as the Business Analyst/Specialist for the Enforcement Thread during this SOW.***
- ***Participated in the Enforcement Requirements Joint Application Design sessions with the client to identify the requirements for the new child Support system.***
- ***Developed on-time delivery of the Business Requirement Specification deliverable documents associated with the Enforcement business process.***
- ***Completed Requirements Augmentation for finalization of system-wide requirements.***

Vicky's activities during SOW 6, included:

- ***Served as the Business Analyst/Specialist for the Requirement Augmentation during this SOW.***
- ***Participation the Requirements Joint Application Design sessions with the client to identify the required modifications to the existing requirements written during the prior statements of work for the new system.***
- ***Development of the Business Requirement Specification deliverable documents and additional artifacts for required updates to existing documentation.***
- ***Conducting knowledge sharing activities with the state Business Analyst.***

For her assignment from 03/2007 to 09/2009. This project supported the ongoing maintenance operations of the Indiana statewide Child Support Enforcement system. Due to state and federal mandates and requirement changes to the business processes, ongoing development for enhancements to the financial, locate, Interstate, Enforcement modules were required.

In her role as Business Analyst, Vicky's responsibilities included:

- ***Development and implementation of new Centralized Enforcement Unit for the Indiana Child Support Bureau.***
- ***Development and Implementation of new independent Interstate Unit for the Indiana Child Support Bureau.***
- ***Documentation responsibilities included:***
  - ***Developing and delivering workshop sessions.***
  - ***Developing and creating training materials including user tips.,***
  - ***Creating weekly status meeting decks.***
- ***Assist client with job descriptions, responsibilities and estimates for staffing for new unit.***
- ***Worked with the client to identify and address training issues with the staff.***

Kentucky CHFS CSE Modernization project	***08/2010 – 02/2012***
Company Name	***Commonwealth of Kentucky, Cabinet for Health and Family Services (CHFS), Child Support Enforcement (CSE)***
Company Location	***Frankfort, KY***
Role on Project	***Business Analyst, Trainer and Subject Matter Advisor***
Software/Hardware Used	***Business Objects Data Services, SQL Server, The Business Intelligence solution also utilizes Business Objects Web and SQL Server Reporting Services for reporting, Xcelcius for Dashboards, and Predictive Workbench for Data Analytics Microsoft Active Directory Federation Services. IBM mainframe IMS databases. HTML, JavaScript, and SilverLight were used in developing the user interface. Dollar Universe was used for batch scheduling.***
Project Description	
This project was a multiple thread solution that provides web portal services for child support case participants and caseworkers; a locate portal for caseworkers to obtain case participants information from external sources, and a (BI) business intelligent solution for Federal Reports; Operational and Ad hoc reports.	
Role Description	

Kentucky CHFS CSE Modernization project	***08/2010 – 02/2012***

Vicky served a dual role as a Subject Matter Advisor for both the training team and testing team for the development of the client facing portal solution. Her responsibilities included:

- ***Creation of Process Flows, Business Process Models and Use Case Documentation.***
- ***Attending and documenting RJAD sessions activities.***
- ***Tracking of requirement throughout the life cycle of the project.***
- ***Creation of training documentation, including User Manuals for the Portal (Child Support Web Site, Business Intelligence and Locate Portal).***
- ***Delivered training to end-users.***
- ***Delivered "Train the Trainers" Training for State Trainers.***

Florida CAMS project	***10/2009 – 01/2010***
Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Company Location	***Tallahassee, FL***
Role on Project	***Business Analyst***
Software/Hardware Used	***Microsoft Office Suite, IndustryPrint***
Project Description	
The CAMS project implemented full CSE functionality through configuration and customization of an SAP/COTS solution. Deloitte executed the full SDLC project through deployment and federal certification into maintenance and operations. The Florida CSE program manages more than 656,000 child support cases through roughly 4,000 representatives in 43 service sites (including external agencies) spread throughout 65 counties.	
Role Description	
During her tenure, Vicky reviewed functional specifications documents for formatting and content; addressed comments received from the client; and assisted with final packaging of all functional specifications and core document for submission to client.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***University of Kentucky***		
City, State	***Lexington, KY***		
Degree	***Business Administration Associate Degree***	***Completion Date***	***12/1989***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***COBOL, CICS***
Hardware	***IBM PC/Compatibles, Windows 2000, Windows XP***
Software	***IndustryPrint, Adobe Lifecycle, Captivate, IBM Rational JAZZ***
Tools	***Microsoft Office Suite, Team Foundation Server (TFS), Microsoft Test Manager (MTM)***
Databases	***n/a***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Commonwealth of Pennsylvania, Department of Human Services (DHS), Bureau of Child Support Enforcement (BCSE)***
Contact Name	***Joyce Match, PACSES Application Manager***
Phone Number	***(717) 705-5104***
Fax Number	***(717) 705-5197***
Email Address	***joyceMatch@pacses.com***

Client Reference 2

Company Name	***Indiana DCS, Child Support Bureau***
Contact Name	***Stephen J.(Joe) Jean, IV-D Assistant Deputy Director***
Phone Number	***317-232-0655***
Fax Number	***n/a***
Email Address	***stephen.Jean@dcs.IN.gov***

Client Reference 3

Company Name	***Commonwealth of Kentucky, Cabinet for Health and Family Services (CHFS), Department of Income Support (DIS)***
Contact Name	***Steven P. Veno, Commissioner***
Phone Number	***(502) 564-7941 ext. 4819***
Fax Number	***(502) 564-4030***
Email Address	***stevenP.Veno@ky.gov***

Sandy Mulligan

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Sandra (Sandy) Mulligan***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.			
# of Years in Classification:	***5***	**# of Years with Firm:**	***11***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

With over 17 years of experience working in the public sector and a degree in Computer Information Systems, Sandra has extensive experience in the implementation and/or maintenance of large-scale child support automated systems in various states including Florida, Pennsylvania, Texas, Michigan, Kentucky and Arkansas. She has experience in business process refinement projects for child support programs in Texas, Indiana, New York, and Wisconsin, and data analysis and reporting redesign for Federal OCSE. During her 15 years working in child support programs, she has played a major role in all phases of a child support system, including process analysis, requirements definition, design, development, testing, implementation, training development and delivery, and operations and maintenance.

She has a deep understanding of the enforcement and financial business process area and the Federal Reports, including the OCSE-157 and OCSE-34, and federal certification requirements for a child support system including a working knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009. She managed the federal test deck certification for the Florida CAMS project. She has developed training materials for new CSE system implementations and has delivered train-the-trainer sessions and end user training sessions.

On her last two projects, which were Integrated Eligibility systems, she provided subject matter expertise for the IV-A / IV-D interfaces during the System Test and User Acceptance phases of the projects.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Rhode Island Unified Health Infrastructure (RI UHIP) project	***05/2016 – 08/2016***
Company Name	***State of Rhode Island, Executive Office of Health and Human Services (EOHHS), Department of Health and Human Services (DHS), and Healthsource RI (HSRI)***
Company Location	***Providence, RI***
Role on Project	***Child Support Subject Matter Advisor***
Software/Hardware Used	***JAVA Enterprise Edition (J2E), JIRA, JAMA, Cisco VPN, Microsoft Office Suite***
Project Description	
The Project Rhode Island Unified Health Infrastructure (RI UHIP) is a combined Health Information Exchange (HIX) and Integrated Eligibility System (IES) implementation.	
Role Description	
Sandra provided subject matter knowledge of the child support program and the interface functionality between RIBridges (IVA system) and RIKids (Child Support system) to the eligibility project team. She facilitated daily UAT status calls between the two agencies to address UAT defects and system functionality. She performed gap analysis of the existing functionality against the functionality design documentation and data mapping documentation. She performed defect triage and defect resolution during UAT and Extended Regression Testing (ERT) phases. She validated inbound/outbound CSE Interface files to proactively identify issues. She obtained clarifications from the client and UAT testers. She performed test execution in the SIT/UAT/Conversion environments. She created and executed test scenarios for conversion activities. She supported UAT test activities by providing clarification and assistance to CSE testers of RIBridges. She modified functional design documentation based on defect issues. She performed change request activities by attending the design session and preparing the change request documentation.	

Virginia Enterprise Delivery System Program (EDSP) project	***02/2016 – 04/2016***
Company Name	***Virginia Department of Social Services (VDSS)***
Company Location	***Richmond, VA***
Role on Project	***Child Support Subject Matter Advisor***
Software/Hardware Used	***JAVA Enterprise Edition (J2E), Cisco VPN, IBM Rational ClearQuest Tool, Microsoft Office Suite***
Project Description	
The Enterprise Delivery System Program (EDSP) project was chartered to expand the current eligibility system (VaCMS) to include TANF, SNAP, MA and LIHEAP programs. Virginia expanded VaCMS components to implement the health care reform requirements for MAGI. The EDSP solution is fully operational and compliant with ACA regulations including MAGI rules and federal hub integration.	
Role Description	
Sandra provided subject matter knowledge of the child support program and the interface functionality between VaCMS (IVA system) and APECS (Child Support system) to the eligibility project team. She facilitated design sessions to finalize requirements for the interface between the IV-A Eligibility system	

Virginia Enterprise Delivery System Program (EDSP) project	***02/2016 – 04/2016***

and the IV-D Child Support system. She performed gap analysis of the existing functionality against the information provided by DCSE during prior design and requirement sessions. She updated four interface control documents based on feedback and comments from the requirement and design sessions and submitted them for approval to the client on three separate dates. She developed the test plan for the execution of the end-to-end scenarios between VaCMS – APECS during the SIT phase of the project. She managed the SIT phase of the project and modified the test plan as needed to incorporate retesting of defects (CQs) identified during SIT and provided clarifications to questions raised by the DSS and DCSE staff. She supported defect resolution by testing the functionality of the data transfer between VaCMS and APECS. She provided UAT Support by providing clarification to the DSS lead, performing file validation and performing defect (CQ) resolution.

Pennsylvania PACSES project	***02/2015 – 02/2016***
Company Name	***Commonwealth of Pennsylvania, Domestic Relations and Bureau of Child Support***
Company Location	***Harrisburg, PA***
Role on Project	***System Integration Testing Thread Lead***
Software/Hardware Used	***PACSES consists of a mainframe-based application running on a Unisys mainframe and web-based Open System components developed in .NET and accessing an Oracle database. Windows Applications, MS Office, Mobile development, Predictive Analytics, Adobe LiveCycle, Team Foundation Server 2015 (TFS), Project Management Center (PMC), MTM.***

Project Description

The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.

Role Description

As a Testing Thread Lead, Sandra successfully led the regression testing efforts for migration of the mainframe and open system applications from the current enterprise-wide infrastructure to the newly established Pennsylvania Compute Service (PACS) enterprise-wide infrastructure in coordinating with the other program offices under the Department of Public Welfare. Her responsibilities included:

- ***Preparing of the test plan for a full regression of PACSES.***
- ***Assigning test scenarios and test cases to testers based on functionality.***
- ***Reviewing test scripts content for accuracy and completeness and test execution results.***
- ***Managing defect resolution.***
- ***Providing status reports to stakeholders.***

She managed the migration of mainframe and open system applications in each of the environments (Development, Integration, System Integration, User Acceptance, and Production) to the new enterprise infrastructure during a three month phased approach. She developed the project deliverable documents for PACSES.

She was also assigned the role of Implementation Thread Lead and managed the implementation of the PACSES Imaging application to the Philadelphia and Allegheny Pilot counties. In this roles, she managed the migration process, developed the deployment playbook and deployment instructions, managed production defects and change requests resolution. She is also supported the PACSES application triage team as incidents were reported by the Helpdesk and served as a liaison between the county site support team and the development team to expedite production issues with the new imaging solution. Prior to implementation, Sandra also performed testing activities for the new document generation and imaging solution for the mainframe and open systems. Her responsibilities included researching the existing functionality and reporting issue; preparing detail test scripts; completing the execution and

Pennsylvania PACSES project	***02/2015 – 02/2016***
documentation of the test script; and conducting peer review of other testing results along with defect resolution.	

Indiana INvest project	***05/2014 – 02/2015***
Company Name	***Indiana Department of Child Services/Child Support Bureau***
Company Location	***Indianapolis, IN***
Role on Project	***Customer Self Service Portal Lead***
Software/Hardware Used	***IndustryPrint, Microsoft Office Suite***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
Sandra served as the Team Lead for the Client Self Service Portal thread of the SOW for the Business Process Redesign project. In this role, Sandra served as the manager of the requirements gathering activities for a single project thread. She led the preparation efforts for the Requirements Joint Application Design (RJAD) sessions with the client to identify the requirements for the new Indiana Child Support Customer Facing Portal. She was responsible for the development of the deliverables associated with the CSS Portal thread business process. She was instrumental in developing, deploying and managing the formal knowledge sharing activities with the state business analysts to assign tasks associated with RJAD sessions. These formal knowledge sharing activities were designed to prepare analysts for the design sessions as part of the Design Phase of the new Indiana Child Support Enforcement (INvest) system implementation.	

Indiana INvest project	***06/2013 – 02/2014***
Company Name	***Indiana Department of Child Services/Child Support Bureau***
Company Location	***Indianapolis, IN***
Role on Project	***Financial Lead***
Software/Hardware Used	***IndustryPrint, Microsoft Office Suite***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
Sandra served as the Team Lead for the Financial thread of the SOW for the Business Process Assessment project. In this role, Sandy managed a Senior Specialist Senior, a Consultant and a Business Analyst. She facilitated the Financial Requirements Joint Application Design sessions with the client to	

Indiana INvest project	***05/2014 – 02/2015***
identify the financial processing requirements for the new Indiana Child Support system, INvest. Sandra was responsible for the development of the deliverables associated with the Financial business process.	

OCSE Data Analytics and Technical Support project	***10/2012 – 06/2013***
Company Name	***Division of Policy, Research and Planning (DPRE) within the Office of Child Support Enforcement (OCSE), an Office of Administration for Children and Families (ACF)***
Company Location	***Washington, D.C.***
Role on Project	***Business Analyst***
Software/Hardware Used	***Microsoft Office Suite, Tableau***
Project Description	
The federal Office of Child Support Enforcement (OCSE) partners with federal, state, tribal, local governments, and others to promote parental responsibility so that children receive reliable support from both of their parents. In fiscal year 2013, the program served 16 million children and collected $28 billion nationwide. This project involved an analysis of the data OCSE collects from the states, territories, and tribes to suggest potential uses of the data, provide conceptual dashboards, and provided further advanced analytics suggestions. It also analyzed the Annual and Preliminary Reports to Congress process and content, and provided new templates.	
Role Description	
Sandra facilitated various client meetings. She facilitated 12 data identification sessions with data owners, data analysts and data users within OCSE's central and regional offices. She also reviewed data and reports in the various client data repositories in order to analyze the existing data elements available to OCSE. She managed the project deliverable and documents to ensure quality and timely delivery to the client. Through data analysis activities, Sandra identified data variables for potential key performance indicators, dashboards, and advanced analytics, which will be used to develop conceptual dashboard and advanced analytics models. She led the development effort of the prototype for the Annual Child Support Annual Report.	

Pennsylvania PACSES project	***02/2012 – 11/2012***
Company Name	***Commonwealth of Pennsylvania, Domestic Relations and Bureau of child Support***
Company Location	***Harrisburg, PA***
Role on Project	***System Integration Tester***
Software/Hardware Used	***PACSES consists of a mainframe-based application running on a Unisys mainframe and web-based Open System components developed in .NET and accessing an Oracle database. Windows Applications, MS Office, Mobile development, Predictive Analytics, Adobe LiveCycle***
Project Description	
The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.	
Role Description	

Pennsylvania PACSES project	***02/2012 – 11/2012***
Sandra performed testing activities for system issues and new system implementation of the mainframe child support system, the Performance Improvement Module and the Pennsylvania Child Support Web Site, including by not limited to: researching the existing functionality and reporting issue; performing pre-migration and post-migration test execution; preparing detail test scripts; completing the execution and documentation of the test script, facilitating comment resolution to address any client issues, conducting peer review of other testing results and defect resolution.	

Kentucky CHFS CSE Modernization project	***10/2011 – 02/2012***
Company Name	***Commonwealth of Kentucky, Cabinet for Health and Family Services (CHFS), Child Support Enforcement (CSE)***
Company Location	***Frankfort, KY***
Role on Project	***Business Analyst, Trainer and Subject Matter Advisor***
Software/Hardware Used	***Business Objects Data Services, SQL Server, The Business Intelligence solution also utilizes Business Objects Web and SQL Server Reporting Services for reporting, Xcelcius for Dashboards, and Predictive Workbench for Data Analytics Microsoft Active Directory Federation Services (ADFS). IBM mainframe IMS databases. HTML, JavaScript and SilverLight were used in developing the user interface. Dollar Universe was used for batch scheduling.***
Project Description	
This project was a multiple thread solution that provides web portal services for child support case participants and caseworkers; a locate portal for caseworkers to obtain case participants information from external sources, and a (BI) business intelligent solution for Federal Reports; Operational and Ad hoc reports.	
Role Description	
Sandra served a dual role as a Subject Matter Advisor for both the training team and testing team. She was responsible for developing and reviewing key training documentation for the UAT testers along with the End Users prior to implementation of the applications. She served as a Testing Lead for the UAT phase and Implementation Readiness phase of the project to ensure system functionality along with accuracy of the business process. She served as a key resource in the UAT execution phase of the project and was responsible for the final UAT Results deliverable documentation, which was delivered on time and accepted by the client without any required changes. As part of her training role, she provided two-day end user training to field staff. She was also implementation lead for the locate portal with the 19 service providers to ensure readiness of data transfer to production.	

Florida CAMS project	***01/2008 – 10/2011***
Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Company Location	***Tallahassee, FL***
Role on Project	***Financial Lead, Subject Matter Advisor***
Software/Hardware Used	***mySAP Business Suite, ECC, PSCD, CRM, HPQC, Serena Requirement Traceability Management (RTM) tool and Crystal Report***
Project Description	
The CAMS project implemented full CSE functionality through configuration and customization of an SAP/COTS solution. Deloitte executed the full SDLC project through deployment and federal certification into maintenance and operations. The Florida CSE program manages more than 656,000 child support cases through roughly 4,000 representatives in 43 service sites (including external agencies) spread throughout 65 counties.	
Role Description	

Florida CAMS project	***01/2008 – 10/2011***

Sandra served as a Lead Subject Matter Expert in the functional area of Financial Management. She facilitated 16 weeks of JAD sessions with the business process owners and subject matter experts to develop the business process flows and capture business requirements. She led the Deloitte team during the JAD sessions to ensure that deliverables were submitted within the project timeframe. She worked with the client to further define the system requirements and business rules. As part of the blueprinting phase of the project, Sandra facilitated the design sessions and clarification meetings with the client. She wrote sections of the business blueprint deliverable document. She reviewed and modified the supporting functional specification documents. She reviewed and approved the configuration documentation as part of the realization phase of the project. She reviewed the functional unit test scenarios and worked with the client to identify integration test scenarios. She performed integration testing and defect management activities. She also developed key training documentation for the training team and worked with the client to obtain approval of those training documentation.

At the request of the client, she was promoted to Functional Lead over the Financial Functional Team of six functional resources. She managed the team activities and client meetings. During the UAT phase of the project, she led the defect resolution activities for the ECC enhancements, interfaces, and conversion processes. She also led a major UAT testing effort for the Federal Test Deck that expanded over a six-month period. She provided a supporting role in preparation of the several key project deliverables.

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***DeVry University***		
City, State	***Dallas, Texas***		
Degree	***Bachelor of Science, Computer Information Systems***	***Completion Date***	***10/2002***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

None

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***COBOL, CICS, Oracle, SAP***
Hardware	***IBM PC/Compatibles, Windows 2000, Windows XP***
Software	***mySAP Business Suite, ECC, CRM, BW, SQL, PostalSoft, Microsoft Visual Studio 2010, Crystal Reports, IndustryPrint, Adobe Lifecycle, Captivate, Tableau, Automation Anywhere***
Tools	***Serena RTM, HP Quality Center (HPQC), Team Foundation Server (TFS), Mercury Test Director, Microsoft Test Manager (MTM), JIRA, JAMA, IBM Rational ClearQuest***
Databases	***SAP Middleware, Oracle 9i, MS SQL Server***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Indiana DCS/Child Support Bureau***
Contact Name	***Stephen (Joe) Jean, IV-D Assistant Deputy Director***
Phone Number	***(317) 232-0655***
Fax Number	***n/a***
Email Address	***stephen.Jean@dcs.IN.gov***

Client Reference 2

Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Contact Name	***Mary Whitacre, CAMS Project Manager***
Phone Number	***(850) 510-3864***
Fax Number	***n/a***
Email Address	***whitacrm@dor.state.fl.us***

Client Reference 3

Company Name	***Florida Department of Revenue, Child Support Enforcement Division***
Contact Name	***Lorene Broussard, Revenue Program Administrator***
Phone Number	***(850) 617-8140***
Fax Number	***n/a***
Email Address	***BroussaL@dor.state.fl.us***

Sadruddin Ali

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Sadruddin Ali***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Manager***	
# of Years in Classification:	***10***	**# of Years with Firm:**	***10***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Sadruddin Ali is a Technology practitioner with over 16 years of experience in project management, technology transformation, business process reengineering, technology strategy ,testing, and data management for large scale global implementation in Public Sector and Financial industries. He was instrumental in recovery and successful realignment and delivery of projects at Workplace Safety and Insurance Board (WSIB) at Ontario. He led the project management office for the Commonwealth of MA Child Support Enforcement project. He also has proficiency in leading custom application development projects in the Child Support Enforcement (State of Wisconsin), Health and Human Services (HHS) at Disaster Recovery (GOHSEP, Louisiana), HIX (MA), HCSIS (CoPA), SACWIS (DC, TN, PA-Allegheny, NJ), Transportation (PA), Taxation (OH). He has the technology proficiency in J2EE, Java, .NET, JSP, SharePoint, Webfocus, Websphere, Oracle, DB2, and host of other tools.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Ohio Benefits (Integrated Eligibility) project	***03/2017 – Present***
Company Name	***State of Ohio: Department of Children and Family – Integrated Eligibility and Child Support Enforcement***
Company Location	***Columbus, OH***
Role on Project	***Project Manager***
Software/Hardware Used	***Windows 7, Java, J2EE, Oracle***
Project Description	
The Ohio Department of Administrative Services (DAS) and Department of Job and Family Services (JFS) undertook a project to modernize the integrated eligibility system named Ohio Benefits.	
Role Description	
Sadruddin has the role of the DAS project manager and leading a team consists of 3 agencies and 3 vendors to implement interfaces between Ohio Benefits and other external systems (Child Support, Benefit Card Issuance, etc.). The role includes managing the design, development, and testing phases of interfaces, managing risks and issues, upcoming staffing allocation, briefing project executives, managing enhancements, project plan, and day-to-day project management activities.	

Wisconsin Child Support Document Generation Replacement project	***03/2016 – 09/2016***
Company Name	***State of Wisconsin, Department of Children and Family***
Company Location	***Madison, WI***
Role on Project	***Program Manager***
Software/Hardware Used	***Thunderhead, IBM BPM, IBM FileNet, MS Excel, MS PowerPoint, MS Word***
Project Description	
The Wisconsin Child Support Program helps parents obtain court orders and allocate financial and medical support for their children. The goal of the Wisconsin Child Support Document Generation Replacement Project is to modernize the Child Support (KIDS) document generation subsystem. This project consists of installation, integration and implementation of a new document generation subsystem replacement using commercial off the shelf (COTS) software purchased by DCF.	
Role Description	
Managed the design, development and implementation phases of Infrastructure and Integration (I&I) project, managing risks and issues, quality control, upcoming staffing allocation, and project plan	

Massachusetts COMETS HD – PMO project	***05/2015 – 02/2016***
Company Name	***Commonwealth of Massachusetts: Department of Revenue – Child Support Enforcement***
Company Location	***Boston, MA***
Role on Project	***Project Manager***
Software/Hardware Used	***Windows 7, Microsoft Project, MS Offices, Tableau***
Project Description	
The Deloitte team provided advisory services to Bureau of Child Support Enforcement which included the development of an IT Technology roadmap, gathering requirements and drafting an RFR, and managing the project management office of COMETS HD, the state's child support enforcement system with a total case load of 217,000.	
Role Description	
Sadruddin led the Program Office for COMETS HD program for Child Support Enforcement for Department of Revenue (DOR). The role included reporting project status to DOR leadership and executives, managing the COMETS HD project that included the SI, QA, and IV&V vendors, managing risks and issues, change requests, upcoming staffing allocation, and project plan. He led a team of 5 Deloitte resources to support the program office. In addition to his day-to-day project management activities, he served as an advisor to the DOR executives on project management best practices, key areas that DOR would need to focus, and pitfalls to avoid. He also provided analytics on project health to the DOR leadership along with recommendations to adjust the course of the project. His responsibility also included reporting the project status to the Federal Office of Child Support Enforcement (OCSE) along with explanations of project variances	

Canada System Integration/Portal Implementation project	***12/2013 – 06/2014***
Company Name	***Province of Ontario, Canada: Workplace Safety and Insurance Board (WSIB)***
Company Location	***Toronto, Canada***
Role on Project	***Portal Manager***
Software/Hardware Used	***XML, XSD, Java, J2EE, Windows server 2008, AIX, Guidewire, Alphinat, SmartGuide, Virtual servers***
Project Description	
WSIB executed a large-scale initiative to modernize its information technology systems and processes across the enterprise. The two primary aspects of this transformation include a back-end accounts and claims management system, primarily used by WSIB workers, and a front-end portal solution to be used primarily by employers, workers and health care providers who do business with the WSIB. WSIB selected Guidewire for back-end transformation, and Oracle and Alphinat was front-end portal solution. However, WSIB decided to retrofit their existing portal with Guidewire and not to use Oracle/Alphinat solution midway in the project to reduce risk.	
Role Description	
Sadruddin led a portal assessment for WSIB that identified key issues and provided resolutions for the portal implementation. He socialized the assessment with Deloitte Canada and client leadership and established himself as a trusted advisor to the client management. As a follow-up to the assessment, Sadruddin led multiple re-planning exercises for the portal implementation that included identifying and finalizing scope for multiple releases, created processes and templates to identify remaining work and effort, estimated effort, planned resource breakdown, and acquired client buy-in. He also was the point of contact for the offshore team and established cadences on communication and status reporting. He guided the completion of the technical architecture of multiple eServices applications for both the current and the new state. Sadruddin led the delivery of the portal requirements deliverable that included creation of template, reviewed document, and presented it to the client stakeholders. During his tenure in the project, Sadruddin built a strong relationship with Deloitte US, Deloitte Canada, and Deloitte USI teams. He also established himself as a trusted advisor with the WSIB key stakeholders	

Massachusetts HIX project	***05/2013 – 08/2013***
Company Name	***State of Massachusetts***
Company Location	***Boston, MA***
Role on Project	***Notices Manager***
Software/Hardware Used	***XML, XSD, Windows server 2008, xPression, Virtual servers***
Project Description	
Commonwealth of Massachusetts is responsible for ensuring that a MA HIX/IES Exchange is operational by January 2014 and provides reusable components and artifacts to assist other states in meeting their goals to operate an Exchange. Deloitte worked with EOHHS, State of Massachusetts to implement HIX Information Technology components and consolidate the multiple eligibility systems in Massachusetts, leveraging where feasible existing components that are consumer-focused, cost-effective, reusable, and sustainable and that can be leveraged/reused by New England and other states to operate the MA HIX/IES System.	
Role Description	
Sadruddin led the notices and correspondence track for both HIX and Worker Portal. His team comprised of 6 practitioners and 1 sub-contractor. He also led the overall end-to-end technical design for notices and led a large CGI team (both on-site and offshore) to implement the solution. Sadruddin was responsible for day to day management and overall implementation of notices, and for working with MassHealth and CCA. His project management responsibilities included, preparing project scope and plan, gathering functional and technical requirements, guiding team with architecture and data modeling, managing implementation, solving conflicts, and maintaining customer relationship, and managing CGI offshore teams.	

Technology Strategy and Portal Implementation project	***10/2011 – 04/2013***
Company Name	***State of Louisiana: Governor's Office for Homeland Security and Emergency Preparedness (GOHSEP)***
Company Location	***Baton Rouge, LA***
Role on Project	***Deputy Project Manager***
Software/Hardware Used	***C#.NET, ASP.NET, JavaScript, HTML, CSS, XML, Transact SQL, Flex, Windows Server 2008 R2, IIS 7.0, LDAP, Microsoft SharePoint 2010 Enterprise Edition, .Net Framework 3.5, Microsoft Visual Studio 2010, SSRS, Flex, SQL Server 2008 R2, HP application servers***
Project Description	
The GOHSEP required a technology strategy that will include roadmap to attain their future vision. Once the technology strategy has been developed, GOHSEP required a portal implementation in SharePoint 2010 that will include general portal configuration, content migration from WSS 3.0 to SharePoint 2010, and time reporting application, along with reporting capabilities	
Role Description	
Sadruddin led GOHSEP's portal implementation initiative. At the initial stage of the project, he worked on developing a technology strategy for GOHSEP that included current state assessment, gap analysis, and a future roadmap. Afterwards, he led the project that had three threads – portal implementation, time reporting application, and reports. His team comprised of 5 practitioners and 7 sub-contractors. He was responsible for day to day management and overall project implementation, and for working with GOHSEP, Department of Public Services (DPS), and Deloitte executive management. His project management responsibilities included, preparing project scope and plan, gathering functional and technical requirements, helping team with architecture and data modeling, solving conflicts, and maintaining customer relationship. He also managed project financials and forecasting, deliverables, QRM process, and served as a primary assist in sales of new task orders.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***Drexel University***		
City, State	***Philadelphia, PA***		
Degree	***Masters of Science in Information Science***	***Completion Date***	***03/1998***

Institution Name	***Drexel University***		
City, State	***Philadelphia, PA***		
Degree	***Bachelor of Science in Chemical Engineering***	***Completion Date***	***08/1995***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 12/2014***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***IBM Websphere, Visual Age for Java, Powerbuilder, EJB, JavaScript, JSP, DB2, AIX, Unix, IBM MQ Series, Microsoft Office, Rational Rose***
Hardware	***AIX, IBM HTTP Server, Win 95/98/NT/2000/XP, MSDos, Unix, Active Directory, Single SignOn, VPN, VISIO, McAfee***
Software	***Mercury Interactive Load Runner, Quick Test Pro, CVS, Visual Café , SQL Developer, XML Spy, Apache Connection Pooling, IBM Websphere, Tivoli Enterprise, Databases (Oracle, DB2, PowerBuilder, Dbase, Access), Statistical Packages (SAS), Visual Source Safe, SharePoint, Guidewire, Alphinat, xPression***
Tools	***Microsoft Office, Visio, Lotus Notes, Webfocus Report, Hummingbird, Putty, DBSurfer, Exceed, Coreftp***
Databases	***Enterprise Java Beans (EJB), JDBC, Servlets/RMI, Vitria, Oracle 7.x, 8i,9,10, Oracle RDBMS, DB2, Essbase, Sybase System 10, Microsoft Access, IBM MQ Series***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Commonwealth of Massachusetts - Department of Revenue***
Contact Name	***Michele Cristello, Deputy Commissioner CSE***
Phone Number	***(617) 480-4377***
Fax Number	***N/A***
Email Address	***cristellom@dor.state.ma.us***

Client Reference 2

Company Name	***Commonwealth of Massachusetts - Department of Revenue***
Contact Name	***Joan Fahey, Project Initiative Director – CSE COMETS HD***
Phone Number	***(617) 775-9268***
Fax Number	***N/A***
Email Address	***faheyj@dor.state.ma.us***

Client Reference 3

Company Name	***State of Louisiana- Governor's Office for Homeland Security and Emergency Preparedness (GOHSEP)***
Contact Name	***Mark Riley, Deputy Director Disaster Recovery***
Phone Number	***(225) 925-7701***
Fax Number	***N/A***
Email Address	***Mark.riley@la.gov***

Nate Holler

PROPOSED STAFF RESUME FOR RFP 3462
A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Nathan (Nate) Holler***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Senior Consultant***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***5***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

With experience in project management, configuration management, enterprise content management, customer relationship management, information management, and risk management, Nate has effectively collaborated with project teams to achieve a common goal and become a trusted business advisor for the client. His organizational skills as well as leadership abilities have enabled him to take initiative with his role on a team and lead others as he gains experience in new areas. Nate has led client sessions for public sector clients during all phases of the Systems Development Life Cycle. He has led teams to gather and revise requirements, completed mock-up screenshots, and worked through design and development in child support enforcement projects including the Wisconsin Department of Children and Families Child Support Document Generation Replacement project and the PACSES project. He has managed initiatives through implementation to production and supported applications post implementation. In addition, Nate has managed risk assessment and the procurement provisioning of new technological devices for a large financial services corporation.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Delaware FOCUS project	***04/2016 – Present***
Company Name	***State of Delaware Department of Services for Children , Youth, and Their Families (DSCYF)***
Company Location	***Wilmington, DE***
Role on Project	***Scrum Master/Functional Lead***
Software/Hardware Used	***Salesforce.com, MS Excel, MS PowerPoint, MS Word***
Project Description	
Delaware's Department of Services for Children, Youth, and Their Families provides high-quality care for children and youth in ways that lead to improvements in their functioning and in the functioning of their families. The integrated children services solution will support services that are child centered, individualized, family focused, strength and community based, culturally respectful, appropriate in type and duration, and seamless within and across organizations. The Department employs approximately 1,200 staff at 31 locations, who serve over 8,000 children on any given day. Among the workforce are 52 Family Crisis Therapists (FCTs), who work in elementary schools throughout the state. Additionally, the Department provides licenses to nearly 2,200 daycare operations, which provide services for more than 49,000 children in Delaware.	
Role Description	
As a Scrum Master / Functional Lead on the Delaware FOCUS project, Nathan has effectively collaborated with the client to deliver working software during Sprints in a Hybrid Agile framework. He has effectively managed a team of onsite and offshore resources to understand requirements as well as design, build, test and deploy a solution. He is relied upon for effective demonstrations of the product for the client while driving his team to the desired results of the client. He has successfully demonstrated an understanding of a new product while managing a team to configure the product to best meet the needs of all Divisions involved in building the case management solution.	

Wisconsin Child Support Document Generation Replacement project	***10/2013 – 03/2016***
Company Name	***Wisconsin Department of Children and Families***
Company Location	***Madison, WI***
Role on Project	***Business Analyst -> Business Lead -> Functional Lead***
Software/Hardware Used	***Thunderhead, IBM BPM, IBM FileNet, MS Excel, MS PowerPoint, MS Word***
Project Description	
The Wisconsin Child Support Program helps parents obtain court orders and allocate financial and medical support for their children. The goal of the Wisconsin Child Support Document Generation Replacement Project is to modernize the Child Support (KIDS) document generation subsystem. This project consists of installation, integration and implementation of a new document generation subsystem replacement using commercial off the shelf (COTS) software purchased by DCF.	
Role Description	
As a business analyst, Nathan worked with the team to effectively complete the planning phase of the project. Nathan gained experience in enterprise content management and document generation as the project progressed through requirements and design phases. He facilitated requirements sessions for the client in order to gather business requirements and system requirements for the document generation project. In addition, he completed planning phase and requirements phase documentation. He	

Wisconsin Child Support Document Generation Replacement project	***10/2013 – 03/2016***

collaborated with stakeholders throughout the planning phase, requirements phase and design phase to build a model for an effective document generation subsystem to address business needs.

As the Business Lead, Nathan worked to lead the team to effectively gather and revise requirements for the project. His team successfully collaborated with the client to complete major deliverables on time during the requirements phase. He collaborated with stakeholders to become the trusted business advisor for the client. The client identified Nathan as a key resource to lead the gathering and revising of business requirements as well as the design of the document generation subsystem being built to address functional and technical requirements.

As the Deloitte Lead, Nathan worked to successfully re-plan two major subprojects of the Document Generation project. He effectively collaborated with the client as a trusted business advisor. He demonstrated an understanding of the project as well as child support as he managed and led the resources involved in the sub-projects of the child support initiative through design of the document generation subsystem.

Pennsylvania PACSES project	***07/2012 – 09/2013***
Company Name	***Commonwealth of Pennsylvania***
Company Location	***Harrisburg, PA***
Role on Project	***Open Systems Analyst***
Software/Hardware Used	***Mainframe, Open Systems Applications (.NET, Oracle), MS Access, MS Excel, MS PowerPoint, MS Word***

Project Description

The Pennsylvania Child Support System (PACSES) serves over 4,000 users, supports 67 counties, and consists of over 600,000 cases. The Deloitte team has approximately 75 people and supported the project across all phases, from system implementation to deployment to certification, to the current maintenance and operations phase. As part of the current contract Deloitte is executing the first phase of modernizing the complete legacy PACSES mainframe application, transitioning the Case Intake, Case Management, Locate, and Intergovernmental business functions from the mainframe to the open systems platform.

Role Description

As an analyst on the Open Systems team of PACSES, Nathan gained experience in all phases of the SDLC. He led and facilitated client sessions in order to gather system requirements as well as design and create General System Design (GSD) and Detailed System Design (DSD) deliverables. He was responsible for the completion of the deliverables for the rest of phases of the SDLC. In addition, Nate managed the development team and configuration management during development, testing, and implementation phases for maintenance releases as well as large project initiatives. Nathan was engaged in work orders including the analysis of applications to improve performance and the implementation of system enhancements to provide new functionality to public users. He successfully implemented releases into production.

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***The Pennsylvania State University***		
City, State	***University Park, PA***		
Degree	***Bachelor of Science, Information Sciences and Technology***	***Completion Date***	***05/2012***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***INFOSEC Professionals Certification, Date Completed: 05/2012***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Opens Systems, Mainframe***
Hardware	***Windows Server 2008 R2, Windows Server 2012 R2, Windows 10***
Software	***NET, Java***
Tools	***Microsoft Suite, Thunderhead, HP Document Generation Suite, Adobe LiveCycle, Salesforce.com, IBM BPM, IBM FileNet***
Databases	***Microsoft SQL Server, Microsoft Access, Informatica,Oracle***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Commonwealth of Pennsylvania, Department of Human Services (DHS), Bureau of Child Support Enforcement (BCSE)***
Contact Name	***Joyce Match, PACSES Application Manager***
Phone Number	***(717) 705-5104***
Fax Number	***(717) 705-5197***
Email Address	***joyceMatch@pacses.com***

Client Reference 2

Company Name	***State of Delaware, Department of Services for Children, Youth and Their Families***
Contact Name	***Laura Miles***
Phone Number	***302-633-2588***
Fax Number	***n/a***
Email Address	***Laura.Miles@state.de.us***

Client Reference 3

Company Name	***Wisconsin Department of Children and Families***
Contact Name	***Troy Meyer, Child Support Trainer/Former Operations Section Chief***
Phone Number	***608-455-6775***
Fax Number	***n/a***
Email Address	***mailto:Troy.Meyer@wisconsin.gov***

Bill Strate

PROPOSED STAFF RESUME FOR RFP 3462

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Deloitte Consulting LLP***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***William (Bill) Strate***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Solution Manager***	
# of Years in Classification:	***3***	**# of Years with Firm:**	***9***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Bill has more than 30 years of child support experience in a variety of capacities including as an attorney and judge, and serving as state child support director of North Dakota from 1994-1998. Experience includes leadership of full service and specialized services child support projects, technology assessments, system integration and renewal, business process redesign, service delivery model assessment projects in Massachusetts, Minnesota, and Indiana. Led As-Is and To-Be business process design efforts, and planned and conducted JAD sessions. Conducted and facilitated strategic vision sessions, JAD sessions, technology roadmap session and training sessions. Management and preparation of large-scale deliverables including technology roadmaps, child support system requirements, business process redesign recommendations and business organization redesign. As Requirements Manager, validated requirements against the Automated Systems for Child Support Enforcement: A Guide for States 2009. As a Product Owner, he provides leadership of the design, development and implementation of new technology solutions for the child support program.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Deloitte Cyber Security project	***06/2017 – Present***
Company Name	***Deloitte Internal Project***
Company Location	***Hermitage, TN***
Role on Project	***Project Manager***
Software/Hardware Used	***Project management tools***
Project Description	
Internal technology projects and initiatives	
Role Description	
Project manager for 30+ internal IT project leading day to day activities for the team.	

Deloitte Child Support Practice project	***04/2016 – 05/2017***
Company Name	***Deloitte Consulting LLP***
Company Location	***Camp Hill, PA***
Role on Project	***Product Owner – Support Beacon***
Software/Hardware Used	***Proprietary software tool***
Project Description	
This project involves the development of a new tool for the child support program, Support Beacon, which combines performance management and predictive analytics to enhance the capabilities of existing and new child support enforcement systems.	
Role Description	
As a Product Owner of Support Beacon, a Deloitte proprietary CSE tool, his leadership is driving the design, development and implementation of this new technology solution for the child support program. Tasks include analyzing child support business processes and using predictive analytics to better sort and provide actionable cases to the case managers.	

Indiana INvest project	***07/2009 – 11/2015***
Company Name	***State of Indiana, Department of Child Services, Bureau of Child Support Enforcement***
Company Location	***Indianapolis, IN***
Role on Project	***Various roles including Project Manager, Project Thread Lead, Requirements Manager, and Child Support SME***
Software/Hardware Used	***Microsoft Suite, IndustryPrint, IBM Rational Tool Suite, SharePoint***
Project Description	
The Deloitte team of approximately 20 members supported a variety of initiatives with the State of Indiana, including a business process analysis (BPA) of the States CSE policies, processes, organization, and technology solutions. Deloitte conducted over 70 sessions covering 50 State and County business processes resulting in over 100 'To Be' recommendations, which were translated into 29 strategic recommendations and ultimately 25 BPA projects. Following the BPA effort, Deloitte gathered system requirements across all child support system functions through JAD sessions and developing business	

Indiana INvest project	***07/2009 – 11/2015***
process models and use cases for the new Indiana system, Invest, which handles 273,00 cases. Deloitte also assisted with conducting the system Feasibility Study.	
Role Description	
Bill was both a project manager and thread lead for the Deloitte engagement team which performed a Business Process Analysis across multiple threads: Project Management, Current and Future BPR assessment, Gap analysis. Bill led over 100 JAD sessions over 10 functional areas over a period of 3 years. ***As Project Manager, Bill managed the project schedule, activities, scope, budget, risk, and staffing activities.*** ***As Project Thread Lead, Bill led the 'As Is' and 'To Be' assessment sessions, oversaw the deliverable preparation, client presentations, data gathering and analysis and preparation of the cost/benefit analysis and BPR implementation plan and roadmap. He also led the requirements gathering effort for INvest by facilitating over 100 JAD sessions which developed over 15,000 requirements for 83 Business Process Models, 83 Use Cases and 283 Services across the spectrum of child support enforcement from case initiation, case management, establishment, locate, financials and enforcement.*** ***In addition, he developed and reviewed key training documentation for the End Users prior to implementation of the applications and then led several key training sessions.*** ***Bill also served in the role of Requirements Manager to prepare the INvest requirements for inclusion in the RFS for the development and implementation of INvest.***	

Business Process Redesign Analysis of Child Support Program Policy and Systems project	***06/2008 – 07/2009***
Company Name	***Minnesota Department of Human Services, Child Support Enforcement Division***
Company Location	***St. Paul MN***
Role on Project	***Business Process Lead***
Software/Hardware Used	***Microsoft Suite, IndustryPrint***
Project Description	
The project re-engineered the Child Support Program's business processes and developed an implementation roadmap which included policy, process, procedure and system recommendations. Conducted an assessment of existing 'As Is' program policies and procedures. Conducted work sessions and leading practices research to identify 'To Be' program policies and procedures. Performed an assessment of automated processes and a Gap Analysis to identify opportunities for improvement. Developed CBA's and ROI's on the recommended BPR projects. Developed an implementation plan as an integral part of the Final Report and conducted a benchmark study of six other states.	
Role Description	
As Business Process Lead, Bill led service delivery model assessment sessions with client and county staff, facilitated strategic vision sessions with client, managed and developed the assessment deliverable (key project deliverable), managed benchmark study of other states. He led the majority of the work sessions to discuss the 'As Is' and 'To Be' states for the future business processes, and gap analysis to define the gaps between the 'As Is' and 'To Be' states. Bill also oversaw the deliverable preparation, client presentations, data gathering and analysis and preparation of the CBA and BPR implementation plan and roadmap.	

Child Support Enforcement System Migration Technology Roadmap project	***04/2008 – 06/2008***
Company Name	***Massachusetts Department of Revenue, Child Support Enforcement Division***
Company Location	***Chelsea, MA***

Child Support Enforcement System Migration Technology Roadmap project	***04/2008 – 06/2008***
Role on Project	***Business Process Lead***
Software/Hardware Used	***Microsoft Suite, IndustryPrint***
Project Description	
The project activities included documenting and assessing the 'As Is' and proposing a 'To Be' for child support business processes and technology and developing a technology roadmap to achieve the vision of the 'To Be' state	
Role Description	
As Business Process Lead, Bill conducted work sessions to review and assess the 'As Is' and 'To Be' processes and developed the roadmap for technology changes required to implement the To Be processes and prepare for system renewal. He led strategic visioning sessions for the client, led technology assessment sessions, deliverable preparation, and presentations to client.	

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Institution Name	***North Dakota State University***		
City, State	***Fargo, North Dakota***		
Degree	***B.S., Political Science***	***Completion Date***	***05/1979***

Institution Name	***University of North Dakota***		
City, State	***Grand Forks, North Dakota***		
Degree	***Juris Doctor***	***Completion Date***	***05/1982***

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

- ***PMI Certified Project Management Professional (PMP), Date Completed: 08/2011***

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments	***Mainframe applications in a variety of states – ND, KS, IA, MA, MN, IN***
Hardware	***IVR's, call recording hardware***
Software	***Microsoft tool suite, IndustryPrint***
Tools	***Proprietary case management tools***
Databases	***Access***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Client Reference 1

Company Name	***Indiana Department of Child Services, Child Support Bureau***
Contact Name	***Cynthia Longest, Deputy Director***
Phone Number	***(317) 233-4482***
Fax Number	***n/a***
Email Address	***cynthia.longest@dcs.IN.gov***

Client Reference 2

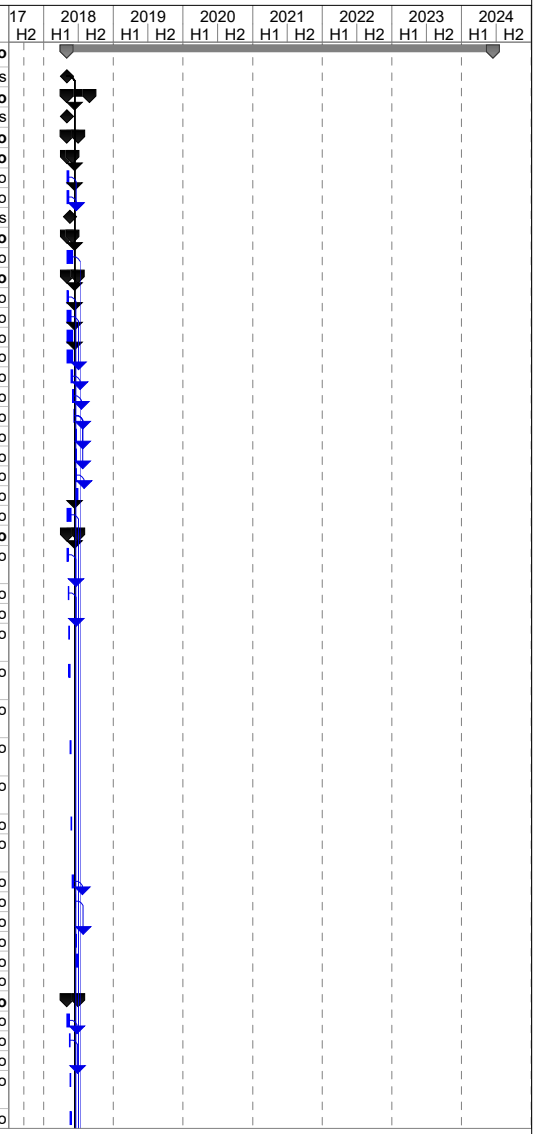
Company Name	***Kansas Department of Children and Families***
Contact Name	***Trisha Thomas, Child Support Director***
Phone Number	***(785) 296-4188***
Fax Number	***n/a***
Email Address	***trisha.thomas@dcf.ks.gov***

Client Reference 3

Company Name	***North Dakota Department of Human Services, Child Support Agency***
Contact Name	***James Fleming, Child Support Director***
Phone Number	***(701) 328-3582***
Fax Number	***n/a***
Email Address	***jfleming@nd.gov***

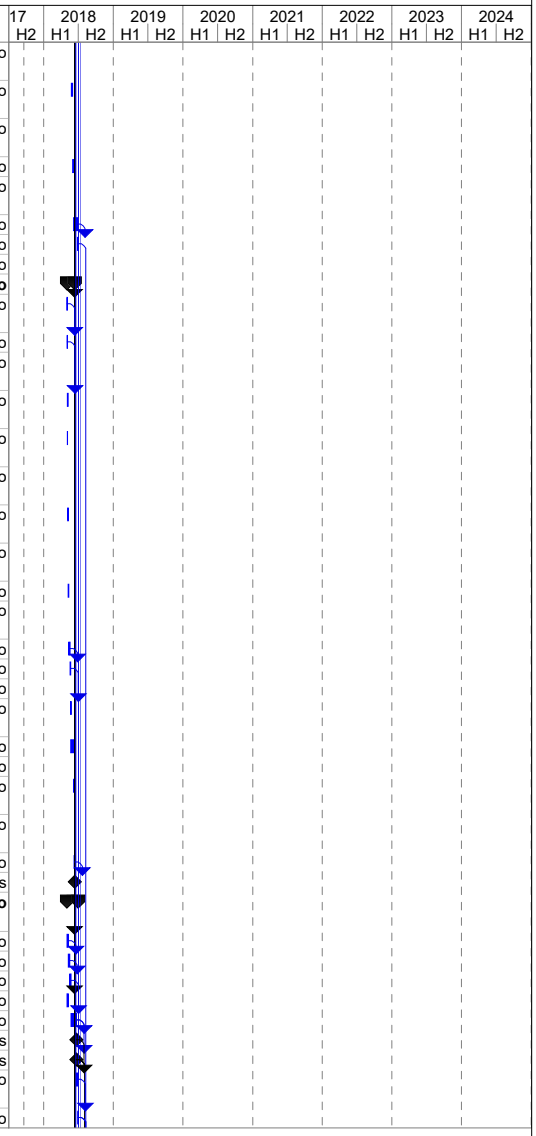
Response to RFP 3462
Child Support Enforcement System Replacement
Design, Development, and Implementation Services

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
0	**0**			**Preliminary Project Schedule**	**1530 days**	**Tue 5/1/18**	**Thu 6/13/24**	**No**
1	1	1.		1 Project Start	1 day	Tue 5/1/18	Tue 5/1/18	Yes
2	**2**	**1.2.1.4**		**2 Inception**	**83 days**	**Tue 5/1/18**	**Mon 8/27/18**	**No**
3	3	**1.2.1.4**		2.1 Inception Phase Start	0 days	Tue 5/1/18	Tue 5/1/18	Yes
4	**4**	**1.2.1.4**		**2.2 Initiate**	**43 days**	**Tue 5/1/18**	**Fri 6/29/18**	**No**
5	**5**	**4.3**		**2.2.1 Project DD&I Kickoff Meeting**	**20 days**	**Wed 5/2/18**	**Wed 5/30/18**	**No**
6	6	4.3		2.2.1.1 Develop DD&I Kickoff Materials	7 days	Wed 5/2/18	Thu 5/10/18	No
7	7	4.3		2.2.1.2 Schedule DD&I Kickoff Meeting	7 days	Wed 5/2/18	Thu 5/10/18	No
8	8	4.3		2.2.1.3 Kickoff DD&I Project	0 days	Thu 5/17/18	Thu 5/17/18	Yes
9	**9**	**4.27.2.6**		**2.2.1.4 Requirements Validation Sessions**	**20 days**	**Wed 5/2/18**	**Wed 5/30/18**	**No**
10	10	4.27.2.6		2.2.1.4.1 Schedule Staff and SMEs for Requirements Validation Sessions	20 days	Wed 5/2/18	Wed 5/30/18	No
11	**11**	**2.5**		**2.2.2 Source Code**	**40 days**	**Wed 5/2/18**	**Wed 6/27/18**	**No**
12	12	2.5		2.2.2.1 Acquire Source Code	5 days	Wed 5/2/18	Tue 5/8/18	No
13	13	2.5		2.2.2.2 Load Source Code	15 days	Wed 5/2/18	Tue 5/22/18	No
14	14	2.5		2.2.2.3 Acquire Documentation	20 days	Wed 5/2/18	Wed 5/30/18	No
15	15	2.5		2.2.2.4 Acquire Other CA Artifacts	20 days	Wed 5/2/18	Wed 5/30/18	No
16	16	2.5		2.2.2.5 Install software on client and server workstations	5 days	Wed 5/23/18	Wed 5/30/18	No
17	17	2.5		2.2.2.6 Define users, security roles, asset types, attributes	5 days	Thu 5/31/18	Wed 6/6/18	No
18	18	2.5		2.2.2.7 Validate access from client workstations	5 days	Thu 6/7/18	Wed 6/13/18	No
19	19	2.5		2.2.2.8 Implement backup and recovery procedures	5 days	Thu 6/14/18	Wed 6/20/18	No
20	20	2.5		2.2.2.9 Refine load procedures	5 days	Thu 6/14/18	Wed 6/20/18	No
21	21	2.5		2.2.2.10 Validate assets in system	5 days	Thu 6/14/18	Wed 6/20/18	No
22	22	2.5		2.2.2.11 Train-the-trainer on use of software	5 days	Thu 6/21/18	Wed 6/27/18	No
23	23	4.28.2.5		2.2.3 Set Up, Deliver and Deploy ALM Environment	15 days	Wed 5/2/18	Tue 5/22/18	No
24	**24**	**4.14**	**4.14.3.1**	**2.2.4 DELIVERABLE: Ease of Use Management Plan (DED)**	**42 days**	**Wed 5/2/18**	**Fri 6/29/18**	**No**
25	25	4.14.1	4.14.3.1	2.2.4.1 Develop Deliverable Expectation Document for Ease of Use Management Plan	5 days	Wed 5/2/18	Tue 5/8/18	No
26	26	4.14.2	4.14.3.1	2.2.4.2 QA Deliverable Expectation Document	2 days	Wed 5/9/18	Thu 5/10/18	No
27	27	4.38.2	4.14.3.1	2.2.4.3 Submit Deliverable Expectation Document for Ease of Use Manageme	0 days	Thu 5/10/18	Thu 5/10/18	No
28	28	4.38.1	4.14.3.1	2.2.4.4 Conduct Walk-through for Deliverable Expectation Document for Ease of Use Management Plan	2 days	Fri 5/11/18	Mon 5/14/18	No
29	29	4.14.3	4.14.3.1	2.2.4.5 Review Deliverable Expectation Document for Ease of Use Management Plan	5 days	Fri 5/11/18	Thu 5/17/18	No
30	30	4.14.3	4.14.3.1	2.2.4.6 Provide Feedback on Deliverable Expectation Document for Ease of Use Management Plan	0 days	Thu 5/17/18	Thu 5/17/18	No
31	31	4.14.2	4.14.3.1	2.2.4.7 Incorporate Feedback on Deliverable Expectation Document for Ease of Use Management Plan	3 days	Fri 5/18/18	Tue 5/22/18	No
32	32	4.38.2	4.14.3.1	2.2.4.8 Submit Final Version of Deliverable Expectation Document for Ease of Use Management Plan	0 days	Tue 5/22/18	Tue 5/22/18	No
33	33	4.14.3	4.14.3.1	2.2.4.9 Review and Verify Feedback	3 days	Wed 5/23/18	Fri 5/25/18	No
34	34	4.14.3	4.14.3.1	2.2.4.10 Approve Deliverable Expectation Document for Ease of Use Management Plan	0 days	Fri 5/25/18	Fri 5/25/18	No
35	35	4.14.1	4.14.3.1	2.2.4.11 Develop Ease of Use Management Plan	10 days	Tue 5/29/18	Mon 6/11/18	No
36	36	4.14.2	4.14.3.1	2.2.4.12 QA Deliverable	4 days	Tue 6/12/18	Fri 6/15/18	No
37	37	4.38.2	4.14.3.1	2.2.4.13 Submit Ease of Use Management Plan	0 days	Fri 6/15/18	Fri 6/15/18	No
38	38	4.38.1	4.14.3.1	2.2.4.14 Conduct Walk-through for Ease of Use Management Plan	2 days	Mon 6/18/18	Tue 6/19/18	No
39	39	4.14.3	4.14.3.1	2.2.4.15 Review Ease of Use Management Plan	10 days	Mon 6/18/18	Fri 6/29/18	No
40	40	4.14.3	4.14.3.1	2.2.4.16 Provide Feedback on Ease of Use Management Plan	0 days	Fri 6/29/18	Fri 6/29/18	No
41	**41**	**4.16**	**4.16.3.1**	**2.2.5 DELIVERABLE: Data Governance Plan (DED)**	**43 days**	**Tue 5/1/18**	**Fri 6/29/18**	**No**
42	42	4.16.1	4.16.3.1	2.2.5.1 Develop Deliverable Expectation Document for Data Governance Plan	10 days	Tue 5/1/18	Mon 5/14/18	No
43	43	4.16.2	4.16.3.1	2.2.5.2 QA Deliverable Expectation Document	3 days	Tue 5/15/18	Thu 5/17/18	No
44	44	4.38.2	4.16.3.1	2.2.5.3 Submit Deliverable Expectation Document for Data Governance Plan	0 days	Thu 5/17/18	Thu 5/17/18	No
45	45	4.38.1	4.16.3.1	2.2.5.4 Conduct Walk-through for Deliverable Expectation Document for Data Governance Plan	2 days	Fri 5/18/18	Mon 5/21/18	No
46	46	4.16.3	4.16.3.1	2.2.5.5 Review Deliverable Expectation Document for Data Governance Plan	5 days	Fri 5/18/18	Thu 5/24/18	No



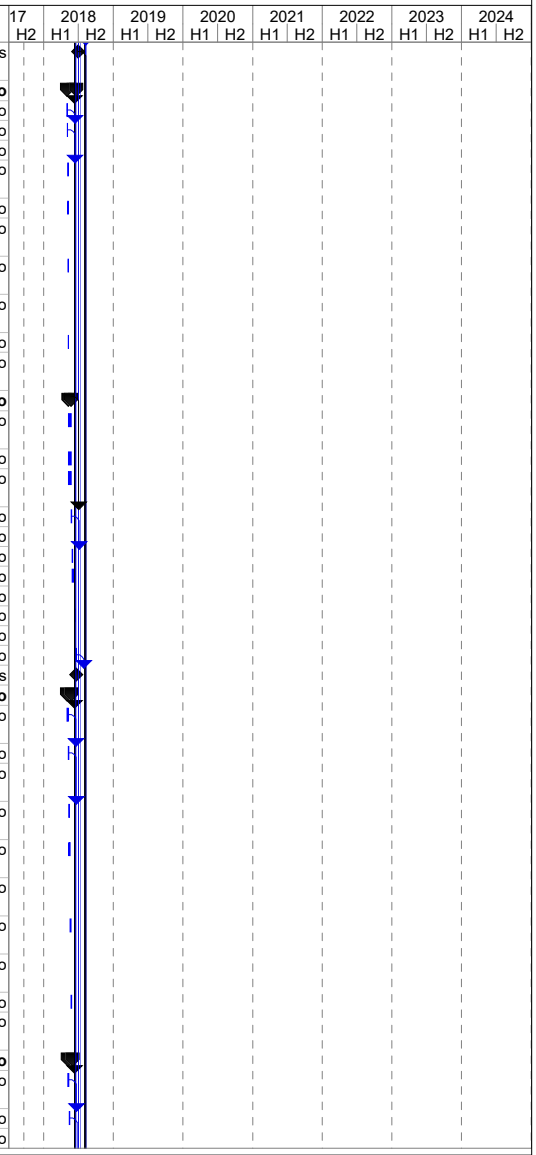
Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Critical	
Milestone		Inactive Task		Manual Summary Rollup		Critical Split	
Summary		Inactive Milestone		Manual Summary		Progress	
Project Summary		Inactive Summary		Start-only		Deadline	

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
47	47	4.16.3	4.16.3.1	2.2.5.6 Provide Feedback on Deliverable Expectation Document for Data Governance Plan	0 days	Thu 5/24/18	Thu 5/24/18	No
48	48	4.16.2	4.16.3.1	2.2.5.7 Incorporate Feedback on Deliverable Expectation Document for Data Governance Plan	3 days	Fri 5/25/18	Wed 5/30/18	No
49	49	4.38.2	4.16.3.1	2.2.5.8 Submit Final Version of Deliverable Expectation Document for Data Governance Plan	0 days	Wed 5/30/18	Wed 5/30/18	No
50	50	4.16.3	4.16.3.1	2.2.5.9 Review and Verify Feedback	3 days	Thu 5/31/18	Mon 6/4/18	No
51	51	4.16.3	4.16.3.1	2.2.5.10 Approve Deliverable Expectation Document for Data Governance Plan	0 days	Mon 6/4/18	Mon 6/4/18	No
52	52	4.16.1	4.16.3.1	2.2.5.11 Develop Data Governance Plan	15 days	Tue 6/5/18	Mon 6/25/18	No
53	53	4.16.2	4.16.3.1	2.2.5.12 QA Deliverable	4 days	Tue 6/26/18	Fri 6/29/18	No
54	54	4.38.2	4.16.3.1	2.2.5.13 Submit Data Governance Plan	0 days	Fri 6/29/18	Fri 6/29/18	No
55	**55**	**4.3**	**4.3.3.1**	**2.2.6 DELIVERABLE: Project Initiation and Management Deliverable**	**28 days**	**Wed 5/2/18**	**Mon 6/11/18**	**No**
56	56	4.3.1	4.3.3.1	2.2.6.1 Develop Deliverable Expectation Document for Project Initiation and Management Deliverable	1 day	Wed 5/2/18	Wed 5/2/18	No
57	57	4.3.2	4.3.3.1	2.2.6.2 QA Deliverable Expectation Document	1 day	Thu 5/3/18	Thu 5/3/18	No
58	58	4.38.2	4.3.3.1	2.2.6.3 Submit Deliverable Expectation Document for Project Initiation and Management Deliverable	0 days	Thu 5/3/18	Thu 5/3/18	No
59	59	4.38.1	4.3.3.1	2.2.6.4 Conduct Walkthrough of Deliverable Expectation Document for Project Initiation and Management Deliverable	2 days	Fri 5/4/18	Mon 5/7/18	No
60	60	4.3.3	4.3.3.1	2.2.6.5 Review Deliverable Expectation Document for Project Initiation and Management Deliverable	1 day	Fri 5/4/18	Fri 5/4/18	No
61	61	4.3.3	4.3.3.1	2.2.6.6 Provide Feedback on Deliverable Expectation Document for Project Initiation and Management Deliverable	0 days	Fri 5/4/18	Fri 5/4/18	No
62	62	4.3.2	4.3.3.1	2.2.6.7 Incorporate Feedback on Deliverable Expectation Document for Project Initiation and Management Deliverable	1 day	Mon 5/7/18	Mon 5/7/18	No
63	63	4.38.2	4.3.3.1	2.2.6.8 Submit Final Version of Deliverable Expectation Document for Project Initiation and Management Deliverable	0 days	Mon 5/7/18	Mon 5/7/18	No
64	64	4.3.3	4.3.3.1	2.2.6.9 Review and Verify Feedback	3 days	Tue 5/8/18	Thu 5/10/18	No
65	65	4.3.3	4.3.3.1	2.2.6.10 Approve Deliverable Expectation Document for Project Initiation and Management Deliverable	0 days	Thu 5/10/18	Thu 5/10/18	No
66	66	4.3.1	4.3.3.1	2.2.6.11 Develop Project Initiation and Management Deliverable	5 days	Fri 5/11/18	Thu 5/17/18	No
67	67	4.3.2	4.3.3.1	2.2.6.12 QA Deliverable	2 days	Fri 5/18/18	Mon 5/21/18	No
68	68	4.38.2	4.3.3.1	2.2.6.13 Submit Project Initiation and Management Deliverable	0 days	Mon 5/21/18	Mon 5/21/18	No
69	69	4.38.1	4.3.3.1	2.2.6.14 Conduct Walkthrough of Project Initiation and Management Deliverable	2 days	Tue 5/22/18	Wed 5/23/18	No
70	70	4.3.3	4.3.3.1	2.2.6.15 Review Project Initiation and Management Deliverable	10 days	Tue 5/22/18	Tue 6/5/18	No
71	71	4.3.3	4.3.3.1	2.2.6.16 Provide Feedback on Project Initiation and Management Deliverable	0 days	Tue 6/5/18	Tue 6/5/18	No
72	72	4.3.3	4.3.3.1	2.2.6.17 Incorporate Feedback on Project Initiation and Management Deliverable	2 days	Wed 6/6/18	Thu 6/7/18	No
73	73	4.38.2	4.3.3.1	2.2.6.18 Submit Final Version of Project Initiation and Management Deliverable	0 days	Thu 6/7/18	Thu 6/7/18	No
74	74	4.3.3	4.3.3.1	2.2.6.19 Review and Verify Feedback	2 days	Fri 6/8/18	Mon 6/11/18	No
75	75	4.3.1	4.3.3.1	2.2.6.20 Approve Project Initiation and Management Deliverable	0 days	Mon 6/11/18	Mon 6/11/18	Yes
76	**76**	**4.4**	**4.4.3.1**	**2.2.7 DELIVERABLE: Project Site Establishment, Maintenance and Management**	**42 days**	**Wed 5/2/18**	**Fri 6/29/18**	**No**
77	77	4.4	4.4.3.1	2.2.7.1 Identify Suitable Project Site	5 days	Wed 5/2/18	Tue 5/8/18	No
78	78	4.4	4.4.3.1	2.2.7.2 Verify the Suitability of the Project Site	5 days	Wed 5/9/18	Tue 5/15/18	No
79	79	4.4	4.4.3.1	2.2.7.3 Execute the Lease	5 days	Wed 5/16/18	Tue 5/22/18	No
80	80	4.4	4.4.3.1	2.2.7.4 Identify and Conditionally Secure a Suitable Alternative Site	5 days	Wed 5/2/18	Tue 5/8/18	No
81	81	4.4	4.4.3.1	2.2.7.5 Build Out Project Site	20 days	Wed 5/23/18	Wed 6/20/18	No
82	82	4.4	4.4.3.1	2.2.7.6 Obtain Certificate(s) of Occupancy	0 days	Wed 6/20/18	Wed 6/20/18	Yes
83	83	4.4	4.4.3.1	2.2.7.7 Begin Operations	0 days	Wed 6/20/18	Wed 6/20/18	Yes
84	84	4.4.1	4.4.3.1	2.2.7.8 Develop Project Site Establishment, Maintenance, and Management Deliverable	5 days	Thu 6/21/18	Wed 6/27/18	No
85	85	4.4.2	4.4.3.1	2.2.7.9 QA Deliverable	2 days	Thu 6/28/18	Fri 6/29/18	No



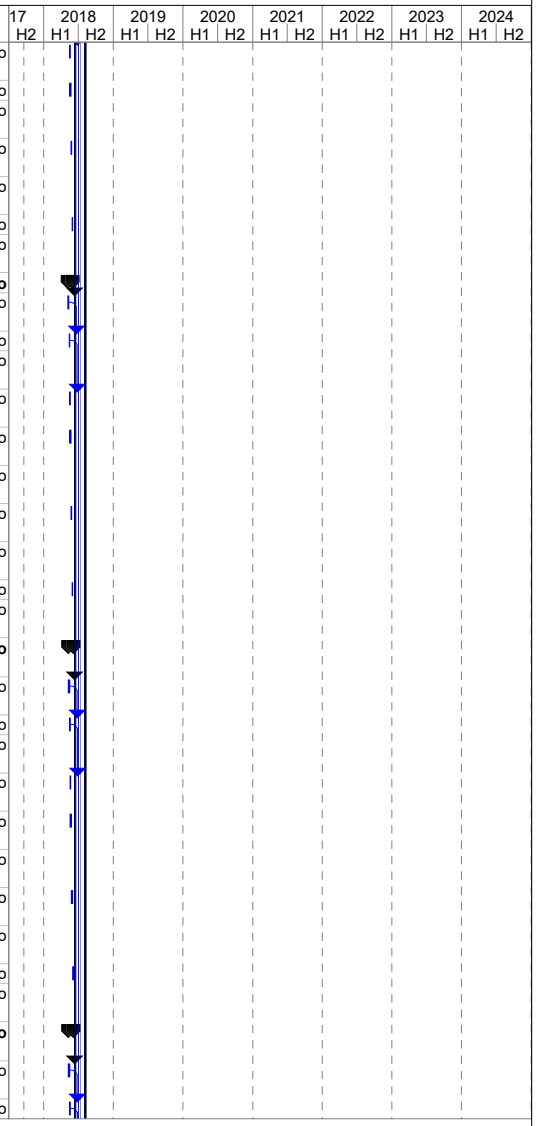
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
86	86	4.38.2	4.4.3.1	2.2.7.10 Submit Project Site Establishment, Maintenance, and Management Deliverable	0 days	Fri 6/29/18	Fri 6/29/18	Yes
87	**87**	**4.5**	**4.5.3.1**	**2.2.8 DELIVERABLE: Project Schedule**	**34 days**	**Wed 5/2/18**	**Tue 6/19/18**	**No**
88	88	4.5.1	4.5.3.1	2.2.8.1 Develop Deliverable Expectation Document for Initial Project Schedule	2 days	Wed 5/2/18	Thu 5/3/18	No
89	89	4.5.2	4.5.3.1	2.2.8.2 QA Deliverable Expectation Document	1 day	Fri 5/4/18	Fri 5/4/18	No
90	90	4.38.2	4.5.3.1	2.2.8.3 Submit Deliverable Expectation Document for Initial Project Schedule	0 days	Fri 5/4/18	Fri 5/4/18	No
91	91	4.38.1	4.5.3.1	2.2.8.4 Conduct Walk-through for Deliverable Expectation Document for Initial Project Schedule	2 days	Mon 5/7/18	Tue 5/8/18	No
92	92	4.5.3	4.5.3.1	2.2.8.5 Review Deliverable Expectation Document for Initial Project Schedule	1 day	Mon 5/7/18	Mon 5/7/18	No
93	93	4.5.3	4.5.3.1	2.2.8.6 Provide Feedback on Deliverable Expectation Document for Initial Project Schedule	0 days	Mon 5/7/18	Mon 5/7/18	No
94	94	4.5.2	4.5.3.1	2.2.8.7 Incorporate Feedback on Deliverable Expectation Document for Initial Project Schedule	1 day	Tue 5/8/18	Tue 5/8/18	No
95	95	4.38.2	4.5.3.1	2.2.8.8 Submit Final Version of Deliverable Expectation Document for Initial Project Schedule	0 days	Tue 5/8/18	Tue 5/8/18	No
96	96	4.5.3	4.5.3.1	2.2.8.9 Review and Verify Feedback	1 day	Wed 5/9/18	Wed 5/9/18	No
97	97	4.5.3	4.5.3.1	2.2.8.10 Approve Deliverable Expectation Document for Initial Project Schedule	0 days	Wed 5/9/18	Wed 5/9/18	No
98	**98**	**4.5.1**	**4.5.3.1**	**2.2.8.11 Develop Initial Project Schedule**	**10 days**	**Thu 5/10/18**	**Wed 5/23/18**	**No**
99	99	4.5.2	4.5.3.1	2.2.8.11.1 Meet with Program's Project Management Team to Discuss Schedule	10 days	Thu 5/10/18	Wed 5/23/18	No
100	100	4.5.2	4.5.3.1	2.2.8.11.2 Meet with PMO Contractor to Discuss Schedule	10 days	Thu 5/10/18	Wed 5/23/18	No
101	101	4.5.2	4.5.3.1	2.2.8.11.3 Meet with Any Other Designated Contractors to Develop Schedule	10 days	Thu 5/10/18	Wed 5/23/18	No
102	102	4.5.2	4.5.3.1	2.2.8.12 QA Deliverable	2 days	Thu 5/24/18	Fri 5/25/18	No
103	103	4.38.2	4.5.3.1	2.2.8.13 Submit Initial Project Schedule	0 days	Fri 5/25/18	Fri 5/25/18	No
104	104	4.38.1	4.5.3.1	2.2.8.14 Conduct Walk-through for Initial Project Schedule	2 days	Tue 5/29/18	Wed 5/30/18	No
105	105	4.5.3	4.5.3.1	2.2.8.15 Review Initial Project Schedule	10 days	Tue 5/29/18	Mon 6/11/18	No
106	106	4.5.3	4.5.3.1	2.2.8.16 Provide Feedback on Initial Project Schedule	0 days	Mon 6/11/18	Mon 6/11/18	No
107	107	4.5.3	4.5.3.1	2.2.8.17 Incorporate Feedback on Initial Project Schedule	1 day	Tue 6/12/18	Tue 6/12/18	No
108	108	4.38.2	4.5.3.1	2.2.8.18 Submit Final Version of Initial Project Schedule	0 days	Tue 6/12/18	Tue 6/12/18	No
109	109	4.5.3	4.5.3.1	2.2.8.19 Review and Verify Feedback on Initial Project Schedule	5 days	Wed 6/13/18	Tue 6/19/18	No
110	110	4.5.1	4.5.3.1	2.2.8.20 Approve Initial Project Schedule	0 days	Tue 6/19/18	Tue 6/19/18	Yes
111	**111**	**4.27**	**4.27.3.2**	**2.2.9 DELIVERABLE: Conduct JAD Sessions Deliverable (DED)**	**18 days**	**Wed 5/2/18**	**Fri 5/25/18**	**No**
112	112	4.27.1	4.27.3.2	2.2.9.1 Develop Deliverable Expectation Document for Conduct JAD Sessions Deliverable	5 days	Wed 5/2/18	Tue 5/8/18	No
113	113	4.27.2	4.27.3.2	2.2.9.2 QA Deliverable Expectation Document	2 days	Wed 5/9/18	Thu 5/10/18	No
114	114	4.38.2	4.27.3.2	2.2.9.3 Submit Deliverable Expectation Document for Conduct JAD Sessions Deliverable	0 days	Thu 5/10/18	Thu 5/10/18	No
115	115	4.38.1	4.27.3.2	2.2.9.4 Conduct Walk-through for Deliverable Expectation Document for Conduct JAD Sessions Deliverable	2 days	Fri 5/11/18	Mon 5/14/18	No
116	116	4.27.3	4.27.3.2	2.2.9.5 Review Deliverable Expectation Document for Conduct JAD Sessions Deliverable	5 days	Fri 5/11/18	Thu 5/17/18	No
117	117	4.27.3	4.27.3.2	2.2.9.6 Provide Feedback on Deliverable Expectation Document for Conduct JAD Sessions Deliverable	0 days	Thu 5/17/18	Thu 5/17/18	No
118	118	4.27.2	4.27.3.2	2.2.9.7 Incorporate Feedback on Deliverable Expectation Document for Conduct JAD Sessions Deliverable	3 days	Fri 5/18/18	Tue 5/22/18	No
119	119	4.38.2	4.27.3.2	2.2.9.8 Submit Final Version of Deliverable Expectation Document for Conduct JAD Sessions Deliverable	0 days	Tue 5/22/18	Tue 5/22/18	No
120	120	4.27.3	4.27.3.2	2.2.9.9 Review and Verify Feedback	3 days	Wed 5/23/18	Fri 5/25/18	No
121	121	4.27.3	4.27.3.2	2.2.9.10 Approve Deliverable Expectation Document for Conduct JAD Sessions Deliverable	0 days	Fri 5/25/18	Fri 5/25/18	No
122	**122**	**4.7**	**4.7.3.1**	**2.2.10 DELIVERABLE: Technical Approach Plan (DED)**	**18 days**	**Mon 5/7/18**	**Thu 5/31/18**	**No**
123	123	4.7.1	4.7.3.1	2.2.10.1 Develop Deliverable Expectation Document for Technical Approach Plan	5 days	Mon 5/7/18	Fri 5/11/18	No
124	124	4.7.2	4.7.3.1	2.2.10.2 QA Deliverable Expectation Document	2 days	Mon 5/14/18	Tue 5/15/18	No
125	125	4.38.2	4.7.3.1	2.2.10.3 Submit Deliverable Expectation Document for Technical Approach P	0 days	Tue 5/15/18	Tue 5/15/18	No



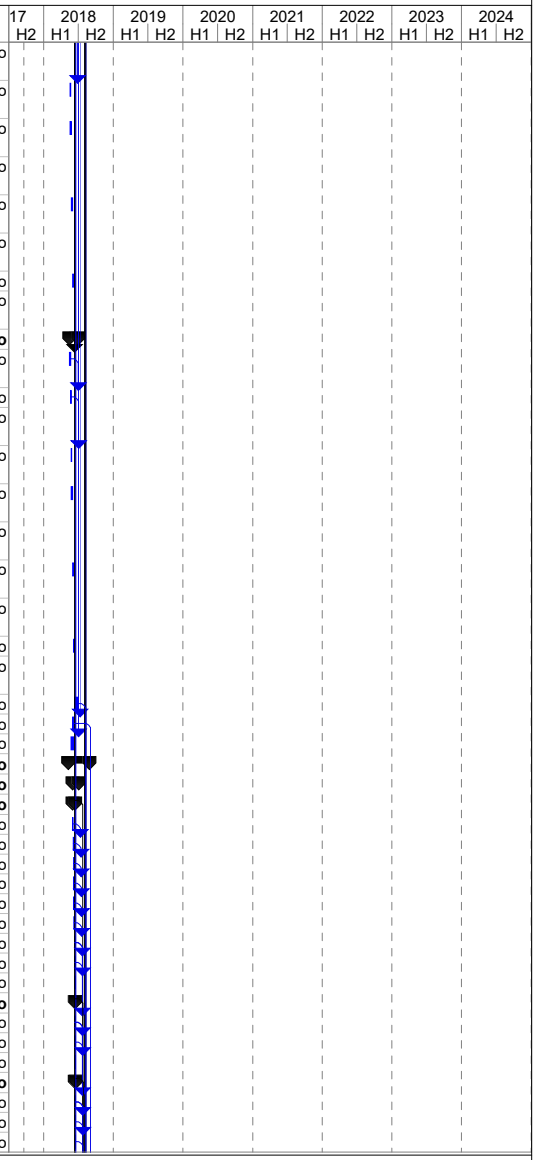
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
126	126	4.38.1	4.7.3.1	2.2.10.4 Conduct Walk-through for Deliverable Expectation Document for Technical Approach Plan	2 days	Wed 5/16/18	Thu 5/17/18	No
127	127	4.7.3	4.7.3.1	2.2.10.5 Review Deliverable Expectation Document for Technical Approach P	5 days	Wed 5/16/18	Tue 5/22/18	No
128	128	4.7.3	4.7.3.1	2.2.10.6 Provide Feedback on Deliverable Expectation Document for Technical Approach Plan	0 days	Tue 5/22/18	Tue 5/22/18	No
129	129	4.7.2	4.7.3.1	2.2.10.7 Incorporate Feedback on Deliverable Expectation Document for Technical Approach Plan	3 days	Wed 5/23/18	Fri 5/25/18	No
130	130	4.38.2	4.7.3.1	2.2.10.8 Submit Final Version of Deliverable Expectation Document for Technical Approach Plan	0 days	Fri 5/25/18	Fri 5/25/18	No
131	131	4.7.3	4.7.3.1	2.2.10.9 Review and Verify Feedback	3 days	Tue 5/29/18	Thu 5/31/18	No
132	132	4.7.3	4.7.3.1	2.2.10.10 Approve Deliverable Expectation Document for Technical Approach Plan	0 days	Thu 5/31/18	Thu 5/31/18	No
133	**133**	**4.27**	**4.27.3.1**	**2.2.11 DELIVERABLE: Functional and Technical Requirements (DED)**	**18 days**	**Mon 5/7/18**	**Thu 5/31/18**	**No**
134	134	4.27.1	4.27.3.1	2.2.11.1 Develop Deliverable Expectation Document for Functional and Technical Requirements	5 days	Mon 5/7/18	Fri 5/11/18	No
135	135	4.27.2	4.27.3.1	2.2.11.2 QA Deliverable Expectation Document	2 days	Mon 5/14/18	Tue 5/15/18	No
136	136	4.38.2	4.27.3.1	2.2.11.3 Submit Deliverable Expectation Document for Functional and Technical Requirements	0 days	Tue 5/15/18	Tue 5/15/18	No
137	137	4.38.1	4.27.3.1	2.2.11.4 Conduct Walk-through for Deliverable Expectation Document for Functional and Technical Requirements	2 days	Wed 5/16/18	Thu 5/17/18	No
138	138	4.27.3	4.27.3.1	2.2.11.5 Review Deliverable Expectation Document for Functional and Technical Requirements	5 days	Wed 5/16/18	Tue 5/22/18	No
139	139	4.27.3	4.27.3.1	2.2.11.6 Provide Feedback on Deliverable Expectation Document for Functional and Technical Requirements	0 days	Tue 5/22/18	Tue 5/22/18	No
140	140	4.27.2	4.27.3.1	2.2.11.7 Incorporate Feedback on Deliverable Expectation Document for Functional and Technical Requirements	3 days	Wed 5/23/18	Fri 5/25/18	No
141	141	4.38.2	4.27.3.1	2.2.11.8 Submit Final Version of Deliverable Expectation Document for Functional and Technical Requirements	0 days	Fri 5/25/18	Fri 5/25/18	No
142	142	4.27.3	4.27.3.1	2.2.11.9 Review and Verify Feedback	3 days	Tue 5/29/18	Thu 5/31/18	No
143	143	4.27.3	4.27.3.1	2.2.11.10 Approve Deliverable Expectation Document for Functional and Technical Requirements	0 days	Thu 5/31/18	Thu 5/31/18	No
144	**144**	**4.10**	**4.10.3.1**	**2.2.12 DELIVERABLE: Development Hardware and Software Purchase Plan (DED)**	**18 days**	**Wed 5/9/18**	**Mon 6/4/18**	**No**
145	145	4.10.1	4.10.3.1	2.2.12.1 Develop Deliverable Expectation Document for Development Hardware and Software Purchase Plan	5 days	Wed 5/9/18	Tue 5/15/18	No
146	146	4.10.2	4.10.3.1	2.2.12.2 QA Deliverable Expectation Document	2 days	Wed 5/16/18	Thu 5/17/18	No
147	147	4.38.2	4.10.3.1	2.2.12.3 Submit Deliverable Expectation Document for Development Hardware and Software Purchase Plan	0 days	Thu 5/17/18	Thu 5/17/18	No
148	148	4.38.1	4.10.3.1	2.2.12.4 Conduct Walk-through for Deliverable Expectation Document for Development Hardware and Software Purchase Plan	2 days	Fri 5/18/18	Mon 5/21/18	No
149	149	4.10.3	4.10.3.1	2.2.12.5 Review Deliverable Expectation Document for Development Hardware and Software Purchase Plan	5 days	Fri 5/18/18	Thu 5/24/18	No
150	150	4.10.3	4.10.3.1	2.2.12.6 Provide Feedback on Deliverable Expectation Document for Development Hardware and Software Purchase Plan	0 days	Thu 5/24/18	Thu 5/24/18	No
151	151	4.10.2	4.10.3.1	2.2.12.7 Incorporate Feedback on Deliverable Expectation Document for Development Hardware and Software Purchase Plan	3 days	Fri 5/25/18	Wed 5/30/18	No
152	152	4.38.2	4.10.3.1	2.2.12.8 Submit Final Version of Deliverable Expectation Document for Development Hardware and Software Purchase Plan	0 days	Wed 5/30/18	Wed 5/30/18	No
153	153	4.10.3	4.10.3.1	2.2.12.9 Review and Verify Feedback	3 days	Thu 5/31/18	Mon 6/4/18	No
154	154	4.10.3	4.10.3.1	2.2.12.10 Approve Deliverable Expectation Document for Development Hardware and Software Purchase Plan	0 days	Mon 6/4/18	Mon 6/4/18	No
155	**155**	**4.11**	**4.11.3.1**	**2.2.13 DELIVERABLE: Production Hardware and Software Configuration Plan (DED)**	**18 days**	**Wed 5/9/18**	**Mon 6/4/18**	**No**
156	156	4.11.1	4.11.3.1	2.2.13.1 Develop Deliverable Expectation Document for Production Hardware and Software Configuration Plan	5 days	Wed 5/9/18	Tue 5/15/18	No
157	157	4.11.2	4.11.3.1	2.2.13.2 QA Deliverable Expectation Document	2 days	Wed 5/16/18	Thu 5/17/18	No



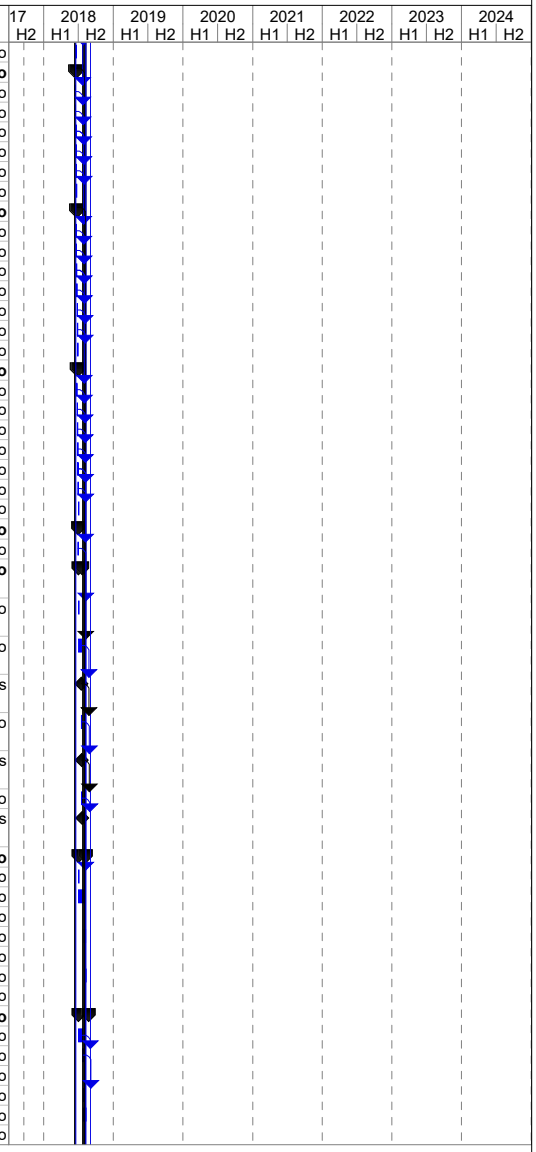
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
158	158	4.38.2	4.11.3.1	2.2.13.3 Submit Deliverable Expectation Document for Production Hardware and Software Configuration Plan	0 days	Thu 5/17/18	Thu 5/17/18	No
159	159	4.38.1	4.11.3.1	2.2.13.4 Conduct Walk-through for Deliverable Expectation Document for Production Hardware and Software Configuration Plan	2 days	Fri 5/18/18	Mon 5/21/18	No
160	160	4.11.3	4.11.3.1	2.2.13.5 Review Deliverable Expectation Document for Production Hardware and Software Configuration Plan	5 days	Fri 5/18/18	Thu 5/24/18	No
161	161	4.11.3	4.11.3.1	2.2.13.6 Provide Feedback on Deliverable Expectation Document for Production Hardware and Software Configuration Plan	0 days	Thu 5/24/18	Thu 5/24/18	No
162	162	4.11.2	4.11.3.1	2.2.13.7 Incorporate Feedback on Deliverable Expectation Document for Production Hardware and Software Configuration Plan	3 days	Fri 5/25/18	Wed 5/30/18	No
163	163	4.38.2	4.11.3.1	2.2.13.8 Submit Final Version of Deliverable Expectation Document for Production Hardware and Software Configuration Plan	0 days	Wed 5/30/18	Wed 5/30/18	No
164	164	4.11.3	4.11.3.1	2.2.13.9 Review and Verify Feedback	3 days	Thu 5/31/18	Mon 6/4/18	No
165	165	4.11.3	4.11.3.1	2.2.13.10 Approve Deliverable Expectation Document for Production Hardware and Software Configuration Plan	0 days	Mon 6/4/18	Mon 6/4/18	No
166	**166**	**4.18**	**4.18.3.1**	**2.2.14 DELIVERABLE: Data Conversion Management Plan (DED)**	**33 days**	**Tue 5/15/18**	**Fri 6/29/18**	**No**
167	167	4.18.1	4.18.3.1	2.2.14.1 Develop Deliverable Expectation Document for Data Conversion Management Plan	5 days	Tue 5/15/18	Mon 5/21/18	No
168	168	4.18.2	4.18.3.1	2.2.14.2 QA Deliverable Expectation Document	2 days	Tue 5/22/18	Wed 5/23/18	No
169	169	4.38.2	4.18.3.1	2.2.14.3 Submit Deliverable Expectation Document for Data Conversion Management Plan	0 days	Wed 5/23/18	Wed 5/23/18	No
170	170	4.38.1	4.18.3.1	2.2.14.4 Conduct Walk-through for Deliverable Expectation Document for Data Conversion Management Plan	2 days	Thu 5/24/18	Fri 5/25/18	No
171	171	4.18.3	4.18.3.1	2.2.14.5 Review Deliverable Expectation Document for Data Conversion Management Plan	5 days	Thu 5/24/18	Thu 5/31/18	No
172	172	4.18.3	4.18.3.1	2.2.14.6 Provide Feedback on Deliverable Expectation Document for Data Conversion Management Plan	0 days	Thu 5/31/18	Thu 5/31/18	No
173	173	4.18.2	4.18.3.1	2.2.14.7 Incorporate Feedback on Deliverable Expectation Document for Data Conversion Management Plan	3 days	Fri 6/1/18	Tue 6/5/18	No
174	174	4.38.2	4.18.3.1	2.2.14.8 Submit Final Version of Deliverable Expectation Document for Data Conversion Management Plan	0 days	Tue 6/5/18	Tue 6/5/18	No
175	175	4.18.3	4.18.3.1	2.2.14.9 Review and Verify Feedback	3 days	Wed 6/6/18	Fri 6/8/18	No
176	176	4.18.3	4.18.3.1	2.2.14.10 Approve Deliverable Expectation Document for Data Conversion Management Plan	0 days	Fri 6/8/18	Fri 6/8/18	No
177	177	4.18.1	4.18.3.1	2.2.14.11 Develop Data Conversion Management Plan	15 days	Mon 6/11/18	Fri 6/29/18	No
178	178	4.27.2.6		2.2.15 Requirements Preparation	5 days	Thu 5/31/18	Wed 6/6/18	No
179	179	4.28.2.5		2.2.16 Establish a hardware and software list	10 days	Wed 5/23/18	Wed 6/6/18	No
180	**180**	**1.2.1.4**		**2.3 Plan**	**77 days**	**Wed 5/9/18**	**Mon 8/27/18**	**No**
181	**181**	4.27.2.6		**2.3.1 Requirements Validation Sessions**	**22 days**	**Fri 6/1/18**	**Mon 7/2/18**	**No**
182	**182**	**4.27.2.1**	**4.27.3.1**	**2.3.1.1 Case Management/Locate**	**9 days**	**Fri 6/1/18**	**Wed 6/13/18**	**No**
183	183	4.27.2.1	4.27.3.1	2.3.1.1.1 Session 1	1 day	Fri 6/1/18	Fri 6/1/18	No
184	184	4.27.2.1	4.27.3.1	2.3.1.1.2 Session 2	1 day	Mon 6/4/18	Mon 6/4/18	No
185	185	4.27.2.1	4.27.3.1	2.3.1.1.3 Session 3	1 day	Tue 6/5/18	Tue 6/5/18	No
186	186	4.27.2.1	4.27.3.1	2.3.1.1.4 Session 4	1 day	Wed 6/6/18	Wed 6/6/18	No
187	187	4.27.2.1	4.27.3.1	2.3.1.1.5 Session 5	1 day	Thu 6/7/18	Thu 6/7/18	No
188	188	4.27.2.1	4.27.3.1	2.3.1.1.6 Session 6	1 day	Fri 6/8/18	Fri 6/8/18	No
189	189	4.27.2.1	4.27.3.1	2.3.1.1.7 Session 7	1 day	Mon 6/11/18	Mon 6/11/18	No
190	190	4.27.2.1	4.27.3.1	2.3.1.1.8 Session 8	1 day	Tue 6/12/18	Tue 6/12/18	No
191	191	4.27.2.1	4.27.3.1	2.3.1.1.9 Session 9	1 day	Wed 6/13/18	Wed 6/13/18	No
192	**192**	**4.27.2.1**	**4.27.3.1**	**2.3.1.2 Data Warehouse/Reporting**	**3 days**	**Tue 6/12/18**	**Thu 6/14/18**	**No**
193	193	4.27.2.1	4.27.3.1	2.3.1.2.1 Session 1	1 day	Tue 6/12/18	Tue 6/12/18	No
194	194	4.27.2.1	4.27.3.1	2.3.1.2.2 Session 2	1 day	Wed 6/13/18	Wed 6/13/18	No
195	195	4.27.2.1	4.27.3.1	2.3.1.2.3 Session 3	1 day	Thu 6/14/18	Thu 6/14/18	No
196	**196**	**4.27.2.1**	**4.27.3.1**	**2.3.1.3 Enforcement**	**4 days**	**Wed 6/13/18**	**Mon 6/18/18**	**No**
197	197	4.27.2.1	4.27.3.1	2.3.1.3.1 Session 1	1 day	Wed 6/13/18	Wed 6/13/18	No
198	198	4.27.2.1	4.27.3.1	2.3.1.3.2 Session 2	1 day	Thu 6/14/18	Thu 6/14/18	No
199	199	4.27.2.1	4.27.3.1	2.3.1.3.3 Session 3	1 day	Fri 6/15/18	Fri 6/15/18	No



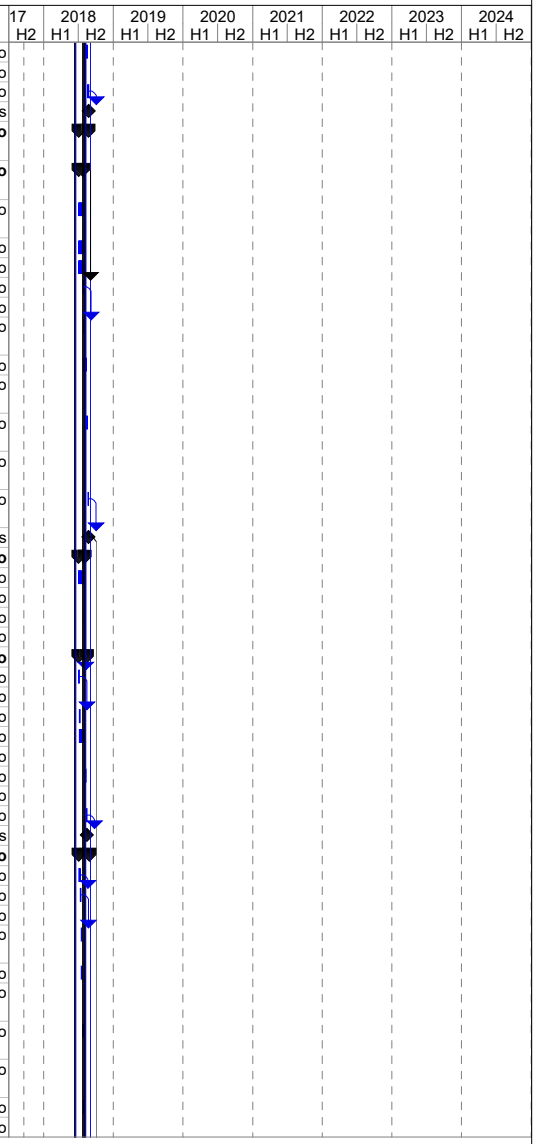
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
200	200	4.27.2.1	4.27.3.1	2.3.1.3.4 Session 4	1 day	Mon 6/18/18	Mon 6/18/18	No
201	**201**	**4.27.2.1**	**4.27.3.1**	**2.3.1.4 Establishment/Interstate**	**6 days**	**Thu 6/14/18**	**Thu 6/21/18**	**No**
202	202	4.27.2.1	4.27.3.1	2.3.1.4.1 Session 1	1 day	Thu 6/14/18	Thu 6/14/18	No
203	203	4.27.2.1	4.27.3.1	2.3.1.4.2 Session 2	1 day	Fri 6/15/18	Fri 6/15/18	No
204	204	4.27.2.1	4.27.3.1	2.3.1.4.3 Session 3	1 day	Mon 6/18/18	Mon 6/18/18	No
205	205	4.27.2.1	4.27.3.1	2.3.1.4.4 Session 4	1 day	Tue 6/19/18	Tue 6/19/18	No
206	206	4.27.2.1	4.27.3.1	2.3.1.4.5 Session 5	1 day	Wed 6/20/18	Wed 6/20/18	No
207	207	4.27.2.1	4.27.3.1	2.3.1.4.6 Session 6	1 day	Thu 6/21/18	Thu 6/21/18	No
208	**208**	**4.27.2.1**	**4.27.3.1**	**2.3.1.5 Financials**	**7 days**	**Tue 6/19/18**	**Wed 6/27/18**	**No**
209	209	4.27.2.1	4.27.3.1	2.3.1.5.1 Session 1	1 day	Tue 6/19/18	Tue 6/19/18	No
210	210	4.27.2.1	4.27.3.1	2.3.1.5.2 Session 2	1 day	Wed 6/20/18	Wed 6/20/18	No
211	211	4.27.2.1	4.27.3.1	2.3.1.5.3 Session 3	1 day	Thu 6/21/18	Thu 6/21/18	No
212	212	4.27.2.1	4.27.3.1	2.3.1.5.4 Session 4	1 day	Fri 6/22/18	Fri 6/22/18	No
213	213	4.27.2.1	4.27.3.1	2.3.1.5.5 Session 5	1 day	Mon 6/25/18	Mon 6/25/18	No
214	214	4.27.2.1	4.27.3.1	2.3.1.5.6 Session 6	1 day	Tue 6/26/18	Tue 6/26/18	No
215	215	4.27.2.1	4.27.3.1	2.3.1.5.7 Session 7	1 day	Wed 6/27/18	Wed 6/27/18	No
216	**216**	**4.27.2.1**	**4.27.3.1**	**2.3.1.6 Intake/Self Service**	**7 days**	**Fri 6/22/18**	**Mon 7/2/18**	**No**
217	217	4.27.2.1	4.27.3.1	2.3.1.6.1 Session 1	1 day	Fri 6/22/18	Fri 6/22/18	No
218	218	4.27.2.1	4.27.3.1	2.3.1.6.2 Session 2	1 day	Mon 6/25/18	Mon 6/25/18	No
219	219	4.27.2.1	4.27.3.1	2.3.1.6.3 Session 3	1 day	Tue 6/26/18	Tue 6/26/18	No
220	220	4.27.2.1	4.27.3.1	2.3.1.6.4 Session 4	1 day	Wed 6/27/18	Wed 6/27/18	No
221	221	4.27.2.1	4.27.3.1	2.3.1.6.5 Session 5	1 day	Thu 6/28/18	Thu 6/28/18	No
222	222	4.27.2.1	4.27.3.1	2.3.1.6.6 Session 6	1 day	Fri 6/29/18	Fri 6/29/18	No
223	223	4.27.2.1	4.27.3.1	2.3.1.6.7 Session 7	1 day	Mon 7/2/18	Mon 7/2/18	No
224	**224**	4.27.2.6		**2.3.1.7 Integration**	**1 day**	**Fri 6/29/18**	**Fri 6/29/18**	**No**
225	225	4.27.2.1	4.27.3.1	2.3.1.7.1 Session 1	1 day	Fri 6/29/18	Fri 6/29/18	No
226	**226**	**4.4.1**	**4.4.3.1**	**2.3.2 DELIVERABLE: Project Site Establishment, Maintenance and Management**	**14 days**	**Mon 7/2/18**	**Fri 7/20/18**	**No**
227	227	4.38.1	4.4.3.1	2.3.2.1 Conduct Walkthrough of Project Site Establishment, Maintenance, and Management Deliverable	2 days	Mon 7/2/18	Tue 7/3/18	No
228	228	4.4.3	4.4.3.1	2.3.2.2 Review Project Site Establishment, Maintenance, and Management Deliverable	10 days	Mon 7/2/18	Mon 7/16/18	No
229	229	4.4.3	4.4.3.1	2.3.2.3 Provide Feedback on Project Site Establishment, Maintenance, and Management Deliverable	0 days	Mon 7/16/18	Mon 7/16/18	Yes
230	230	4.4.3	4.4.3.1	2.3.2.4 Incorporate Feedback on Project Site Establishment, Maintenance, and Management Deliverable	2 days	Tue 7/17/18	Wed 7/18/18	No
231	231	4.38.2	4.4.3.1	2.3.2.5 Submit Final Project Site Establishment, Maintenance, and Management Deliverable	0 days	Wed 7/18/18	Wed 7/18/18	Yes
232	232	4.4.3	4.4.3.1	2.3.2.6 Review and Verify Feedback	2 days	Thu 7/19/18	Fri 7/20/18	No
233	233	4.4.3	4.4.3.1	2.3.2.7 Approve Project Site Establishment, Maintenance, and Management Deliverable	0 days	Fri 7/20/18	Fri 7/20/18	Yes
234	**234**	**4.16.1**	**4.16.3.1**	**2.3.3 DELIVERABLE: Data Governance Plan**	**28 days**	**Mon 7/2/18**	**Thu 8/9/18**	**No**
235	235	4.38.1	4.16.3.1	2.3.3.1 Conduct Walk-through for Data Governance Plan	2 days	Mon 7/2/18	Tue 7/3/18	No
236	236	4.16.3	4.16.3.1	2.3.3.2 Review Data Governance Plan	20 days	Mon 7/2/18	Mon 7/30/18	No
237	237	4.16.3	4.16.3.1	2.3.3.3 Provide Feedback on Data Governance Plan	0 days	Mon 7/30/18	Mon 7/30/18	No
238	238	4.16.3	4.16.3.1	2.3.3.4 Incorporate Feedback on Data Governance Plan	5 days	Tue 7/31/18	Mon 8/6/18	No
239	239	4.38.2	4.16.3.1	2.3.3.5 Submit Final Version of Data Governance Plan	0 days	Mon 8/6/18	Mon 8/6/18	No
240	240	4.16.3	4.16.3.1	2.3.3.6 Review and Verify Feedback on Data Governance Plan	3 days	Tue 8/7/18	Thu 8/9/18	No
241	241	4.16.1	4.16.3.1	2.3.3.7 Approve Data Governance Plan	0 days	Thu 8/9/18	Thu 8/9/18	No
242	**242**	**4.7**	**4.7.3.1**	**2.3.4 DELIVERABLE: Technical Approach Plan**	**38 days**	**Mon 7/2/18**	**Thu 8/23/18**	**No**
243	243	4.7.1	4.7.3.1	2.3.4.1 Develop Technical Approach Plan	15 days	Mon 7/2/18	Mon 7/23/18	No
244	244	4.7.2	4.7.3.1	2.3.4.2 QA Deliverable	3 days	Tue 7/24/18	Thu 7/26/18	No
245	245	4.38.2	4.7.3.1	2.3.4.3 Submit Technical Approach Plan	0 days	Thu 7/26/18	Thu 7/26/18	No
246	246	4.38.1	4.7.3.1	2.3.4.4 Conduct Walk-through for Technical Approach Plan	2 days	Fri 7/27/18	Mon 7/30/18	No
247	247	4.7.3	4.7.3.1	2.3.4.5 Review Technical Approach Plan	10 days	Fri 7/27/18	Thu 8/9/18	No
248	248	4.7.3	4.7.3.1	2.3.4.6 Provide Feedback on Technical Approach Plan	0 days	Thu 8/9/18	Thu 8/9/18	No



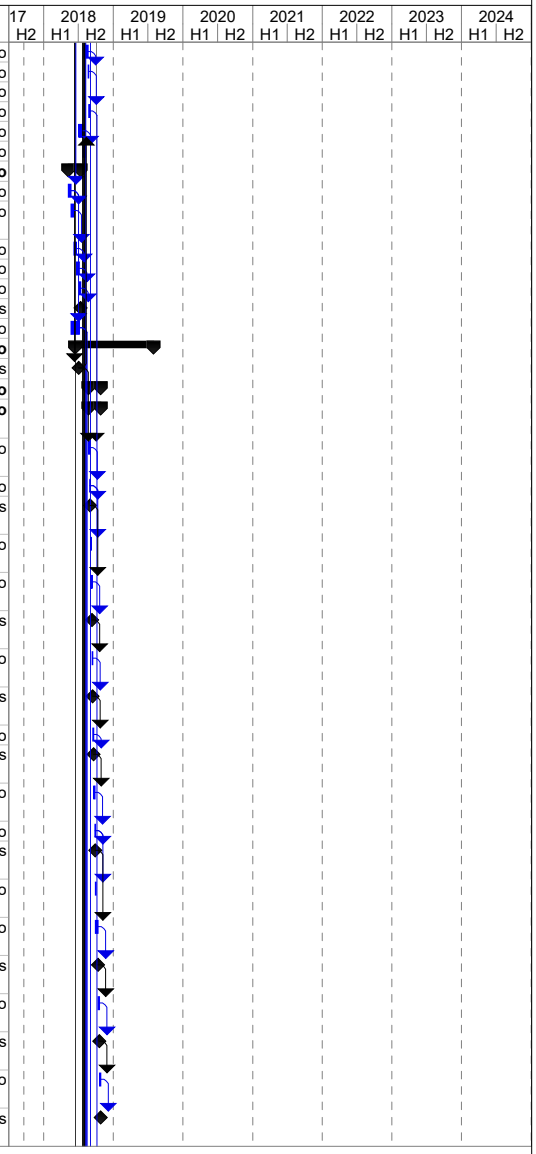
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
249	249	4.7.3	4.7.3.1	2.3.4.7 Incorporate Feedback on Technical Approach Plan	5 days	Fri 8/10/18	Thu 8/16/18	No
250	250	4.38.2	4.7.3.1	2.3.4.8 Submit Final Version of Technical Approach Plan	0 days	Thu 8/16/18	Thu 8/16/18	No
251	251	4.7.3	4.7.3.1	2.3.4.9 Review and Verify Feedback on Technical Approach Plan	5 days	Fri 8/17/18	Thu 8/23/18	No
252	252	4.7.1	4.7.3.1	2.3.4.10 Approve Technical Approach Plan	0 days	Thu 8/23/18	Thu 8/23/18	Yes
253	**253**	**4.10**	**4.10.3.1**	**2.3.5 DELIVERABLE: Development Hardware and Software Purchase Plan**	**36 days**	**Tue 7/3/18**	**Wed 8/22/18**	**No**
254	**254**	**4.10.1**	**4.10.3.1**	**2.3.5.1 Develop Development Hardware and Software Purchase Plan**	**15 days**	**Tue 7/3/18**	**Tue 7/24/18**	**No**
255	255	4.10.2	4.10.3.1	2.3.5.1.1 Identify needed hardware, software and communications components	15 days	Tue 7/3/18	Tue 7/24/18	No
256	256	4.10.2	4.10.3.1	2.3.5.1.2 Describe the procurement steps	15 days	Tue 7/3/18	Tue 7/24/18	No
257	257	4.10.2	4.10.3.1	2.3.5.1.3 Establish the maintenance agreements needed	15 days	Tue 7/3/18	Tue 7/24/18	No
258	258	4.10.2	4.10.3.1	2.3.5.2 QA Deliverable	3 days	Wed 7/25/18	Fri 7/27/18	No
259	259	4.38.2	4.10.3.1	2.3.5.3 Submit Development Hardware and Software Purchase Plan	0 days	Fri 7/27/18	Fri 7/27/18	No
260	260	4.38.1	4.10.3.1	2.3.5.4 Conduct Walk-through for Development Hardware and Software Purchase Plan	2 days	Mon 7/30/18	Tue 7/31/18	No
261	261	4.10.3	4.10.3.1	2.3.5.5 Review Development Hardware and Software Purchase Plan	10 days	Mon 7/30/18	Fri 8/10/18	No
262	262	4.10.3	4.10.3.1	2.3.5.6 Provide Feedback on Development Hardware and Software Purchase Plan	0 days	Fri 8/10/18	Fri 8/10/18	No
263	263	4.10.3	4.10.3.1	2.3.5.7 Incorporate Feedback on Development Hardware and Software Purchase Plan	5 days	Mon 8/13/18	Fri 8/17/18	No
264	264	4.38.2	4.10.3.1	2.3.5.8 Submit Final Version of Development Hardware and Software Purchase Plan	0 days	Fri 8/17/18	Fri 8/17/18	No
265	265	4.10.3	4.10.3.1	2.3.5.9 Review and Verify Feedback on Development Hardware and Software Purchase Plan	3 days	Mon 8/20/18	Wed 8/22/18	No
266	266	4.10.1	4.10.3.1	2.3.5.10 Approve Development Hardware and Software Purchase Plan	0 days	Wed 8/22/18	Wed 8/22/18	Yes
267	**267**	**4.14**	**4.14.3.1**	**2.3.6 DELIVERABLE: Ease of Use Management Plan**	**23 days**	**Mon 7/2/18**	**Thu 8/2/18**	**No**
268	268	4.14.3	4.14.3.1	2.3.6.1 Incorporate Feedback on Ease of Use Management Plan	20 days	Mon 7/2/18	Mon 7/30/18	No
269	269	4.38.2	4.14.3.1	2.3.6.2 Submit Final Version of Ease of Use Management Plan	0 days	Mon 7/30/18	Mon 7/30/18	No
270	270	4.14.3	4.14.3.1	2.3.6.3 Review and Verify Feedback on Ease of Use Management Plan	3 days	Tue 7/31/18	Thu 8/2/18	No
271	271	4.14.1	4.14.3.1	2.3.6.4 Approve Ease of Use Management Plan	0 days	Thu 8/2/18	Thu 8/2/18	No
272	**272**	**4.18**	**4.18.3.1**	**2.3.7 DELIVERABLE: Data Conversion Management Plan**	**31 days**	**Mon 7/2/18**	**Tue 8/14/18**	**No**
273	273	4.18.2	4.18.3.1	2.3.7.1 QA Deliverable	3 days	Mon 7/2/18	Thu 7/5/18	No
274	274	4.38.2	4.18.3.1	2.3.7.2 Submit Data Conversion Management Plan	0 days	Thu 7/5/18	Thu 7/5/18	No
275	275	4.38.1	4.18.3.1	2.3.7.3 Conduct Walk-through for Data Conversion Management Plan	2 days	Fri 7/6/18	Mon 7/9/18	No
276	276	4.18.3	4.18.3.1	2.3.7.4 Review Data Conversion Management Plan	20 days	Fri 7/6/18	Thu 8/2/18	No
277	277	4.18.3	4.18.3.1	2.3.7.5 Provide Feedback on Data Conversion Management Plan	0 days	Thu 8/2/18	Thu 8/2/18	No
278	278	4.18.3	4.18.3.1	2.3.7.6 Incorporate Feedback on Data Conversion Management Plan	5 days	Fri 8/3/18	Thu 8/9/18	No
279	279	4.38.2	4.18.3.1	2.3.7.7 Submit Final Version of Data Conversion Management Plan	0 days	Thu 8/9/18	Thu 8/9/18	No
280	280	4.18.3	4.18.3.1	2.3.7.8 Review and Verify Data Conversion Management Plan	3 days	Fri 8/10/18	Tue 8/14/18	No
281	281	4.18.1	4.18.3.1	2.3.7.9 Approve Data Conversion Management Plan	0 days	Tue 8/14/18	Tue 8/14/18	Yes
282	**282**	**4.28.2**	**4.28.3.3**	**2.3.8 DELIVERABLE: Environments (DED)**	**39 days**	**Tue 7/3/18**	**Mon 8/27/18**	**No**
283	283	4.28.1	4.28.3.3	2.3.8.1 Develop Deliverable Expectation Document for Environments	5 days	Tue 7/3/18	Tue 7/10/18	No
284	284	4.28.2	4.28.3.3	2.3.8.2 QA Deliverable Expectation Document	3 days	Wed 7/11/18	Fri 7/13/18	No
285	285	4.38.2	4.28.3.3	2.3.8.3 Submit Deliverable Expectation Document for Environments	0 days	Fri 7/13/18	Fri 7/13/18	No
286	286	4.38.1	4.28.3.3	2.3.8.4 Conduct Walk-through for Deliverable Expectation Document for Environments	2 days	Mon 7/16/18	Tue 7/17/18	No
287	287	4.28.3	4.28.3.3	2.3.8.5 Review Deliverable Expectation Document for Environments	5 days	Mon 7/16/18	Fri 7/20/18	No
288	288	4.28.3	4.28.3.3	2.3.8.6 Provide Feedback on Deliverable Expectation Document for Environments	0 days	Fri 7/20/18	Fri 7/20/18	No
289	289	4.28.2	4.28.3.3	2.3.8.7 Incorporate Feedback on Deliverable Expectation Document for Environments	3 days	Mon 7/23/18	Wed 7/25/18	No
290	290	4.38.2	4.28.3.3	2.3.8.8 Submit Final Version of Deliverable Expectation Document for Environments	0 days	Wed 7/25/18	Wed 7/25/18	No
291	291	4.28.3	4.28.3.3	2.3.8.9 Review and Verify Feedback	3 days	Thu 7/26/18	Mon 7/30/18	No
292	292	4.28.3	4.28.3.3	2.3.8.10 Approve Deliverable Expectation Document for Environments	0 days	Mon 7/30/18	Mon 7/30/18	No



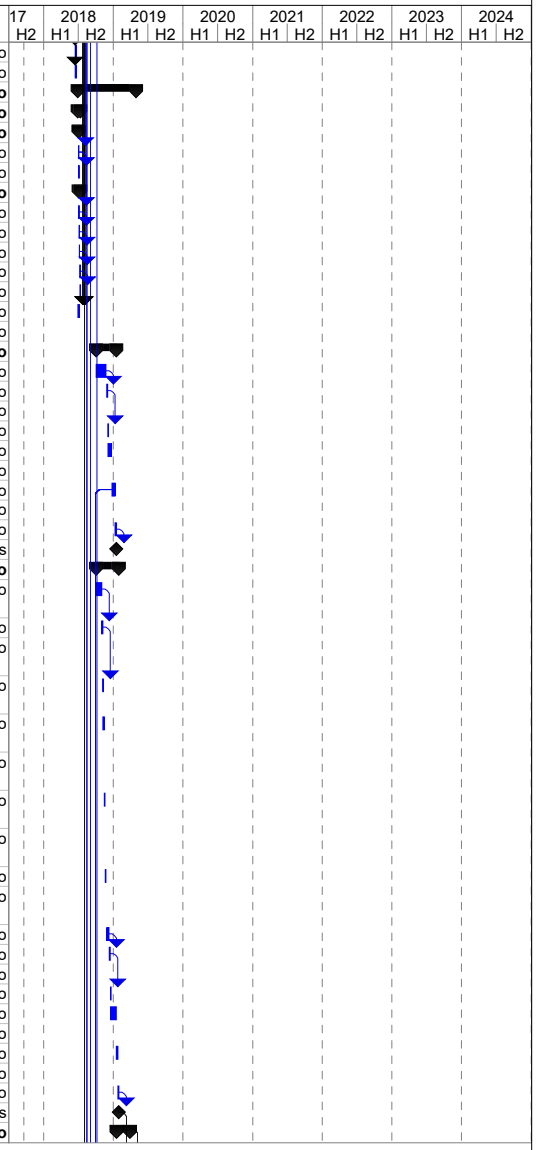
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
293	293	4.28.1	4.28.3.3	2.3.8.11 Develop Environments	15 days	Tue 7/31/18	Mon 8/20/18	No
294	294	4.28.2	4.28.3.3	2.3.8.12 QA Deliverable	3 days	Tue 8/21/18	Thu 8/23/18	No
295	295	4.38.2	4.28.3.3	2.3.8.13 Submit Environments	0 days	Thu 8/23/18	Thu 8/23/18	No
296	296	4.38.1	4.28.3.3	2.3.8.14 Conduct Walk-through for Environments	2 days	Fri 8/24/18	Mon 8/27/18	No
297	297	4.28.2.5		2.3.9 Set Up, Deliver and Deploy Sandbox Environment	15 days	Tue 7/3/18	Tue 7/24/18	No
298	298	4.28.2.5		2.3.10 Update hardware and software list	10 days	Wed 7/25/18	Tue 8/7/18	No
299	**299**	**4.28**		**2.3.11 Proof of Concept**	**45 days**	**Wed 5/9/18**	**Thu 7/12/18**	**No**
300	300	4.28		2.3.11.1 Establish Source Code repository	10 days	Wed 5/9/18	Tue 5/22/18	No
301	301	4.28		2.3.11.2 Make Necessary modifications to CA CSE code base for Proof of Concept	10 days	Wed 5/23/18	Wed 6/6/18	No
302	302	4.28		2.3.11.3 Compile California CSE Source Code and Resolve Errors	10 days	Thu 6/7/18	Wed 6/20/18	No
303	303	4.28		2.3.11.4 Populate Data for Proof of Concept	10 days	Thu 6/21/18	Thu 7/5/18	No
304	304	4.28		2.3.11.5 Deploy and Test Proof of Concept	5 days	Fri 7/6/18	Thu 7/12/18	No
305	305	4.28		2.3.11.6 Proof of Concept Available for Use in JADs	0 days	Thu 7/12/18	Thu 7/12/18	Yes
306	306	4.28.2.5		2.3.11.7 Set Up, Deliver and Deploy Proof of Concept Environment	30 days	Wed 5/23/18	Thu 7/5/18	No
307	**307**	**1.2.1.4**		**3 Elaboration**	**281 days**	**Thu 6/14/18**	**Mon 7/29/19**	**No**
308	308	**1.2.1.4**		3.1 Elaboration Phase Start	0 days	Mon 7/2/18	Mon 7/2/18	Yes
309	**309**	**1.2.1.4**		**3.2 Execution Deliverables from Inception Phase**	**45 days**	**Thu 8/23/18**	**Thu 10/25/18**	**No**
310	**310**	**4.10**	**4.10.3.2**	**3.2.1 DELIVERABLE: Successful Execution of the Development Hardware and Software Purchase Plan**	**45 days**	**Thu 8/23/18**	**Thu 10/25/18**	**No**
311	311	4.10.1	4.10.3.2	3.2.1.1 Develop Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	5 days	Thu 8/23/18	Wed 8/29/18	No
312	312	4.10.2	4.10.3.2	3.2.1.2 QA Deliverable Expectation Document	2 days	Thu 8/30/18	Fri 8/31/18	No
313	313	4.38.2	4.10.3.2	3.2.1.3 Submit Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	0 days	Fri 8/31/18	Fri 8/31/18	Yes
314	314	4.38.1	4.10.3.2	3.2.1.4 Conduct Walk-through for Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	2 days	Tue 9/4/18	Wed 9/5/18	No
315	315	4.10.3	4.10.3.2	3.2.1.5 Review Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	5 days	Tue 9/4/18	Mon 9/10/18	No
316	316	4.10.3	4.10.3.2	3.2.1.6 Provide Feedback on Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	0 days	Mon 9/10/18	Mon 9/10/18	Yes
317	317	4.10.2	4.10.3.2	3.2.1.7 Incorporate Feedback on Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	3 days	Tue 9/11/18	Thu 9/13/18	No
318	318	4.38.2	4.10.3.2	3.2.1.8 Submit Final Version of Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	0 days	Thu 9/13/18	Thu 9/13/18	Yes
319	319	4.10.3	4.10.3.2	3.2.1.9 Review and Verify Feedback	3 days	Fri 9/14/18	Tue 9/18/18	No
320	320	4.10.3	4.10.3.2	3.2.1.10 Approve Deliverable Expectation Document for Development Hardware and Software Purchase Plan Successful Execution	0 days	Tue 9/18/18	Tue 9/18/18	Yes
321	321	4.10.1	4.10.3.2	3.2.1.11 Develop Development Hardware and Software Purchase Plan Successful Execution	5 days	Wed 9/19/18	Tue 9/25/18	No
322	322	4.10.2	4.10.3.2	3.2.1.12 QA Deliverable	2 days	Wed 9/26/18	Thu 9/27/18	No
323	323	4.38.2	4.10.3.2	3.2.1.13 Submit Development Hardware and Software Purchase Plan Successful Execution	0 days	Thu 9/27/18	Thu 9/27/18	Yes
324	324	4.38.1	4.10.3.2	3.2.1.14 Conduct Walk-through for Development Hardware and Software Purchase Plan Successful Execution	2 days	Fri 9/28/18	Mon 10/1/18	No
325	325	4.10.3	4.10.3.2	3.2.1.15 Review Development Hardware and Software Purchase Plan Successful Execution	10 days	Fri 9/28/18	Thu 10/11/18	No
326	326	4.10.3	4.10.3.2	3.2.1.16 Provide Feedback on Development Hardware and Software Purchase Plan Successful Execution	0 days	Thu 10/11/18	Thu 10/11/18	Yes
327	327	4.10.2	4.10.3.2	3.2.1.17 Incorporate Feedback on Development Hardware and Software Purchase Plan Successful Execution	5 days	Fri 10/12/18	Thu 10/18/18	No
328	328	4.38.2	4.10.3.2	3.2.1.18 Submit Final Version of Development Hardware and Software Purchase Plan Successful Execution	0 days	Thu 10/18/18	Thu 10/18/18	Yes
329	329	4.10.3	4.10.3.2	3.2.1.19 Review and Verify Feedback on Development Hardware and Software Purchase Plan Successful Execution	5 days	Fri 10/19/18	Thu 10/25/18	No
330	330	4.10.3	4.10.3.2	3.2.1.20 Approve Development Hardware and Software Purchase Plan Successful Execution	0 days	Thu 10/25/18	Thu 10/25/18	Yes



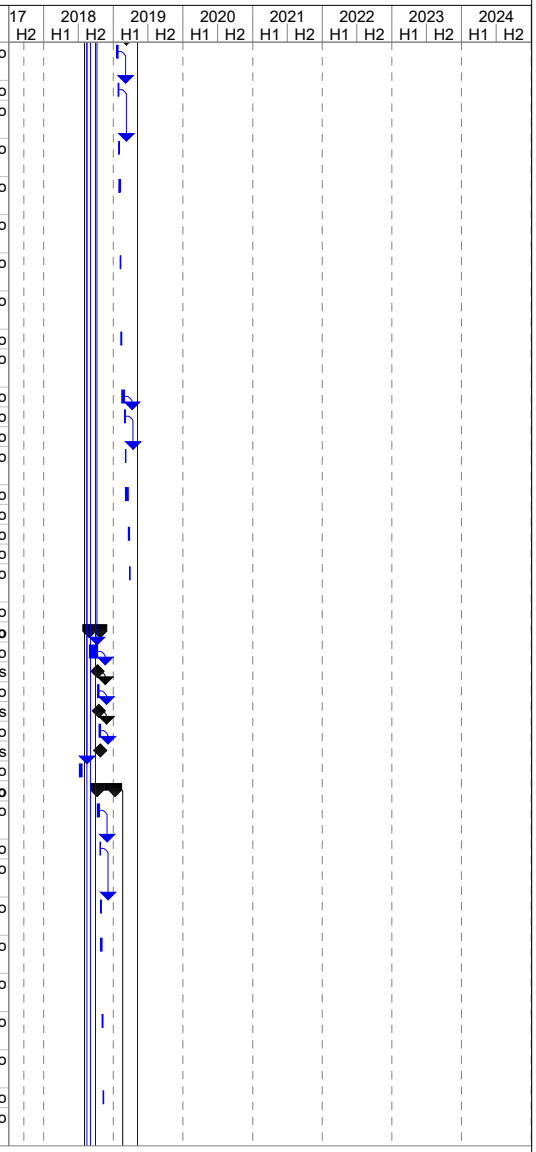
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
331	331	4.27.2.1	4.27.3.1	3.3 Analyze As-Is and To-Be Business Process Models	5 days	Thu 6/14/18	Wed 6/20/18	No
332	332	4.27.2.1	4.27.3.1	3.4 Confirm Solution Fit-Gap Analysis	5 days	Thu 6/14/18	Wed 6/20/18	No
333	**333**	**1.2.1.4**		**3.5 Requirements**	**208 days**	**Thu 6/28/18**	**Mon 4/29/19**	**No**
334	**334**	**4.27**		**3.5.1 Requirements Validation Sessions (Cont)**	**8 days**	**Thu 6/28/18**	**Tue 7/10/18**	**No**
335	**335**	**4.27.2.1**	**4.27.3.1**	**3.5.1.1 Integration**	**2 days**	**Mon 7/2/18**	**Tue 7/3/18**	**No**
336	336	4.27.2.1	4.27.3.1	3.5.1.1.1 Session 2	1 day	Mon 7/2/18	Mon 7/2/18	No
337	337	4.27.2.1	4.27.3.1	3.5.1.1.2 Session 3	1 day	Tue 7/3/18	Tue 7/3/18	No
338	**338**	**4.27.2.1**	**4.27.3.1**	**3.5.1.2 Technical/Non-Functional**	**5 days**	**Tue 7/3/18**	**Tue 7/10/18**	**No**
339	339	4.27.2.1	4.27.3.1	3.5.1.2.1 Session 1	1 day	Tue 7/3/18	Tue 7/3/18	No
340	340	4.27.2.1	4.27.3.1	3.5.1.2.2 Session 2	1 day	Thu 7/5/18	Thu 7/5/18	No
341	341	4.27.2.1	4.27.3.1	3.5.1.2.3 Session 3	1 day	Fri 7/6/18	Fri 7/6/18	No
342	342	4.27.2.1	4.27.3.1	3.5.1.2.4 Session 4	1 day	Mon 7/9/18	Mon 7/9/18	No
343	343	4.27.2.1	4.27.3.1	3.5.1.2.5 Session 5	1 day	Tue 7/10/18	Tue 7/10/18	No
344	344	4.27.2.1	4.27.3.1	3.5.1.3 Confirm Requirements Through Requirements Validation	5 days	Thu 6/28/18	Thu 7/5/18	No
345	345	4.27.2.1	4.27.3.1	3.5.1.4 Define Functional Requirements Completed	0 days	Thu 7/5/18	Thu 7/5/18	No
346	**346**	**4.27**	**4.27.3.1**	**3.5.2 DELIVERABLE: Functional and Technical Requirements**	**70 days**	**Tue 10/2/18**	**Tue 1/15/19**	**No**
347	347	4.27.1	4.27.3.1	3.5.2.1 Develop Functional and Technical Requirements	35 days	Tue 10/2/18	Wed 11/21/18	No
348	348	4.27.2	4.27.3.1	3.5.2.2 QA Deliverable	5 days	Mon 11/26/18	Fri 11/30/18	No
349	349	4.38.2	4.27.3.1	3.5.2.3 Submit Functional and Technical Requirements	0 days	Fri 11/30/18	Fri 11/30/18	No
350	350	4.38.1	4.27.3.1	3.5.2.4 Conduct Walk-through for Functional and Technical Requirements	2 days	Mon 12/3/18	Tue 12/4/18	No
351	351	4.27.3	4.27.3.1	3.5.2.5 Review Functional and Technical Requirements	15 days	Mon 12/3/18	Fri 12/21/18	No
352	352	4.27.3	4.27.3.1	3.5.2.6 Provide Feedback on Functional and Technical Requirements	0 days	Fri 12/21/18	Fri 12/21/18	No
353	353	4.27.2	4.27.3.1	3.5.2.7 Incorporate Feedback on Functional and Technical Requirements	10 days	Mon 12/24/18	Tue 1/8/19	No
354	354	4.38.2	4.27.3.1	3.5.2.8 Submit Final Version of Functional and Technical Requirements	0 days	Tue 1/8/19	Tue 1/8/19	No
355	355	4.27.3	4.27.3.1	3.5.2.9 Review and Verify Functional and Technical Requirements	5 days	Wed 1/9/19	Tue 1/15/19	No
356	356	4.27.1	4.27.3.1	3.5.2.10 Approve Functional and Technical Requirements	0 days	Tue 1/15/19	Tue 1/15/19	Yes
357	**357**	**4.13**	**4.13.3.1**	**3.5.3 DELIVERABLE: Application Development Plan**	**78 days**	**Tue 10/2/18**	**Mon 1/28/19**	**No**
358	358	4.13.1	4.13.3.1	3.5.3.1 Develop Deliverable Expectation Document for Application Development Plan	20 days	Tue 10/2/18	Tue 10/30/18	No
359	359	4.13.2	4.13.3.1	3.5.3.2 QA Deliverable Expectation Document	4 days	Wed 10/31/18	Mon 11/5/18	No
360	360	4.38.2	4.13.3.1	3.5.3.3 Submit Deliverable Expectation Document for Application Development Plan	0 days	Mon 11/5/18	Mon 11/5/18	No
361	361	4.38.1	4.13.3.1	3.5.3.4 Conduct Walk-through for Deliverable Expectation Document for Application Development Plan	2 days	Tue 11/6/18	Wed 11/7/18	No
362	362	4.13.3	4.13.3.1	3.5.3.5 Review Deliverable Expectation Document for Application Development Plan	5 days	Tue 11/6/18	Tue 11/13/18	No
363	363	4.13.3	4.13.3.1	3.5.3.6 Provide Feedback on Deliverable Expectation Document for Application Development Plan	0 days	Tue 11/13/18	Tue 11/13/18	No
364	364	4.13.2	4.13.3.1	3.5.3.7 Incorporate Feedback on Deliverable Expectation Document for Application Development Plan	3 days	Wed 11/14/18	Fri 11/16/18	No
365	365	4.38.2	4.13.3.1	3.5.3.8 Submit Final Version of Deliverable Expectation Document for Application Development Plan	0 days	Fri 11/16/18	Fri 11/16/18	No
366	366	4.13.3	4.13.3.1	3.5.3.9 Review and Verify Feedback	3 days	Mon 11/19/18	Wed 11/21/18	No
367	367	4.13.3	4.13.3.1	3.5.3.10 Approve Deliverable Expectation Document for Application Development Plan	0 days	Wed 11/21/18	Wed 11/21/18	No
368	368	4.13.1	4.13.3.1	3.5.3.11 Develop Application Development Plan	10 days	Mon 11/26/18	Fri 12/7/18	No
369	369	4.13.2	4.13.3.1	3.5.3.12 QA Deliverable	5 days	Mon 12/10/18	Fri 12/14/18	No
370	370	4.38.2	4.13.3.1	3.5.3.13 Submit Application Development Plan	0 days	Fri 12/14/18	Fri 12/14/18	No
371	371	4.38.1	4.13.3.1	3.5.3.14 Conduct Walk-through for Application Development Plan	2 days	Mon 12/17/18	Tue 12/18/18	No
372	372	4.13.3	4.13.3.1	3.5.3.15 Review Application Development Plan	20 days	Mon 12/17/18	Tue 1/15/19	No
373	373	4.13.3	4.13.3.1	3.5.3.16 Provide Feedback on Application Development Plan	0 days	Tue 1/15/19	Tue 1/15/19	No
374	374	4.13.2	4.13.3.1	3.5.3.17 Incorporate Feedback on Application Development Plan	5 days	Wed 1/16/19	Wed 1/23/19	No
375	375	4.38.2	4.13.3.1	3.5.3.18 Submit Final Version of Application Development Plan	0 days	Wed 1/23/19	Wed 1/23/19	No
376	376	4.13.3	4.13.3.1	3.5.3.19 Review and Verify Feedback on Application Development Plan	3 days	Thu 1/24/19	Mon 1/28/19	No
377	377	4.13.1	4.13.3.1	3.5.3.20 Approve Application Development Plan	0 days	Mon 1/28/19	Mon 1/28/19	Yes
378	**378**	**4.15**	**4.15.3.1**	**3.5.4 DELIVERABLE: Database Configuration Management Plan**	**49 days**	**Thu 1/17/19**	**Thu 3/28/19**	**No**



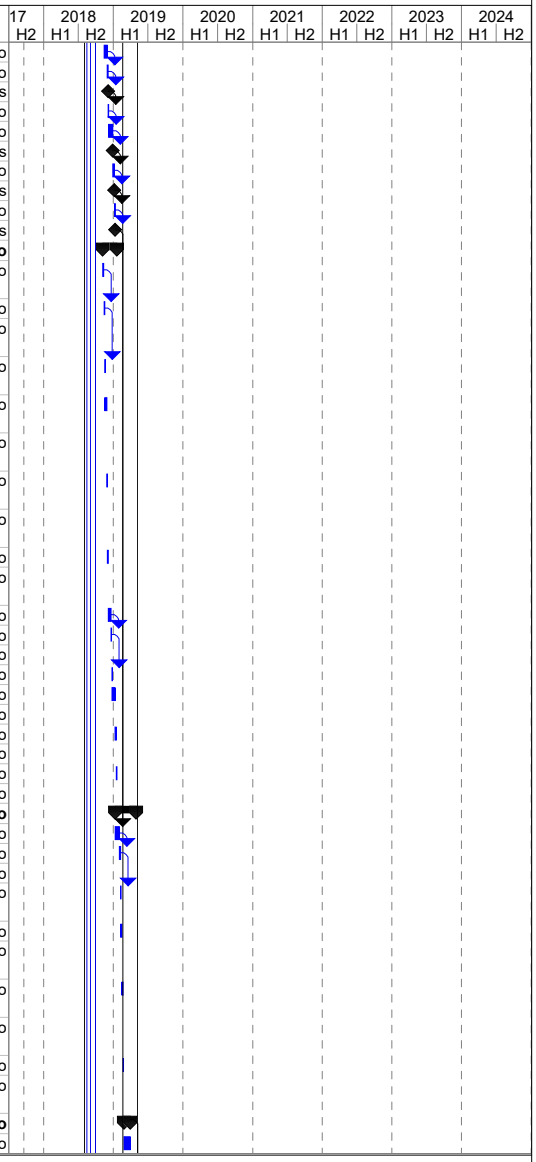
Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Critical	
Milestone		Inactive Task		Manual Summary Rollup		Critical Split	
Summary		Inactive Milestone		Manual Summary		Progress	
Project Summary		Inactive Summary		Start-only		Deadline	

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
379	379	4.15.1	4.15.3.1	3.5.4.1 Develop Deliverable Expectation Document for Database Configuration Management Plan	5 days	Thu 1/17/19	Thu 1/24/19	No
380	380	4.15.2	4.15.3.1	3.5.4.2 QA Deliverable Expectation Document	2 days	Fri 1/25/19	Mon 1/28/19	No
381	381	4.38.2	4.15.3.1	3.5.4.3 Submit Deliverable Expectation Document for Database Configuration Management Plan	0 days	Mon 1/28/19	Mon 1/28/19	No
382	382	4.38.1	4.15.3.1	3.5.4.4 Conduct Walk-through for Deliverable Expectation Document for Database Configuration Management Plan	2 days	Tue 1/29/19	Wed 1/30/19	No
383	383	4.15.3	4.15.3.1	3.5.4.5 Review Deliverable Expectation Document for Database Configuration Management Plan	5 days	Tue 1/29/19	Mon 2/4/19	No
384	384	4.15.3	4.15.3.1	3.5.4.6 Provide Feedback on Deliverable Expectation Document for Database Configuration Management Plan	0 days	Mon 2/4/19	Mon 2/4/19	No
385	385	4.15.2	4.15.3.1	3.5.4.7 Incorporate Feedback on Deliverable Expectation Document for Database Configuration Management Plan	3 days	Tue 2/5/19	Thu 2/7/19	No
386	386	4.38.2	4.15.3.1	3.5.4.8 Submit Final Version of Deliverable Expectation Document for Database Configuration Management Plan	0 days	Thu 2/7/19	Thu 2/7/19	No
387	387	4.15.3	4.15.3.1	3.5.4.9 Review and Verify Feedback	3 days	Fri 2/8/19	Tue 2/12/19	No
388	388	4.15.3	4.15.3.1	3.5.4.10 Approve Deliverable Expectation Document for Database Configuration Management Plan	0 days	Tue 2/12/19	Tue 2/12/19	No
389	389	4.15.1	4.15.3.1	3.5.4.11 Develop Database Configuration Management Plan	10 days	Wed 2/13/19	Wed 2/27/19	No
390	390	4.15.2	4.15.3.1	3.5.4.12 QA Deliverable	3 days	Thu 2/28/19	Mon 3/4/19	No
391	391	4.38.2	4.15.3.1	3.5.4.13 Submit Database Configuration Management Plan	0 days	Mon 3/4/19	Mon 3/4/19	No
392	392	4.38.1	4.15.3.1	3.5.4.14 Conduct Walk-through for Database Configuration Management Plan	2 days	Tue 3/5/19	Wed 3/6/19	No
393	393	4.15.3	4.15.3.1	3.5.4.15 Review Database Configuration Management Plan	10 days	Tue 3/5/19	Mon 3/18/19	No
394	394	4.15.3	4.15.3.1	3.5.4.16 Provide Feedback on Database Configuration Management Plan	0 days	Mon 3/18/19	Mon 3/18/19	No
395	395	4.15.2	4.15.3.1	3.5.4.17 Incorporate Feedback on Database Configuration Management Plan	5 days	Tue 3/19/19	Mon 3/25/19	No
396	396	4.38.2	4.15.3.1	3.5.4.18 Submit Final Version of Database Configuration Management Plan	0 days	Mon 3/25/19	Mon 3/25/19	No
397	397	4.15.3	4.15.3.1	3.5.4.19 Review and Verify Feedback on Database Configuration Management Plan	3 days	Tue 3/26/19	Thu 3/28/19	No
398	398	4.15.1	4.15.3.1	3.5.4.20 Approve Database Configuration Management Plan	0 days	Thu 3/28/19	Thu 3/28/19	No
399	**399**	4.28.1	4.28.3.3	**3.5.5 DELIVERABLE: Environments**	**40 days**	**Tue 8/28/18**	**Tue 10/23/18**	**No**
400	400	4.28.2	4.28.3.3	3.5.5.1 Review Environments Deliverable	30 days	Tue 8/28/18	Tue 10/9/18	No
401	401	4.28.2	4.28.3.3	3.5.5.2 Provide Feedback on Environments Deliverable	0 days	Tue 10/9/18	Tue 10/9/18	Yes
402	402	4.28.2	4.28.3.3	3.5.5.3 Incorporate Feedback on Environments Deliverable	5 days	Wed 10/10/18	Tue 10/16/18	No
403	403	4.28.2	4.28.3.3	3.5.5.4 Submit Final Version of Environments Deliverable	0 days	Tue 10/16/18	Tue 10/16/18	Yes
404	404	4.28.2	4.28.3.3	3.5.5.5 Review and Verify Feedback	5 days	Wed 10/17/18	Tue 10/23/18	No
405	405	4.28.2	4.28.3.3	3.5.5.6 Approve Environments Deliverable	0 days	Tue 10/23/18	Tue 10/23/18	Yes
406	406	4.28.2.5		3.5.6 Update hardware and software list	10 days	Fri 7/6/18	Thu 7/19/18	No
407	**407**	**4.27**	**4.27.3.3**	**3.5.7 DELIVERABLE: Requirements Traceability Matrix**	**62 days**	**Mon 10/8/18**	**Wed 1/9/19**	**No**
408	408	4.27.1	4.27.3.3	3.5.7.1 Develop Deliverable Expectation Document for Requirements Traceability Matrix	10 days	Mon 10/8/18	Fri 10/19/18	No
409	409	4.27.2	4.27.3.3	3.5.7.2 QA Deliverable Expectation Document	3 days	Mon 10/22/18	Wed 10/24/18	No
410	410	4.38.2	4.27.3.3	3.5.7.3 Submit Deliverable Expectation Document for Requirements Traceability Matrix	0 days	Wed 10/24/18	Wed 10/24/18	No
411	411	4.38.1	4.27.3.3	3.5.7.4 Conduct Walk-through for Deliverable Expectation Document for Requirements Traceability Matrix	2 days	Thu 10/25/18	Mon 10/29/18	No
412	412	4.27.3	4.27.3.3	3.5.7.5 Review Deliverable Expectation Document for Requirements Traceability Matrix	5 days	Thu 10/25/18	Thu 11/1/18	No
413	413	4.27.3	4.27.3.3	3.5.7.6 Provide Feedback on Deliverable Expectation Document for Requirements Traceability Matrix	0 days	Thu 11/1/18	Thu 11/1/18	No
414	414	4.27.2	4.27.3.3	3.5.7.7 Incorporate Feedback on Deliverable Expectation Document for Requirements Traceability Matrix	3 days	Fri 11/2/18	Tue 11/6/18	No
415	415	4.38.2	4.27.3.3	3.5.7.8 Submit Final Version of Deliverable Expectation Document for Requirements Traceability Matrix	0 days	Tue 11/6/18	Tue 11/6/18	No
416	416	4.27.3	4.27.3.3	3.5.7.9 Review and Verify Feedback	3 days	Wed 11/7/18	Fri 11/9/18	No
417	417	4.27.3	4.27.3.3	3.5.7.10 Approve Deliverable Expectation Document for Requirements Traceability Matrix	0 days	Fri 11/9/18	Fri 11/9/18	No



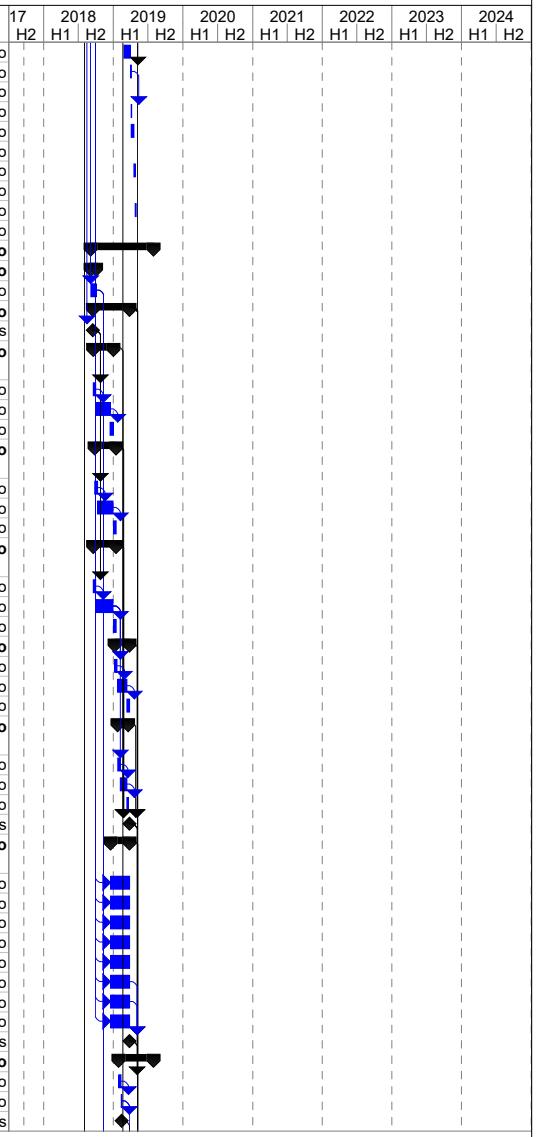
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
418	418	4.27	4.27.3.3	3.5.7.11 Develop Requirements Traceability Matrix	10 days	Tue 11/13/18	Wed 11/28/18	No
419	419	4.27	4.27.3.3	3.5.7.12 QA Deliverable	3 days	Thu 11/29/18	Mon 12/3/18	No
420	420	4.27	4.27.3.3	3.5.7.13 Submit Requirements Traceability Matrix	0 days	Mon 12/3/18	Mon 12/3/18	Yes
421	421	4.27	4.27.3.3	3.5.7.14 Conduct Walk-through for Requirements Traceability Matrix	2 days	Tue 12/4/18	Wed 12/5/18	No
422	422	4.27	4.27.3.3	3.5.7.15 Review Requirements Traceability Matrix	15 days	Thu 12/6/18	Thu 12/27/18	No
423	423	4.27	4.27.3.3	3.5.7.16 Provide Feedback on Requirements Traceability Matrix	0 days	Thu 12/27/18	Thu 12/27/18	Yes
424	424	4.27	4.27.3.3	3.5.7.17 Incorporate Feedback on Requirements Traceability Matrix	5 days	Fri 12/28/18	Fri 1/4/19	No
425	425	4.27	4.27.3.3	3.5.7.18 Submit Final Version of Requirements Traceability Matrix	0 days	Fri 1/4/19	Fri 1/4/19	Yes
426	426	4.27	4.27.3.3	3.5.7.19 Review and Verify Requirements Traceability Matrix	3 days	Mon 1/7/19	Wed 1/9/19	No
427	427	4.27	4.27.3.3	3.5.7.20 Approve Requirements Traceability Matrix	0 days	Wed 1/9/19	Wed 1/9/19	Yes
428	**428**	**4.12**	**4.12.3.1**	**3.5.8 DELIVERABLE: Database Development Plan**	**50 days**	**Mon 11/5/18**	**Fri 1/18/19**	**No**
429	429	4.12.1	4.12.3.1	3.5.8.1 Develop Deliverable Expectation Document for Database Development Plan	5 days	Mon 11/5/18	Fri 11/9/18	No
430	430	4.12.2	4.12.3.1	3.5.8.2 QA Deliverable Expectation Document	3 days	Tue 11/13/18	Thu 11/15/18	No
431	431	4.38.2	4.12.3.1	3.5.8.3 Submit Deliverable Expectation Document for Database Development Plan	0 days	Thu 11/15/18	Thu 11/15/18	No
432	432	4.38.1	4.12.3.1	3.5.8.4 Conduct Walk-through for Deliverable Expectation Document for Database Development Plan	2 days	Fri 11/16/18	Mon 11/19/18	No
433	433	4.12.3	4.12.3.1	3.5.8.5 Review Deliverable Expectation Document for Database Development Plan	5 days	Fri 11/16/18	Mon 11/26/18	No
434	434	4.12.3	4.12.3.1	3.5.8.6 Provide Feedback on Deliverable Expectation Document for Database Development Plan	0 days	Mon 11/26/18	Mon 11/26/18	No
435	435	4.12.2	4.12.3.1	3.5.8.7 Incorporate Feedback on Deliverable Expectation Document for Database Development Plan	3 days	Tue 11/27/18	Thu 11/29/18	No
436	436	4.38.2	4.12.3.1	3.5.8.8 Submit Final Version of Deliverable Expectation Document for Database Development Plan	0 days	Thu 11/29/18	Thu 11/29/18	No
437	437	4.12.3	4.12.3.1	3.5.8.9 Review and Verify Feedback	3 days	Fri 11/30/18	Tue 12/4/18	No
438	438	4.12.3	4.12.3.1	3.5.8.10 Approve Deliverable Expectation Document for Database Development Plan	0 days	Tue 12/4/18	Tue 12/4/18	No
439	439	4.12.1	4.12.3.1	3.5.8.11 Develop Database Development Plan	10 days	Wed 12/5/18	Tue 12/18/18	No
440	440	4.12.2	4.12.3.1	3.5.8.12 QA Deliverable	3 days	Wed 12/19/18	Fri 12/21/18	No
441	441	4.38.2	4.12.3.1	3.5.8.13 Submit Database Development Plan	0 days	Fri 12/21/18	Fri 12/21/18	No
442	442	4.38.1	4.12.3.1	3.5.8.14 Conduct Walk-through for Database Development Plan	2 days	Mon 12/24/18	Wed 12/26/18	No
443	443	4.12.3	4.12.3.1	3.5.8.15 Review Database Development Plan	10 days	Mon 12/24/18	Tue 1/8/19	No
444	444	4.12.3	4.12.3.1	3.5.8.16 Provide Feedback on Database Development Plan	0 days	Tue 1/8/19	Tue 1/8/19	No
445	445	4.12.2	4.12.3.1	3.5.8.17 Incorporate Feedback on Database Development Plan	5 days	Wed 1/9/19	Tue 1/15/19	No
446	446	4.38.2	4.12.3.1	3.5.8.18 Submit Final Version of Database Development Plan	0 days	Tue 1/15/19	Tue 1/15/19	No
447	447	4.12.3	4.12.3.1	3.5.8.19 Review and Verify Feedback on Database Development Plan	3 days	Wed 1/16/19	Fri 1/18/19	No
448	448	4.12.1	4.12.3.1	3.5.8.20 Approve Database Development Plan	0 days	Fri 1/18/19	Fri 1/18/19	No
449	**449**	**4.9**	**4.9.3.1**	**3.5.9 DELIVERABLE: System Capacity Plan**	**76 days**	**Thu 1/10/19**	**Mon 4/29/19**	**No**
450	450	4.9.1	4.9.3.1	3.5.9.1 Develop Deliverable Expectation Document for System Capacity Plan	15 days	Thu 1/10/19	Thu 1/31/19	No
451	451	4.9.2	4.9.3.1	3.5.9.2 QA Deliverable Expectation Document	4 days	Fri 2/1/19	Wed 2/6/19	No
452	452	4.38.2	4.9.3.1	3.5.9.3 Submit Deliverable Expectation Document for System Capacity Plan	0 days	Wed 2/6/19	Wed 2/6/19	No
453	453	4.38.1	4.9.3.1	3.5.9.4 Conduct Walk-through for Deliverable Expectation Document for System Capacity Plan	2 days	Thu 2/7/19	Fri 2/8/19	No
454	454	4.9.3	4.9.3.1	3.5.9.5 Review Deliverable Expectation Document for System Capacity Plan	5 days	Thu 2/7/19	Wed 2/13/19	No
455	455	4.9.3	4.9.3.1	3.5.9.6 Provide Feedback on Deliverable Expectation Document for System Capacity Plan	0 days	Wed 2/13/19	Wed 2/13/19	No
456	456	4.9.2	4.9.3.1	3.5.9.7 Incorporate Feedback on Deliverable Expectation Document for System Capacity Plan	3 days	Thu 2/14/19	Tue 2/19/19	No
457	457	4.38.2	4.9.3.1	3.5.9.8 Submit Final Version of Deliverable Expectation Document for System Capacity Plan	0 days	Tue 2/19/19	Tue 2/19/19	No
458	458	4.9.3	4.9.3.1	3.5.9.9 Review and Verify Feedback	3 days	Wed 2/20/19	Fri 2/22/19	No
459	459	4.9.3	4.9.3.1	3.5.9.10 Approve Deliverable Expectation Document for System Capacity Plan	0 days	Fri 2/22/19	Fri 2/22/19	No
460	**460**	**4.9.1**	**4.9.3.1**	**3.5.9.11 Develop System Capacity Plan**	**25 days**	**Mon 2/25/19**	**Fri 3/29/19**	**No**
461	461	4.9.2	4.9.3.1	3.5.9.11.1 Detail load estimates and performance requirements	25 days	Mon 2/25/19	Fri 3/29/19	No



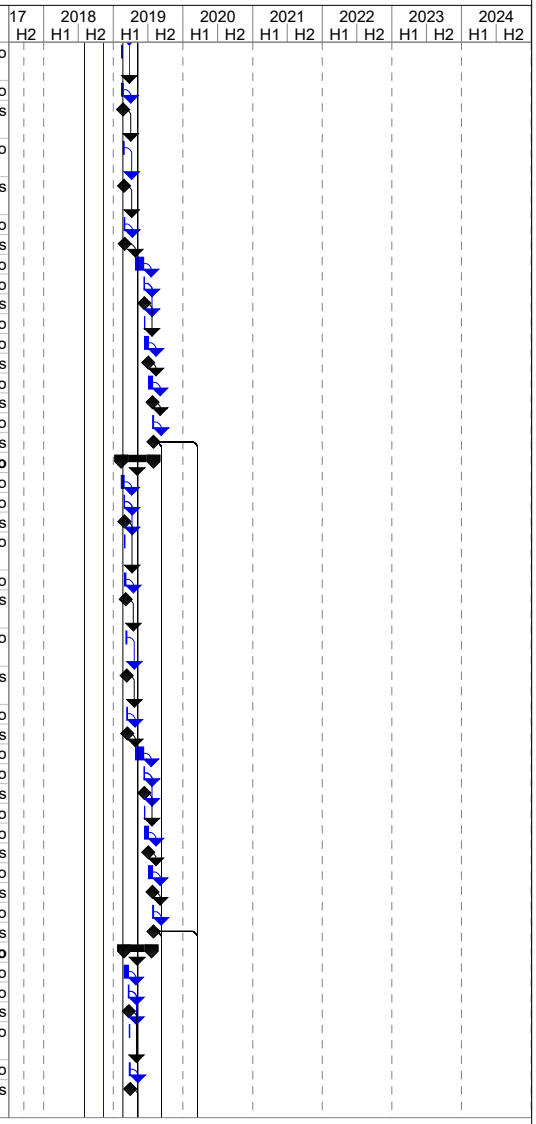
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
462	462	4.9.2	4.9.3.1	3.5.9.11.2 Provide Methodology for Estimate	25 days	Mon 2/25/19	Fri 3/29/19	No
463	463	4.9.2	4.9.3.1	3.5.9.12 QA Deliverable	3 days	Mon 4/1/19	Wed 4/3/19	No
464	464	4.38.2	4.9.3.1	3.5.9.13 Submit System Capacity Plan	0 days	Wed 4/3/19	Wed 4/3/19	No
465	465	4.38.1	4.9.3.1	3.5.9.14 Conduct Walk-through for System Capacity Plan	2 days	Thu 4/4/19	Fri 4/5/19	No
466	466	4.9.3	4.9.3.1	3.5.9.15 Review System Capacity Plan	10 days	Thu 4/4/19	Wed 4/17/19	No
467	467	4.9.3	4.9.3.1	3.5.9.16 Provide Feedback on System Capacity Plan	0 days	Wed 4/17/19	Wed 4/17/19	No
468	468	4.9.2	4.9.3.1	3.5.9.17 Incorporate Feedback on System Capacity Plan	5 days	Thu 4/18/19	Wed 4/24/19	No
469	469	4.38.2	4.9.3.1	3.5.9.18 Submit Final Version of System Capacity Plan	0 days	Wed 4/24/19	Wed 4/24/19	No
470	470	4.9.3	4.9.3.1	3.5.9.19 Review and Verify Feedback on System Capacity Plan	3 days	Thu 4/25/19	Mon 4/29/19	No
471	471	4.9.1	4.9.3.1	3.5.9.20 Approve System Capacity Plan	0 days	Mon 4/29/19	Mon 4/29/19	No
472	**472**	**1.2.1.4**		**3.6 Design**	**225 days**	**Tue 9/4/18**	**Mon 7/29/19**	**No**
473	**473**	**4.29**		**3.6.1 Conversion**	**20 days**	**Tue 9/4/18**	**Mon 10/1/18**	**No**
474	474	4.29		3.6.1.1 Conversion Data Implications	20 days	Tue 9/4/18	Mon 10/1/18	No
475	**475**	**4.27.2.4**		**3.6.2 Joint Application Design Sessions (Functional)**	**128 days**	**Fri 9/14/18**	**Mon 3/25/19**	**No**
476	476	4.27.2.4		3.6.2.1 Joint Application Design Start	0 days	Fri 9/14/18	Fri 9/14/18	Yes
477	**477**	**4.27.2.4**		**3.6.2.2 Group 1 - Case Intake, Self Service & Ease of Use (20 Sessions)**	**71 days**	**Mon 9/17/18**	**Mon 12/31/18**	**No**
478	478	4.27.2.4		3.6.2.2.1 Prepare for Session	10 days	Mon 9/17/18	Fri 9/28/18	No
479	479	4.27.2.4		3.6.2.2.2 Conduct Sessions	50 days	Mon 10/1/18	Thu 12/13/18	No
480	480	4.27.2.4		3.6.2.2.3 Document Sessions	11 days	Fri 12/14/18	Mon 12/31/18	No
481	**481**	**4.27.2.4**		**3.6.2.3 Group 2 - Case Management, Locate, Self & Customer Service (30 Sessions)**	**74 days**	**Tue 9/25/18**	**Mon 1/14/19**	**No**
482	482	4.27.2.4		3.6.2.3.1 Prepare for Session	10 days	Tue 9/25/18	Mon 10/8/18	No
483	483	4.27.2.4		3.6.2.3.2 Conduct Sessions	54 days	Tue 10/9/18	Fri 12/28/18	No
484	484	4.27.2.4		3.6.2.3.3 Document Sessions	10 days	Mon 12/31/18	Mon 1/14/19	No
485	**485**	**4.27.2.4**		**3.6.2.4 Group 3 - Establishment, Interstate & Enforcement (30 Sessions)**	**80 days**	**Mon 9/17/18**	**Mon 1/14/19**	**No**
486	486	4.27.2.4		3.6.2.4.1 Prepare for Session	10 days	Mon 9/17/18	Fri 9/28/18	No
487	487	4.27.2.4		3.6.2.4.2 Conduct Sessions	60 days	Mon 10/1/18	Fri 12/28/18	No
488	488	4.27.2.4		3.6.2.4.3 Document Sessions	10 days	Mon 12/31/18	Mon 1/14/19	No
489	**489**	**4.27.2.4**		**3.6.2.5 Group 4 - Financial Management (30 Sessions)**	**54 days**	**Mon 1/7/19**	**Mon 3/25/19**	**No**
490	490	4.27.2.4		3.6.2.5.1 Prepare for Session	10 days	Mon 1/7/19	Fri 1/18/19	No
491	491	4.27.2.4		3.6.2.5.2 Conduct Sessions	34 days	Tue 1/22/19	Mon 3/11/19	No
492	492	4.27.2.4		3.6.2.5.3 Document Sessions	10 days	Tue 3/12/19	Mon 3/25/19	No
493	**493**	**4.27.2.4**		**3.6.2.6 Group 5 - Reporting/Data Warehouse & Integration (20 Sessions)**	**38 days**	**Wed 1/23/19**	**Mon 3/18/19**	**No**
494	494	4.27.2.4		3.6.2.6.1 Prepare for Session	10 days	Wed 1/23/19	Tue 2/5/19	No
495	495	4.27.2.4		3.6.2.6.2 Conduct Sessions	23 days	Wed 2/6/19	Mon 3/11/19	No
496	496	4.27.2.4		3.6.2.6.3 Document Sessions	5 days	Tue 3/12/19	Mon 3/18/19	No
497	497	4.27.2.4		3.6.2.7 JADs Complete	0 days	Mon 3/25/19	Mon 3/25/19	Yes
498	**498**	**4.27.2.5**		**3.6.2.8 Technical Joint Application Design Sessions (25 Technical Sessions)**	**67 days**	**Mon 12/17/18**	**Mon 3/25/19**	**No**
499	499	4.27.2.5		3.6.2.8.1 Core Architecture	67 days	Mon 12/17/18	Mon 3/25/19	No
500	500	4.27.2.5		3.6.2.8.2 Database	67 days	Mon 12/17/18	Mon 3/25/19	No
501	501	4.27.2.5		3.6.2.8.3 Security	67 days	Mon 12/17/18	Mon 3/25/19	No
502	502	4.27.2.5		3.6.2.8.4 Interface	67 days	Mon 12/17/18	Mon 3/25/19	No
503	503	4.27.2.5		3.6.2.8.5 User Interface	67 days	Mon 12/17/18	Mon 3/25/19	No
504	504	4.27.2.5		3.6.2.8.6 Integration Design Sessions	67 days	Mon 12/17/18	Mon 3/25/19	No
505	505	4.27.2.5		3.6.2.8.7 Data Conversion Designs	67 days	Mon 12/17/18	Mon 3/25/19	No
506	506	4.27.2.5		3.6.2.8.8 Technical Sessions	67 days	Mon 12/17/18	Mon 3/25/19	No
507	507	4.27.2.5		3.6.2.8.9 Sessions Complete	0 days	Mon 3/25/19	Mon 3/25/19	Yes
508	**508**	**4.27**	**4.27.3.4**	**3.6.3 DELIVERABLE: Functional Design**	**128 days**	**Mon 1/28/19**	**Mon 7/29/19**	**No**
509	509	4.27.1	4.27.3.4	3.6.3.1 Develop Deliverable Expectation Document for Functional Design	10 days	Mon 1/28/19	Fri 2/8/19	No
510	510	4.27.2	4.27.3.4	3.6.3.2 QA Deliverable Expectation Document	2 days	Mon 2/11/19	Tue 2/12/19	No
511	511	4.38.2	4.27.3.4	3.6.3.3 Submit Deliverable Expectation Document for Functional Design	0 days	Tue 2/12/19	Tue 2/12/19	Yes



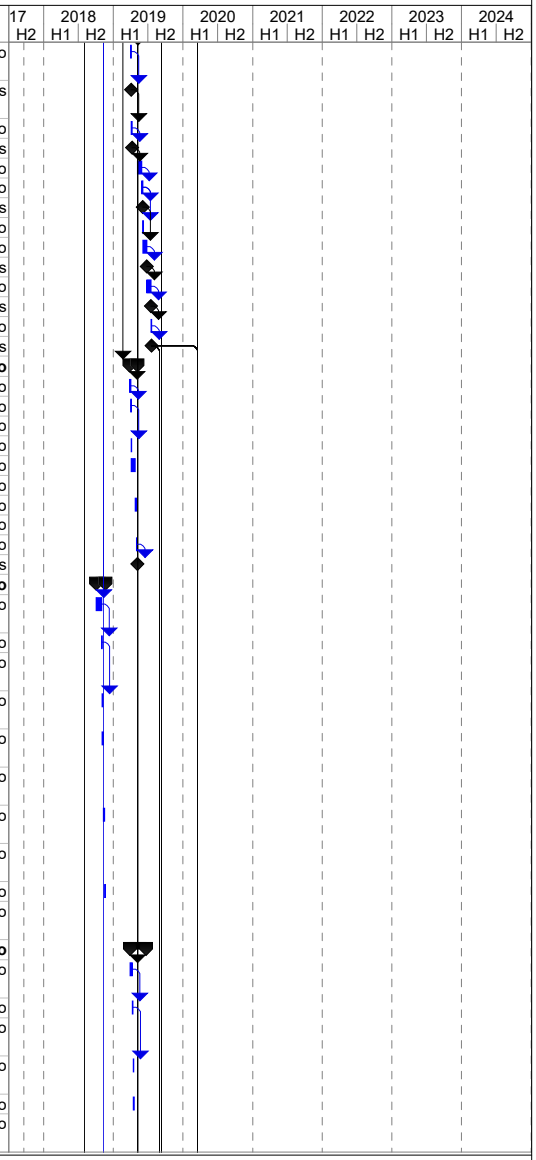
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
512	512	4.38.1	4.27.3.4	3.6.3.4 Conduct Walk-through for Deliverable Expectation Document for Functional Design	2 days	Wed 2/13/19	Thu 2/14/19	No
513	513	4.27.3	4.27.3.4	3.6.3.5 Review Deliverable Expectation Document for Functional Design	5 days	Wed 2/13/19	Wed 2/20/19	No
514	514	4.27.3	4.27.3.4	3.6.3.6 Provide Feedback on Deliverable Expectation Document for Functional Design	0 days	Wed 2/20/19	Wed 2/20/19	Yes
515	515	4.27.2	4.27.3.4	3.6.3.7 Incorporate Feedback on Deliverable Expectation Document for Functional Design	3 days	Thu 2/21/19	Mon 2/25/19	No
516	516	4.38.2	4.27.3.4	3.6.3.8 Submit Final Version of Deliverable Expectation Document for Functional Design	0 days	Mon 2/25/19	Mon 2/25/19	Yes
517	517	4.27.3	4.27.3.4	3.6.3.9 Review and Verify Feedback	3 days	Tue 2/26/19	Thu 2/28/19	No
518	518	4.27.3	4.27.3.4	3.6.3.10 Approve Deliverable Expectation Document for Functional Design	0 days	Thu 2/28/19	Thu 2/28/19	Yes
519	519	4.27.1	4.27.3.4	3.6.3.11 Develop Functional Design	30 days	Fri 4/26/19	Fri 6/7/19	No
520	520	4.27.2	4.27.3.4	3.6.3.12 QA Deliverable	2 days	Mon 6/10/19	Tue 6/11/19	No
521	521	4.38.2	4.27.3.4	3.6.3.13 Submit Functional Design	0 days	Tue 6/11/19	Tue 6/11/19	Yes
522	522	4.38.1	4.27.3.4	3.6.3.14 Conduct Walk-through for Functional Design	2 days	Wed 6/12/19	Thu 6/13/19	No
523	523	4.27.3	4.27.3.4	3.6.3.15 Review Functional Design	15 days	Wed 6/12/19	Tue 7/2/19	No
524	524	4.27.3	4.27.3.4	3.6.3.16 Provide Feedback on Functional Design	0 days	Tue 7/2/19	Tue 7/2/19	Yes
525	525	4.27.2	4.27.3.4	3.6.3.17 Incorporate Feedback on Functional Design	15 days	Wed 7/3/19	Wed 7/24/19	No
526	526	4.38.2	4.27.3.4	3.6.3.18 Submit Final Version of Functional Design	0 days	Wed 7/24/19	Wed 7/24/19	Yes
527	527	4.27.3	4.27.3.4	3.6.3.19 Review and Verify Functional Design	3 days	Thu 7/25/19	Mon 7/29/19	No
528	528	4.27.1	4.27.3.4	3.6.3.20 Approve Functional Design	0 days	Mon 7/29/19	Mon 7/29/19	Yes
529	**529**	**4.27**	**4.27.3.5**	**3.6.4 DELIVERABLE: Technical Design**	**118 days**	**Mon 2/11/19**	**Mon 7/29/19**	**No**
530	530	4.27.1	4.27.3.5	3.6.4.1 Develop Deliverable Expectation Document for Technical Design	10 days	Mon 2/11/19	Mon 2/25/19	No
531	531	4.27.2	4.27.3.5	3.6.4.2 QA Deliverable Expectation Document	2 days	Tue 2/26/19	Wed 2/27/19	No
532	532	4.38.2	4.27.3.5	3.6.4.3 Submit Deliverable Expectation Document for Technical Design	0 days	Wed 2/27/19	Wed 2/27/19	Yes
533	533	4.38.1	4.27.3.5	3.6.4.4 Conduct Walk-through for Deliverable Expectation Document for Technical Design	2 days	Thu 2/28/19	Fri 3/1/19	No
534	534	4.27.3	4.27.3.5	3.6.4.5 Review Deliverable Expectation Document for Technical Design	5 days	Thu 2/28/19	Wed 3/6/19	No
535	535	4.27.3	4.27.3.5	3.6.4.6 Provide Feedback on Deliverable Expectation Document for Technical Design	0 days	Wed 3/6/19	Wed 3/6/19	Yes
536	536	4.27.2	4.27.3.5	3.6.4.7 Incorporate Feedback on Deliverable Expectation Document for Technical Design	3 days	Thu 3/7/19	Mon 3/11/19	No
537	537	4.38.2	4.27.3.5	3.6.4.8 Submit Final Version of Deliverable Expectation Document for Technical Design	0 days	Mon 3/11/19	Mon 3/11/19	Yes
538	538	4.27.3	4.27.3.5	3.6.4.9 Review and Verify Feedback	3 days	Tue 3/12/19	Thu 3/14/19	No
539	539	4.27.3	4.27.3.5	3.6.4.10 Approve Deliverable Expectation Document for Technical Design	0 days	Thu 3/14/19	Thu 3/14/19	Yes
540	540	4.27.1	4.27.3.5	3.6.4.11 Develop Technical Design	30 days	Fri 4/26/19	Fri 6/7/19	No
541	541	4.27.2	4.27.3.5	3.6.4.12 QA Deliverable	2 days	Mon 6/10/19	Tue 6/11/19	No
542	542	4.38.2	4.27.3.5	3.6.4.13 Submit Technical Design	0 days	Tue 6/11/19	Tue 6/11/19	Yes
543	543	4.38.1	4.27.3.5	3.6.4.14 Conduct Walk-through for Technical Design	2 days	Wed 6/12/19	Thu 6/13/19	No
544	544	4.27.3	4.27.3.5	3.6.4.15 Review Technical Design	15 days	Wed 6/12/19	Tue 7/2/19	No
545	545	4.27.3	4.27.3.5	3.6.4.16 Provide Feedback on Technical Design	0 days	Tue 7/2/19	Tue 7/2/19	Yes
546	546	4.27.2	4.27.3.5	3.6.4.17 Incorporate Feedback on Technical Design	15 days	Wed 7/3/19	Wed 7/24/19	No
547	547	4.38.2	4.27.3.5	3.6.4.18 Submit Final Version of Technical Design	0 days	Wed 7/24/19	Wed 7/24/19	Yes
548	548	4.27.3	4.27.3.5	3.6.4.19 Review and Verify Technical Design	3 days	Thu 7/25/19	Mon 7/29/19	No
549	549	4.27.1	4.27.3.5	3.6.4.20 Approve Technical Design	0 days	Mon 7/29/19	Mon 7/29/19	Yes
550	**550**	**4.27**	**4.27.3.6**	**3.6.5 DELIVERABLE: Detailed Requirements**	**102 days**	**Tue 2/26/19**	**Fri 7/19/19**	**No**
551	551	4.27.1	4.27.3.6	3.6.5.1 Develop Deliverable Expectation Document for Technical Design	15 days	Tue 2/26/19	Mon 3/18/19	No
552	552	4.27.2	4.27.3.6	3.6.5.2 QA Deliverable Expectation Document	4 days	Tue 3/19/19	Fri 3/22/19	No
553	553	4.38.2	4.27.3.6	3.6.5.3 Submit Deliverable Expectation Document for Technical Design	0 days	Fri 3/22/19	Fri 3/22/19	Yes
554	554	4.38.1	4.27.3.6	3.6.5.4 Conduct Walk-through for Deliverable Expectation Document for Technical Design	2 days	Mon 3/25/19	Tue 3/26/19	No
555	555	4.27.3	4.27.3.6	3.6.5.5 Review Deliverable Expectation Document for Technical Design	5 days	Mon 3/25/19	Fri 3/29/19	No
556	556	4.27.3	4.27.3.6	3.6.5.6 Provide Feedback on Deliverable Expectation Document for Technical Design	0 days	Fri 3/29/19	Fri 3/29/19	Yes



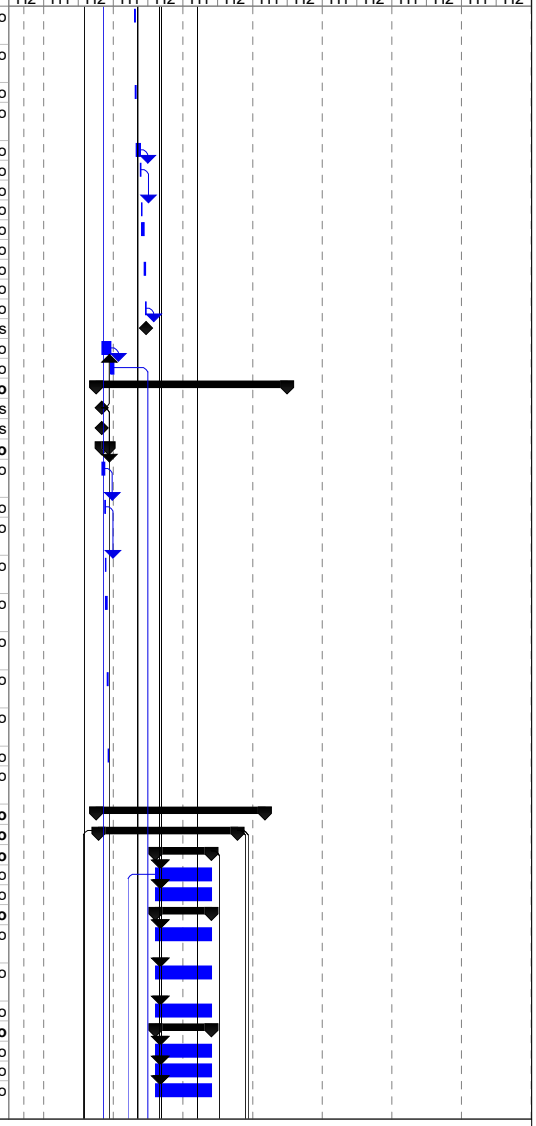
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
557	557	4.27.2	4.27.3.6	3.6.5.7 Incorporate Feedback on Deliverable Expectation Document for Technical Design	3 days	Mon 4/1/19	Wed 4/3/19	No
558	558	4.38.2	4.27.3.6	3.6.5.8 Submit Final Version of Deliverable Expectation Document for Technical Design	0 days	Wed 4/3/19	Wed 4/3/19	Yes
559	559	4.27.3	4.27.3.6	3.6.5.9 Review and Verify Feedback	3 days	Thu 4/4/19	Mon 4/8/19	No
560	560	4.27.3	4.27.3.6	3.6.5.10 Approve Deliverable Expectation Document for Technical Design	0 days	Mon 4/8/19	Mon 4/8/19	Yes
561	561	4.27.1	4.27.3.6	3.6.5.11 Develop Technical Design	15 days	Tue 5/7/19	Tue 5/28/19	No
562	562	4.27.2	4.27.3.6	3.6.5.12 QA Deliverable	4 days	Wed 5/29/19	Mon 6/3/19	No
563	563	4.38.2	4.27.3.6	3.6.5.13 Submit Technical Design	0 days	Mon 6/3/19	Mon 6/3/19	Yes
564	564	4.38.1	4.27.3.6	3.6.5.14 Conduct Walk-through for Technical Design	2 days	Tue 6/4/19	Wed 6/5/19	No
565	565	4.27.3	4.27.3.6	3.6.5.15 Review Technical Design	15 days	Tue 6/4/19	Mon 6/24/19	No
566	566	4.27.3	4.27.3.6	3.6.5.16 Provide Feedback on Technical Design	0 days	Mon 6/24/19	Mon 6/24/19	Yes
567	567	4.27.2	4.27.3.6	3.6.5.17 Incorporate Feedback on Technical Design	15 days	Tue 6/25/19	Tue 7/16/19	No
568	568	4.38.2	4.27.3.6	3.6.5.18 Submit Final Version of Technical Design	0 days	Tue 7/16/19	Tue 7/16/19	Yes
569	569	4.27.3	4.27.3.6	3.6.5.19 Review and Verify Technical Design	3 days	Wed 7/17/19	Fri 7/19/19	No
570	570	4.27.1	4.27.3.6	3.6.5.20 Approve Technical Design	0 days	Fri 7/19/19	Fri 7/19/19	Yes
571	**571**	**4.27**	**4.27.3.2**	**3.6.6 DELIVERABLE: Conduct JAD Sessions Deliverable**	**30 days**	**Tue 3/26/19**	**Mon 5/6/19**	**No**
572	572	4.27.1	4.27.3.2	3.6.6.1 Develop Conduct JAD Sessions Deliverable	5 days	Tue 3/26/19	Mon 4/1/19	No
573	573	4.27.2	4.27.3.2	3.6.6.2 QA Deliverable	2 days	Tue 4/2/19	Wed 4/3/19	No
574	574	4.38.2	4.27.3.2	3.6.6.3 Submit Conduct JAD Sessions Deliverable	0 days	Wed 4/3/19	Wed 4/3/19	No
575	575	4.38.1	4.27.3.2	3.6.6.4 Conduct Walk-through for Conduct JAD Sessions Deliverable	2 days	Thu 4/4/19	Fri 4/5/19	No
576	576	4.27.3	4.27.3.2	3.6.6.5 Review Conduct JAD Sessions Deliverable	15 days	Thu 4/4/19	Wed 4/24/19	No
577	577	4.27.3	4.27.3.2	3.6.6.6 Provide Feedback on JAD Sessions Deliverable	0 days	Wed 4/24/19	Wed 4/24/19	No
578	578	4.27.2	4.27.3.2	3.6.6.7 Incorporate Feedback on Conduct JAD Sessions Deliverable	5 days	Thu 4/25/19	Wed 5/1/19	No
579	579	4.38.2	4.27.3.2	3.6.6.8 Submit Final Version of Conduct JAD Sessions Deliverable	0 days	Wed 5/1/19	Wed 5/1/19	No
580	580	4.27.3	4.27.3.2	3.6.6.9 Review and Verify Conduct JAD Sessions Deliverable	3 days	Thu 5/2/19	Mon 5/6/19	No
581	581	4.27.1	4.27.3.2	3.6.6.10 Approve Conduct JAD Sessions Deliverable	0 days	Mon 5/6/19	Mon 5/6/19	Yes
582	**582**	**4.29**	**4.29.3.2**	**3.6.7 DELIVERABLE: Conversion and Testing Plan**	**33 days**	**Tue 10/2/18**	**Mon 11/19/18**	**No**
583	583	4.29.1	4.29.3.2	3.6.7.1 Develop Deliverable Expectation Document for Conversion and Testing Plan	20 days	Tue 10/2/18	Tue 10/30/18	No
584	584	4.29.2	4.29.3.2	3.6.7.2 QA Deliverable Expectation Document	2 days	Wed 10/31/18	Thu 11/1/18	No
585	585	4.38.2	4.29.3.2	3.6.7.3 Submit Deliverable Expectation Document for Conversion and Testing Plan	0 days	Thu 11/1/18	Thu 11/1/18	No
586	586	4.38.1	4.29.3.2	3.6.7.4 Conduct Walk-through for Deliverable Expectation Document for Conversion and Testing Plan	2 days	Fri 11/2/18	Mon 11/5/18	No
587	587	4.29.3	4.29.3.2	3.6.7.5 Review Deliverable Expectation Document for Conversion and Testing Plan	5 days	Fri 11/2/18	Thu 11/8/18	No
588	588	4.29.3	4.29.3.2	3.6.7.6 Provide Feedback on Deliverable Expectation Document for Conversion and Testing Plan	0 days	Thu 11/8/18	Thu 11/8/18	No
589	589	4.29.2	4.29.3.2	3.6.7.7 Incorporate Feedback on Deliverable Expectation Document for Conversion and Testing Plan	3 days	Fri 11/9/18	Wed 11/14/18	No
590	590	4.38.2	4.29.3.2	3.6.7.8 Submit Final Version of Deliverable Expectation Document for Conversion and Testing Plan	0 days	Wed 11/14/18	Wed 11/14/18	No
591	591	4.29.3	4.29.3.2	3.6.7.9 Review and Verify Feedback	3 days	Thu 11/15/18	Mon 11/19/18	No
592	592	4.29.3	4.29.3.2	3.6.7.10 Approve Deliverable Expectation Document for Conversion and Testing Plan	0 days	Mon 11/19/18	Mon 11/19/18	No
593	**593**	**4.22**	**4.22.3.1**	**3.6.8 DELIVERABLE: Security Management Plan**	**59 days**	**Fri 3/29/19**	**Thu 6/20/19**	**No**
594	594	4.22.1	4.22.3.1	3.6.8.1 Develop Deliverable Expectation Document for Security Management Plan	8 days	Fri 3/29/19	Tue 4/9/19	No
595	595	4.22.2	4.22.3.1	3.6.8.2 QA Deliverable Expectation Document	3 days	Wed 4/10/19	Fri 4/12/19	No
596	596	4.38.2	4.22.3.1	3.6.8.3 Submit Deliverable Expectation Document for Security Management Plan	0 days	Fri 4/12/19	Fri 4/12/19	No
597	597	4.38.1	4.22.3.1	3.6.8.4 Conduct Walk-through for Deliverable Expectation Document for Security Management Plan	2 days	Mon 4/15/19	Tue 4/16/19	No
598	598	4.22.3	4.22.3.1	3.6.8.5 Review Deliverable Expectation Document for Security Management P	5 days	Mon 4/15/19	Fri 4/19/19	No
599	599	4.22.3	4.22.3.1	3.6.8.6 Provide Feedback on Deliverable Expectation Document for Security Management Plan	0 days	Fri 4/19/19	Fri 4/19/19	No



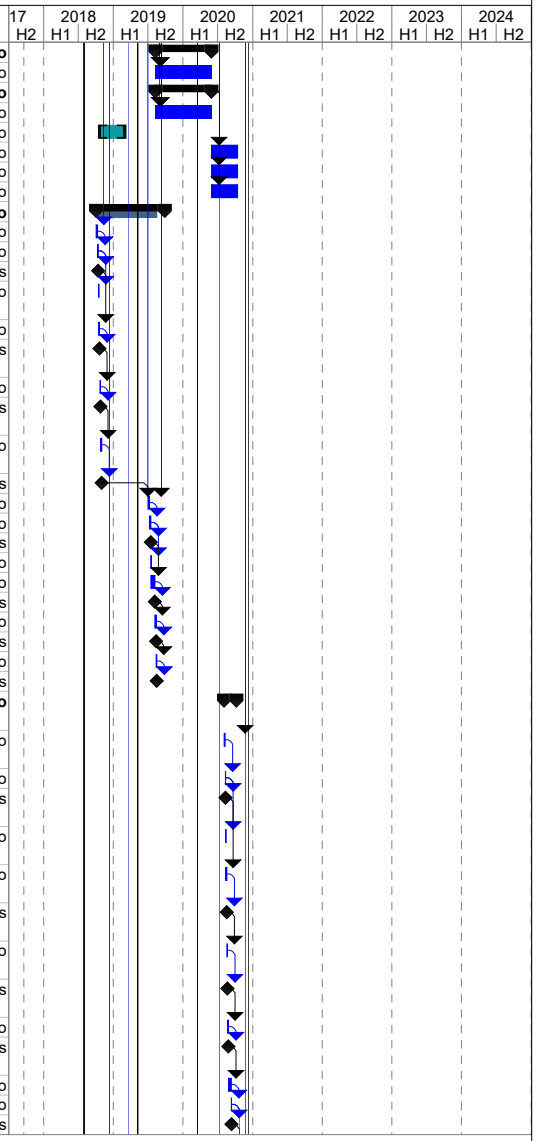
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
600	600	4.22.2	4.22.3.1	3.6.8.7 Incorporate Feedback on Deliverable Expectation Document for Security Management Plan	3 days	Mon 4/22/19	Wed 4/24/19	No
601	601	4.38.2	4.22.3.1	3.6.8.8 Submit Final Version of Deliverable Expectation Document for Security Management Plan	0 days	Wed 4/24/19	Wed 4/24/19	No
602	602	4.22.3	4.22.3.1	3.6.8.9 Review and Verify Feedback	3 days	Thu 4/25/19	Mon 4/29/19	No
603	603	4.22.3	4.22.3.1	3.6.8.10 Approve Deliverable Expectation Document for Security Management Plan	0 days	Mon 4/29/19	Mon 4/29/19	No
604	604	4.22.1	4.22.3.1	3.6.8.11 Develop Security Management Plan	15 days	Tue 4/30/19	Mon 5/20/19	No
605	605	4.22.2	4.22.3.1	3.6.8.12 QA Deliverable	4 days	Tue 5/21/19	Fri 5/24/19	No
606	606	4.38.2	4.22.3.1	3.6.8.13 Submit Security Management Plan	0 days	Fri 5/24/19	Fri 5/24/19	No
607	607	4.38.1	4.22.3.1	3.6.8.14 Conduct Walk-through for Security Management Plan	2 days	Tue 5/28/19	Wed 5/29/19	No
608	608	4.22.3	4.22.3.1	3.6.8.15 Review Security Management Plan	10 days	Tue 5/28/19	Mon 6/10/19	No
609	609	4.22.3	4.22.3.1	3.6.8.16 Provide Feedback on Security Management Plan	0 days	Mon 6/10/19	Mon 6/10/19	No
610	610	4.22.2	4.22.3.1	3.6.8.17 Incorporate Feedback on Security Management Plan	5 days	Tue 6/11/19	Mon 6/17/19	No
611	611	4.38.2	4.22.3.1	3.6.8.18 Submit Final Version of Security Management Plan	0 days	Mon 6/17/19	Mon 6/17/19	No
612	612	4.22.3	4.22.3.1	3.6.8.19 Review and Verify Feedback on Security Management Plan	3 days	Tue 6/18/19	Thu 6/20/19	No
613	613	4.22.1	4.22.3.1	3.6.8.20 Approve Security Management Plan	0 days	Thu 6/20/19	Thu 6/20/19	Yes
614	614	4.28.2.5		3.7 Set Up, Deliver and Deploy Development Environment	30 days	Thu 11/1/18	Mon 12/17/18	No
615	615	4.28.2.5		3.8 Update hardware and software list	10 days	Tue 12/18/18	Wed 1/2/19	No
616	**616**	**1.2.1.4**		**4 Construction**	**684 days**	**Tue 10/2/18**	**Tue 6/29/21**	**No**
617	617	**1.2.1.4**		4.1 Construction Phase Start	0 days	Thu 11/1/18	Thu 11/1/18	Yes
618	618	**1.2.1.4**		4.2 Execution Deliverables from the Elaboration Phase	0 days	Thu 11/1/18	Thu 11/1/18	Yes
619	**619**	**4.29**	**4.29.3.3**	**4.3 DELIVERABLE: Conversion and Testing Report (DED)**	**23 days**	**Thu 11/1/18**	**Thu 12/6/18**	**No**
620	620	4.29.1	4.29.3.3	4.3.1 Develop Deliverable Expectation Document for Conversion and Testing Report	10 days	Thu 11/1/18	Thu 11/15/18	No
621	621	4.29.2	4.29.3.3	4.3.2 QA Deliverable Expectation Document	2 days	Fri 11/16/18	Mon 11/19/18	No
622	622	4.38.2	4.29.3.3	4.3.3 Submit Deliverable Expectation Document for Conversion and Testing Report	0 days	Mon 11/19/18	Mon 11/19/18	No
623	623	4.38.1	4.29.3.3	4.3.4 Conduct Walk-through for Deliverable Expectation Document for Conversion and Testing Report	2 days	Tue 11/20/18	Wed 11/21/18	No
624	624	4.29.3	4.29.3.3	4.3.5 Review Deliverable Expectation Document for Conversion and Testing Report	5 days	Tue 11/20/18	Wed 11/28/18	No
625	625	4.29.3	4.29.3.3	4.3.6 Provide Feedback on Deliverable Expectation Document for Conversion and Testing Report	0 days	Wed 11/28/18	Wed 11/28/18	No
626	626	4.29.2	4.29.3.3	4.3.7 Incorporate Feedback on Deliverable Expectation Document for Conversion and Testing Report	3 days	Thu 11/29/18	Mon 12/3/18	No
627	627	4.38.2	4.29.3.3	4.3.8 Submit Final Version of Deliverable Expectation Document for Conversion and Testing Report	0 days	Mon 12/3/18	Mon 12/3/18	No
628	628	4.29.3	4.29.3.3	4.3.9 Review and Verify Feedback	3 days	Tue 12/4/18	Thu 12/6/18	No
629	629	4.29.3	4.29.3.3	4.3.10 Approve Deliverable Expectation Document for Conversion and Testing Report	0 days	Thu 12/6/18	Thu 12/6/18	No
630	**630**	**1.2.1.4**		**4.4 Development**	**604 days**	**Tue 10/2/18**	**Fri 3/5/21**	**No**
631	**631**	**4.26**		**4.4.1 Develop / Modify / Configure and Unit Test Solution Components**	**499 days**	**Mon 10/15/18**	**Mon 10/12/20**	**No**
632	**632**	**4.26**		**4.4.1.1 Group 1**	**200 days**	**Fri 8/9/19**	**Thu 5/28/20**	**No**
633	633	4.26		4.4.1.1.1 Develop / Modify / Configure and Unit Test of Case Intake	200 days	Fri 8/9/19	Thu 5/28/20	No
634	634	4.26		4.4.1.1.2 Develop / Modify / Configure and Unit Test of Self Service	200 days	Fri 8/9/19	Thu 5/28/20	No
635	**635**	**4.26**		**4.4.1.2 Group 2**	**200 days**	**Fri 8/9/19**	**Thu 5/28/20**	**No**
636	636	4.26		4.4.1.2.1 Develop / Modify / Configure and Unit Test of Case Management	200 days	Fri 8/9/19	Thu 5/28/20	No
637	637	4.26		4.4.1.2.2 Develop / Modify / Configure and Unit Test of Customer Service Documents	200 days	Fri 8/9/19	Thu 5/28/20	No
638	638	4.26		4.4.1.2.3 Develop / Modify / Configure and Unit Test of Locate	200 days	Fri 8/9/19	Thu 5/28/20	No
639	**639**	**4.26**		**4.4.1.3 Group 3**	**200 days**	**Fri 8/9/19**	**Thu 5/28/20**	**No**
640	640	4.26		4.4.1.3.1 Develop / Modify / Configure and Unit Test of Establishment	200 days	Fri 8/9/19	Thu 5/28/20	No
641	641	4.26		4.4.1.3.2 Develop / Modify / Configure and Unit Test of Interstate	200 days	Fri 8/9/19	Thu 5/28/20	No
642	642	4.26		4.4.1.3.3 Develop / Modify / Configure and Unit Test of Financial Management	200 days	Fri 8/9/19	Thu 5/28/20	No



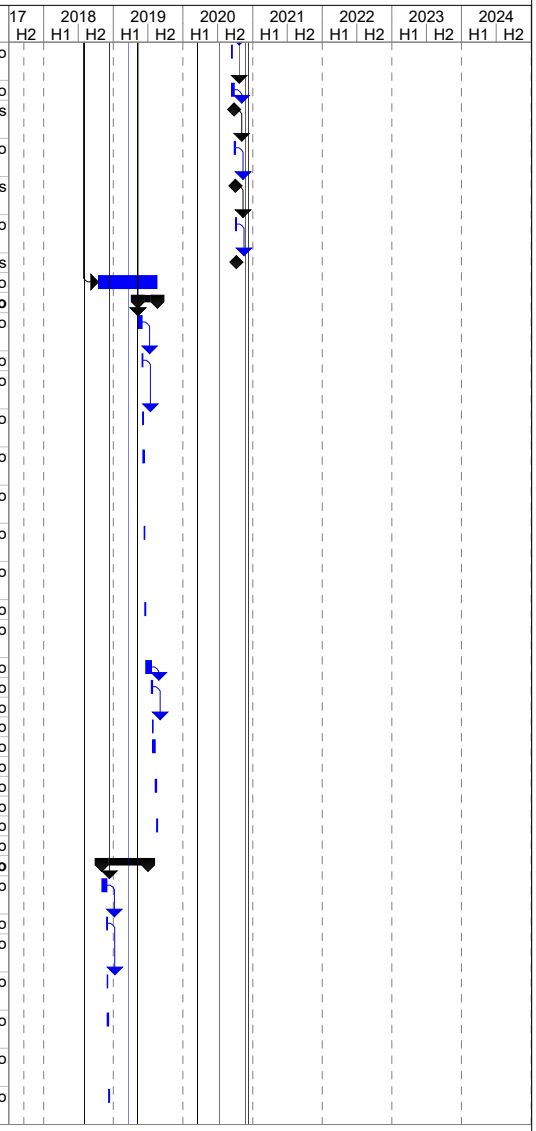
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
643	**643**	**4.26**		**4.4.1.4 Group 4**	**200 days**	**Fri 8/9/19**	**Thu 5/28/20**	**No**
644	644	4.26		4.4.1.4.1 Develop / Modify / Configure and Unit Test of Enforcement	200 days	Fri 8/9/19	Thu 5/28/20	No
645	**645**	**4.26**		**4.4.1.5 Group 5**	**200 days**	**Fri 8/9/19**	**Thu 5/28/20**	**No**
646	646	4.26		4.4.1.5.1 Develop / Modify / Configure and Unit Test of Reporting	200 days	Fri 8/9/19	Thu 5/28/20	No
647	647	4.26		4.4.1.6 Develop / Modify / Configure and Unit Test of Ease of Use Documents	95 days	Mon 10/15/18	Wed 3/6/19	No
648	648	4.26		4.4.1.7 Develop / Modify / Configure and Unit Test Integration Components	95 days	Fri 5/29/20	Mon 10/12/20	No
649	649	4.26		4.4.1.8 Develop / Modify / Configure and Unit Test of Interface Components	95 days	Fri 5/29/20	Mon 10/12/20	No
650	650	4.26		4.4.1.9 Develop / Modify / Configure and Unit Test of Batch Components	95 days	Fri 5/29/20	Mon 10/12/20	No
651	**651**	**4.30**	**4.30.3.3**	**4.4.2 DELIVERABLE: Test Plans**	**247 days**	**Tue 10/2/18**	**Thu 9/26/19**	**No**
652	652	4.30.1	4.30.3.3	4.4.2.1 Develop Deliverable Expectation Document for Test Plans	5 days	Tue 10/2/18	Mon 10/8/18	No
653	653	4.30.2	4.30.3.3	4.4.2.2 QA Deliverable Expectation Document	4 days	Tue 10/9/18	Fri 10/12/18	No
654	654	4.38.2	4.30.3.3	4.4.2.3 Submit Deliverable Expectation Document for Test Plans	0 days	Fri 10/12/18	Fri 10/12/18	Yes
655	655	4.38.1	4.30.3.3	4.4.2.4 Conduct Walk-through for Deliverable Expectation Document for Test Plans	2 days	Mon 10/15/18	Tue 10/16/18	No
656	656	4.30.3	4.30.3.3	4.4.2.5 Review Deliverable Expectation Document for Test Plans	5 days	Mon 10/15/18	Fri 10/19/18	No
657	657	4.30.3	4.30.3.3	4.4.2.6 Provide Feedback on Deliverable Expectation Document for Test Plans	0 days	Fri 10/19/18	Fri 10/19/18	Yes
658	658	4.30.2	4.30.3.3	4.4.2.7 Incorporate Feedback on Deliverable Expectation Document for Test F	3 days	Mon 10/22/18	Wed 10/24/18	No
659	659	4.38.2	4.30.3.3	4.4.2.8 Submit Final Version of Deliverable Expectation Document for Test Plans	0 days	Wed 10/24/18	Wed 10/24/18	Yes
660	660	4.30.3	4.30.3.3	4.4.2.9 Review and Verify Feedback	3 days	Thu 10/25/18	Tue 10/30/18	No
661	661	4.30.3	4.30.3.3	4.4.2.10 Approve Deliverable Expectation Document for Test Plans	0 days	Tue 10/30/18	Tue 10/30/18	Yes
662	662	4.30.1	4.30.3.3	4.4.2.11 Develop Test Plans	5 days	Mon 7/1/19	Mon 7/8/19	No
663	663	4.30.2	4.30.3.3	4.4.2.12 QA Deliverable	5 days	Tue 7/9/19	Mon 7/15/19	No
664	664	4.38.2	4.30.3.3	4.4.2.13 Submit Test Plans	0 days	Mon 7/15/19	Mon 7/15/19	Yes
665	665	4.38.1	4.30.3.3	4.4.2.14 Conduct Walk-through for Test Plans	2 days	Tue 7/16/19	Wed 7/17/19	No
666	666	4.30.3	4.30.3.3	4.4.2.15 Review Test Plans	15 days	Tue 7/16/19	Mon 8/5/19	No
667	667	4.30.3	4.30.3.3	4.4.2.16 Provide Feedback on Test Plans	0 days	Mon 8/5/19	Mon 8/5/19	Yes
668	668	4.30.2	4.30.3.3	4.4.2.17 Incorporate Feedback on Test Plans	5 days	Tue 8/6/19	Mon 8/12/19	No
669	669	4.38.2	4.30.3.3	4.4.2.18 Submit Final Version of Test Plans	0 days	Mon 8/12/19	Mon 8/12/19	Yes
670	670	4.30.3	4.30.3.3	4.4.2.19 Review and Verify Test Plans	3 days	Tue 8/13/19	Thu 8/15/19	No
671	671	4.30.1	4.30.3.3	4.4.2.20 Approve Test Plans	0 days	Thu 8/15/19	Thu 8/15/19	Yes
672	**672**	**4.12**	**4.12.3.2**	**4.4.3 DELIVERABLE: Successful Execution of the Database Development Plan**	**46 days**	**Mon 8/3/20**	**Tue 10/6/20**	**No**
673	673	4.12.1	4.12.3.2	4.4.3.1 Develop Deliverable Expectation Document for Successful Execution of Database Development Plan	5 days	Mon 8/3/20	Fri 8/7/20	No
674	674	4.12.2	4.12.3.2	4.4.3.2 QA Deliverable Expectation Document	1 day	Mon 8/10/20	Mon 8/10/20	No
675	675	4.38.2	4.12.3.2	4.4.3.3 Submit Deliverable Expectation Document for Successful Execution of Database Development Plan	0 days	Mon 8/10/20	Mon 8/10/20	Yes
676	676	4.38.1	4.12.3.2	4.4.3.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Database Development Plan	2 days	Tue 8/11/20	Wed 8/12/20	No
677	677	4.12.3	4.12.3.2	4.4.3.5 Review Deliverable Expectation Document for Successful Execution of Database Development Plan	5 days	Tue 8/11/20	Mon 8/17/20	No
678	678	4.12.3	4.12.3.2	4.4.3.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Database Development Plan	0 days	Mon 8/17/20	Mon 8/17/20	Yes
679	679	4.12.2	4.12.3.2	4.4.3.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Database Development Plan	3 days	Tue 8/18/20	Thu 8/20/20	No
680	680	4.38.2	4.12.3.2	4.4.3.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Database Development Plan	0 days	Thu 8/20/20	Thu 8/20/20	Yes
681	681	4.12.3	4.12.3.2	4.4.3.9 Review and Verify Feedback	3 days	Fri 8/21/20	Tue 8/25/20	No
682	682	4.12.3	4.12.3.2	4.4.3.10 Approve Deliverable Expectation Document for Successful Execution of Database Development Plan	0 days	Tue 8/25/20	Tue 8/25/20	Yes
683	683	4.12.2	4.12.3.2	4.4.3.11 Develop Successful Execution of Database Development Plan	10 days	Wed 8/26/20	Wed 9/9/20	No
684	684	4.12.2	4.12.3.2	4.4.3.12 QA Deliverable	1 day	Thu 9/10/20	Thu 9/10/20	No
685	685	4.38.2	4.12.3.2	4.4.3.13 Submit Successful Execution of Database Development Plan	0 days	Thu 9/10/20	Thu 9/10/20	Yes



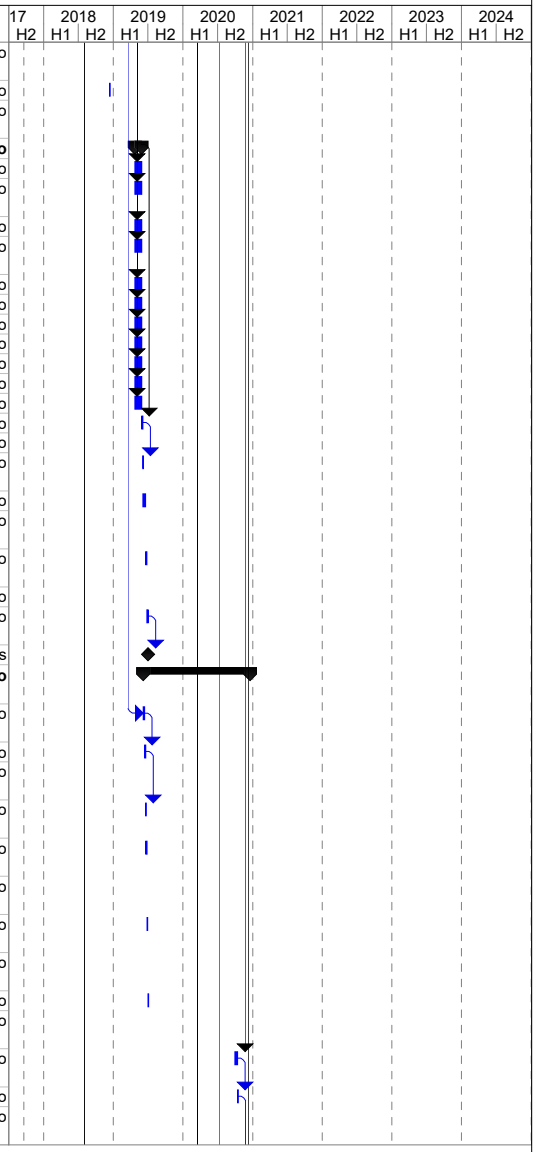
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
686	686	4.38.1	4.12.3.2	4.4.3.14 Conduct Walk-through for Successful Execution of Database Development Plan	2 days	Fri 9/11/20	Mon 9/14/20	No
687	687	4.12.3	4.12.3.2	4.4.3.15 Review Successful Execution of Database Development Plan	10 days	Fri 9/11/20	Thu 9/24/20	No
688	688	4.12.3	4.12.3.2	4.4.3.16 Provide Feedback on Successful Execution of Database Development Plan	0 days	Thu 9/24/20	Thu 9/24/20	Yes
689	689	4.12.2	4.12.3.2	4.4.3.17 Incorporate Feedback on Successful Execution of Database Development Plan	5 days	Fri 9/25/20	Thu 10/1/20	No
690	690	4.38.2	4.12.3.2	4.4.3.18 Submit Final Version of Successful Execution of Database Development Plan	0 days	Thu 10/1/20	Thu 10/1/20	Yes
691	691	4.12.3	4.12.3.2	4.4.3.19 Review and Verify Feedback on Successful Execution of Database Development Plan	3 days	Fri 10/2/20	Tue 10/6/20	No
692	692	4.12.3	4.12.3.2	4.4.3.20 Approve Successful Execution of Database Development Plan	0 days	Tue 10/6/20	Tue 10/6/20	Yes
693	693	4.34		4.4.4 Provide Federal Certification Support	210 days	Mon 10/15/18	Fri 8/16/19	No
694	**694**	**4.19**	**4.19.3.1**	**4.4.5 DELIVERABLE: Test Management Plan**	**71 days**	**Thu 5/9/19**	**Mon 8/19/19**	**No**
695	695	4.19.1	4.19.3.1	4.4.5.1 Develop Deliverable Expectation Document for Test Management Plan	15 days	Thu 5/9/19	Thu 5/30/19	No
696	696	4.19.2	4.19.3.1	4.4.5.2 QA Deliverable Expectation Document	2 days	Fri 5/31/19	Mon 6/3/19	No
697	697	4.38.2	4.19.3.1	4.4.5.3 Submit Deliverable Expectation Document for Test Management Plan	0 days	Mon 6/3/19	Mon 6/3/19	No
698	698	4.38.1	4.19.3.1	4.4.5.4 Conduct Walk-through for Deliverable Expectation Document for Test Management Plan	2 days	Tue 6/4/19	Wed 6/5/19	No
699	699	4.19.3	4.19.3.1	4.4.5.5 Review Deliverable Expectation Document for Test Management Plan	5 days	Tue 6/4/19	Mon 6/10/19	No
700	700	4.19.3	4.19.3.1	4.4.5.6 Provide Feedback on Deliverable Expectation Document for Test Management Plan	0 days	Mon 6/10/19	Mon 6/10/19	No
701	701	4.19.2	4.19.3.1	4.4.5.7 Incorporate Feedback on Deliverable Expectation Document for Test Management Plan	3 days	Tue 6/11/19	Thu 6/13/19	No
702	702	4.38.2	4.19.3.1	4.4.5.8 Submit Final Version of Deliverable Expectation Document for Test Management Plan	0 days	Thu 6/13/19	Thu 6/13/19	No
703	703	4.19.3	4.19.3.1	4.4.5.9 Review and Verify Feedback	3 days	Fri 6/14/19	Tue 6/18/19	No
704	704	4.19.3	4.19.3.1	4.4.5.10 Approve Deliverable Expectation Document for Test Management Plan	0 days	Tue 6/18/19	Tue 6/18/19	No
705	705	4.19.1	4.19.3.1	4.4.5.11 Develop Test Management Plan	20 days	Wed 6/19/19	Wed 7/17/19	No
706	706	4.19.2	4.19.3.1	4.4.5.12 QA Deliverable	5 days	Thu 7/18/19	Wed 7/24/19	No
707	707	4.38.2	4.19.3.1	4.4.5.13 Submit Test Management Plan	0 days	Wed 7/24/19	Wed 7/24/19	No
708	708	4.38.1	4.19.3.1	4.4.5.14 Conduct Walk-through for Test Management Plan	2 days	Thu 7/25/19	Fri 7/26/19	No
709	709	4.19.3	4.19.3.1	4.4.5.15 Review Test Management Plan	10 days	Thu 7/25/19	Wed 8/7/19	No
710	710	4.19.3	4.19.3.1	4.4.5.16 Provide Feedback on Test Management Plan	0 days	Wed 8/7/19	Wed 8/7/19	No
711	711	4.19.2	4.19.3.1	4.4.5.17 Incorporate Feedback on Test Management Plan	5 days	Thu 8/8/19	Wed 8/14/19	No
712	712	4.38.2	4.19.3.1	4.4.5.18 Submit Final Version of Test Management Plan	0 days	Wed 8/14/19	Wed 8/14/19	No
713	713	4.19.3	4.19.3.1	4.4.5.19 Review and Verify Test Management Plan	3 days	Thu 8/15/19	Mon 8/19/19	No
714	714	4.19.1	4.19.3.1	4.4.5.20 Approve Test Management Plan	0 days	Mon 8/19/19	Mon 8/19/19	No
715	**715**	**4.8**	**4.8.3.1**	**4.4.6 DELIVERABLE: Business Continuity and Disaster Recovery Plan**	**165 days**	**Thu 11/1/18**	**Mon 7/1/19**	**No**
716	716	4.8.1	4.8.3.1	4.4.6.1 Develop Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	15 days	Thu 11/1/18	Mon 11/26/18	No
717	717	4.8.2	4.8.3.1	4.4.6.2 QA Deliverable Expectation Document	2 days	Tue 11/27/18	Wed 11/28/18	No
718	718	4.38.2	4.8.3.1	4.4.6.3 Submit Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Wed 11/28/18	Wed 11/28/18	No
719	719	4.38.1	4.8.3.1	4.4.6.4 Conduct Walk-through for Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	2 days	Thu 11/29/18	Fri 11/30/18	No
720	720	4.8.3	4.8.3.1	4.4.6.5 Review Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	5 days	Thu 11/29/18	Wed 12/5/18	No
721	721	4.8.3	4.8.3.1	4.4.6.6 Provide Feedback on Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Wed 12/5/18	Wed 12/5/18	No
722	722	4.8.2	4.8.3.1	4.4.6.7 Incorporate Feedback on Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	3 days	Thu 12/6/18	Mon 12/10/18	No



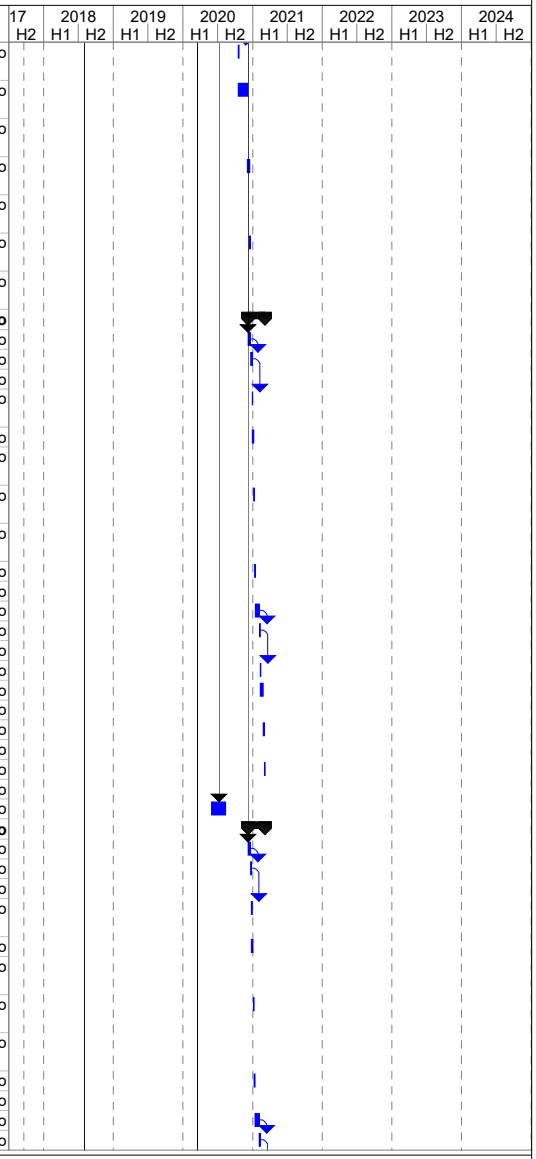
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
723	723	4.38.2	4.8.3.1	4.4.6.8 Submit Final Version of Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Mon 12/10/18	Mon 12/10/18	No
724	724	4.8.3	4.8.3.1	4.4.6.9 Review and Verify Feedback	3 days	Tue 12/11/18	Thu 12/13/18	No
725	725	4.8.3	4.8.3.1	4.4.6.10 Approve Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Thu 12/13/18	Thu 12/13/18	No
726	**726**	**4.8.1**	**4.8.3.1**	**4.4.6.11 Develop Business Continuity and Disaster Recovery Plan**	**25 days**	**Tue 4/23/19**	**Tue 5/28/19**	**No**
727	727	4.8.2	4.8.3.1	4.4.6.11.1 Develop protocols	25 days	Tue 4/23/19	Tue 5/28/19	No
728	728	4.8.2	4.8.3.1	4.4.6.11.2 Develop overview of requirements, strategies and proposed actions	25 days	Tue 4/23/19	Tue 5/28/19	No
729	729	4.8.2	4.8.3.1	4.4.6.11.3 Ensure consistency with other plans	25 days	Tue 4/23/19	Tue 5/28/19	No
730	730	4.8.2	4.8.3.1	4.4.6.11.4 Identify hardware, software, data and communication components	25 days	Tue 4/23/19	Tue 5/28/19	No
731	731	4.8.2	4.8.3.1	4.4.6.11.5 Identify the means for duplication	25 days	Tue 4/23/19	Tue 5/28/19	No
732	732	4.8.2	4.8.3.1	4.4.6.11.6 Identify retention periods	25 days	Tue 4/23/19	Tue 5/28/19	No
733	733	4.8.2	4.8.3.1	4.4.6.11.7 Identify components for planning backups	25 days	Tue 4/23/19	Tue 5/28/19	No
734	734	4.8.2	4.8.3.1	4.4.6.11.8 Outline troubleshooting, replacing, and reconfiguring steps	25 days	Tue 4/23/19	Tue 5/28/19	No
735	735	4.8.2	4.8.3.1	4.4.6.11.9 Outline steps for restores and verification	25 days	Tue 4/23/19	Tue 5/28/19	No
736	736	4.8.2	4.8.3.1	4.4.6.11.10 Outline when alternative site will be used	25 days	Tue 4/23/19	Tue 5/28/19	No
737	737	4.8.2	4.8.3.1	4.4.6.11.11 Define the procedure for reverting to alternate site	25 days	Tue 4/23/19	Tue 5/28/19	No
738	738	4.8.2	4.8.3.1	4.4.6.12 QA Deliverable	4 days	Wed 5/29/19	Mon 6/3/19	No
739	739	4.38.2	4.8.3.1	4.4.6.13 Submit Business Continuity and Disaster Recovery Plan	0 days	Mon 6/3/19	Mon 6/3/19	No
740	740	4.38.1	4.8.3.1	4.4.6.14 Conduct Walk-through for Business Continuity and Disaster Recovery Plan	2 days	Tue 6/4/19	Wed 6/5/19	No
741	741	4.8.3	4.8.3.1	4.4.6.15 Review Business Continuity and Disaster Recovery Plan	10 days	Tue 6/4/19	Mon 6/17/19	No
742	742	4.8.3	4.8.3.1	4.4.6.16 Provide Feedback on Business Continuity and Disaster Recovery Plan	0 days	Mon 6/17/19	Mon 6/17/19	No
743	743	4.8.2	4.8.3.1	4.4.6.17 Incorporate Feedback on Business Continuity and Disaster Recovery Plan	5 days	Tue 6/18/19	Mon 6/24/19	No
744	744	4.38.2	4.8.3.1	4.4.6.18 Submit Final Version of Business Continuity and Disaster Recovery F	0 days	Mon 6/24/19	Mon 6/24/19	No
745	745	4.8.3	4.8.3.1	4.4.6.19 Review and Verify Feedback on Business Continuity and Disaster Recovery Plan	5 days	Tue 6/25/19	Mon 7/1/19	No
746	746	4.8.1	4.8.3.1	4.4.6.20 Approve Business Continuity and Disaster Recovery Plan	0 days	Mon 7/1/19	Mon 7/1/19	Yes
747	**747**	**4.28**	**4.28.3.1**	**4.4.7 DELIVERABLE: Development, Modification and Conversion of System Software**	**384 days**	**Thu 6/6/19**	**Thu 12/17/20**	**No**
748	748	4.28.1	4.28.3.1	4.4.7.1 Develop Deliverable Expectation Document for Development, Modification and Conversion of System Software	5 days	Thu 6/6/19	Wed 6/12/19	No
749	749	4.28.2	4.28.3.1	4.4.7.2 QA Deliverable Expectation Document	4 days	Thu 6/13/19	Tue 6/18/19	No
750	750	4.38.2	4.28.3.1	4.4.7.3 Submit Deliverable Expectation Document for Development, Modification and Conversion of System Software	0 days	Tue 6/18/19	Tue 6/18/19	No
751	751	4.38.1	4.28.3.1	4.4.7.4 Conduct Walk-through for Deliverable Expectation Document for Development, Modification and Conversion of System Software	2 days	Wed 6/19/19	Thu 6/20/19	No
752	752	4.28.3	4.28.3.1	4.4.7.5 Review Deliverable Expectation Document for Development, Modification and Conversion of System Software	5 days	Wed 6/19/19	Tue 6/25/19	No
753	753	4.28.3	4.28.3.1	4.4.7.6 Provide Feedback on Deliverable Expectation Document for Development, Modification and Conversion of System Software	0 days	Tue 6/25/19	Tue 6/25/19	No
754	754	4.28.2	4.28.3.1	4.4.7.7 Incorporate Feedback on Deliverable Expectation Document for Development, Modification and Conversion of System Software	3 days	Wed 6/26/19	Fri 6/28/19	No
755	755	4.38.2	4.28.3.1	4.4.7.8 Submit Final Version of Deliverable Expectation Document for Development, Modification and Conversion of System Software	0 days	Fri 6/28/19	Fri 6/28/19	No
756	756	4.28.3	4.28.3.1	4.4.7.9 Review and Verify Feedback	3 days	Mon 7/1/19	Wed 7/3/19	No
757	757	4.28.3	4.28.3.1	4.4.7.10 Approve Deliverable Expectation Document for Development, Modification and Conversion of System Software	0 days	Wed 7/3/19	Wed 7/3/19	No
758	758	4.28.1	4.28.3.1	4.4.7.11 Develop Development, Modification and Conversion of System Software	10 days	Tue 9/29/20	Mon 10/12/20	No
759	759	4.28.2	4.28.3.1	4.4.7.12 QA Deliverable	3 days	Tue 10/13/20	Thu 10/15/20	No
760	760	4.38.2	4.28.3.1	4.4.7.13 Submit Development, Modification and Conversion of System Software	0 days	Thu 10/15/20	Thu 10/15/20	No



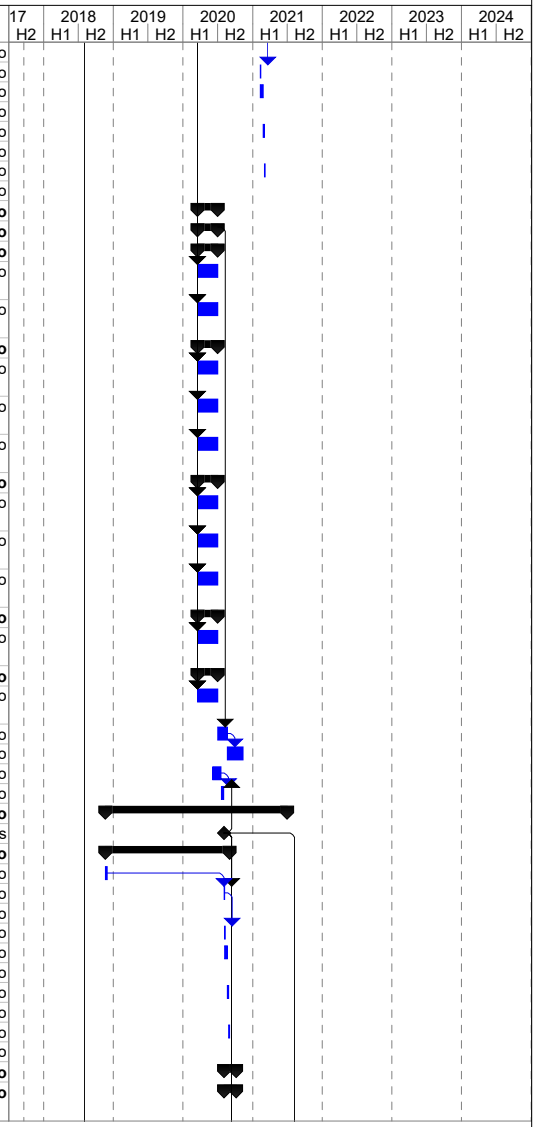
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
761	761	4.38.1	4.28.3.1	4.4.7.14 Conduct Walk-through for Development, Modification and Conversion of System Software	2 days	Fri 10/16/20	Mon 10/19/20	No
762	762	4.28.3	4.28.3.1	4.4.7.15 Review Development, Modification and Conversion of System Software	30 days	Fri 10/16/20	Wed 12/2/20	No
763	763	4.28.3	4.28.3.1	4.4.7.16 Provide Feedback on Development, Modification and Conversion of System Software	0 days	Wed 12/2/20	Wed 12/2/20	No
764	764	4.28.2	4.28.3.1	4.4.7.17 Incorporate Feedback on Development, Modification and Conversion of System Software	8 days	Thu 12/3/20	Mon 12/14/20	No
765	765	4.38.2	4.28.3.1	4.4.7.18 Submit Final Version of Development, Modification and Conversion of System Software	0 days	Mon 12/14/20	Mon 12/14/20	No
766	766	4.28.3	4.28.3.1	4.4.7.19 Review and Verify Development, Modification and Conversion of System Software	3 days	Tue 12/15/20	Thu 12/17/20	No
767	767	4.28.1	4.28.3.1	4.4.7.20 Approve Development, Modification and Conversion of System Software	0 days	Thu 12/17/20	Thu 12/17/20	No
768	**768**	**4.28**	**4.28.3.2**	**4.4.8 DELIVERABLE: Modules Inventory**	**61 days**	**Mon 12/7/20**	**Fri 3/5/21**	**No**
769	769	4.28.1	4.28.3.2	4.4.8.1 Develop Deliverable Expectation Document for Modules Inventory	10 days	Mon 12/7/20	Fri 12/18/20	No
770	770	4.28.2	4.28.3.2	4.4.8.2 QA Deliverable Expectation Document	5 days	Mon 12/21/20	Mon 12/28/20	No
771	771	4.38.2	4.28.3.2	4.4.8.3 Submit Deliverable Expectation Document for Modules Inventory	0 days	Mon 12/28/20	Mon 12/28/20	No
772	772	4.38.1	4.28.3.2	4.4.8.4 Conduct Walk-through for Deliverable Expectation Document for Modules Inventory	2 days	Tue 12/29/20	Wed 12/30/20	No
773	773	4.28.3	4.28.3.2	4.4.8.5 Review Deliverable Expectation Document for Modules Inventory	5 days	Tue 12/29/20	Tue 1/5/21	No
774	774	4.28.3	4.28.3.2	4.4.8.6 Provide Feedback on Deliverable Expectation Document for Modules Inventory	0 days	Tue 1/5/21	Tue 1/5/21	No
775	775	4.28.2	4.28.3.2	4.4.8.7 Incorporate Feedback on Deliverable Expectation Document for Modules Inventory	3 days	Wed 1/6/21	Fri 1/8/21	No
776	776	4.38.2	4.28.3.2	4.4.8.8 Submit Final Version of Deliverable Expectation Document for Modules Inventory	0 days	Fri 1/8/21	Fri 1/8/21	No
777	777	4.28.3	4.28.3.2	4.4.8.9 Review and Verify Feedback	3 days	Mon 1/11/21	Wed 1/13/21	No
778	778	4.28.3	4.28.3.2	4.4.8.10 Approve Deliverable Expectation Document for Modules Inventory	0 days	Wed 1/13/21	Wed 1/13/21	No
779	779	4.28.1	4.28.3.2	4.4.8.11 Develop Modules Inventory	15 days	Thu 1/14/21	Thu 2/4/21	No
780	780	4.28.2	4.28.3.2	4.4.8.12 QA Deliverable	2 days	Fri 2/5/21	Mon 2/8/21	No
781	781	4.38.2	4.28.3.2	4.4.8.13 Submit Modules Inventory	0 days	Mon 2/8/21	Mon 2/8/21	No
782	782	4.38.1	4.28.3.2	4.4.8.14 Conduct Walk-through for Modules Inventory	2 days	Tue 2/9/21	Wed 2/10/21	No
783	783	4.28.3	4.28.3.2	4.4.8.15 Review Modules Inventory	10 days	Tue 2/9/21	Tue 2/23/21	No
784	784	4.28.3	4.28.3.2	4.4.8.16 Provide Feedback on Modules Inventory	0 days	Tue 2/23/21	Tue 2/23/21	No
785	785	4.28.2	4.28.3.2	4.4.8.17 Incorporate Feedback on Modules Inventory	5 days	Wed 2/24/21	Tue 3/2/21	No
786	786	4.38.2	4.28.3.2	4.4.8.18 Submit Final Version of Modules Inventory	0 days	Tue 3/2/21	Tue 3/2/21	No
787	787	4.28.3	4.28.3.2	4.4.8.19 Review and Verify Modules Inventory	3 days	Wed 3/3/21	Fri 3/5/21	No
788	788	4.28.1	4.28.3.2	4.4.8.20 Approve Modules Inventory	0 days	Fri 3/5/21	Fri 3/5/21	No
789	789	4.31		4.4.9 Training Analysis and Design	51 days	Fri 5/29/20	Mon 8/10/20	No
790	**790**	**4.28**	**4.28.3.4**	**4.4.10 DELIVERABLE: Unit Test Results**	**61 days**	**Mon 12/7/20**	**Fri 3/5/21**	**No**
791	791	4.28.1	4.28.3.4	4.4.10.1 Develop Deliverable Expectation Document for Unit Test Results	10 days	Mon 12/7/20	Fri 12/18/20	No
792	792	4.28.2	4.28.3.4	4.4.10.2 QA Deliverable Expectation Document	3 days	Mon 12/21/20	Wed 12/23/20	No
793	793	4.38.2	4.28.3.4	4.4.10.3 Submit Deliverable Expectation Document for Unit Test Results	0 days	Wed 12/23/20	Wed 12/23/20	No
794	794	4.38.1	4.28.3.4	4.4.10.4 Conduct Walk-through for Deliverable Expectation Document for Unit Test Results	2 days	Thu 12/24/20	Mon 12/28/20	No
795	795	4.28.3	4.28.3.4	4.4.10.5 Review Deliverable Expectation Document for Unit Test Results	5 days	Thu 12/24/20	Thu 12/31/20	No
796	796	4.28.3	4.28.3.4	4.4.10.6 Provide Feedback on Deliverable Expectation Document for Unit Test Results	0 days	Thu 12/31/20	Thu 12/31/20	No
797	797	4.28.2	4.28.3.4	4.4.10.7 Incorporate Feedback on Deliverable Expectation Document for Unit Test Results	3 days	Mon 1/4/21	Wed 1/6/21	No
798	798	4.38.2	4.28.3.4	4.4.10.8 Submit Final Version of Deliverable Expectation Document for Unit Test Results	0 days	Wed 1/6/21	Wed 1/6/21	No
799	799	4.28.3	4.28.3.4	4.4.10.9 Review and Verify Feedback	3 days	Thu 1/7/21	Mon 1/11/21	No
800	800	4.28.3	4.28.3.4	4.4.10.10 Approve Deliverable Expectation Document for Unit Test Results	0 days	Mon 1/11/21	Mon 1/11/21	No
801	801	4.28.1	4.28.3.4	4.4.10.11 Develop Unit Test Results	15 days	Tue 1/12/21	Tue 2/2/21	No
802	802	4.28.2	4.28.3.4	4.4.10.12 QA Deliverable	4 days	Wed 2/3/21	Mon 2/8/21	No



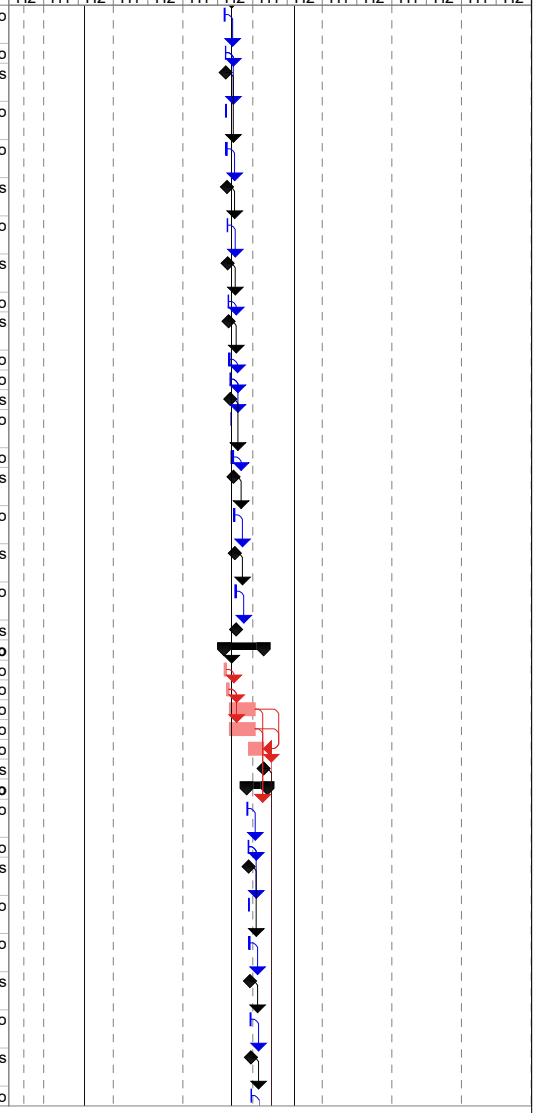
Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Critical
Milestone	Inactive Task	Manual Summary Rollup	Critical Split
Summary	Inactive Milestone	Manual Summary	Progress
Project Summary	Inactive Summary	Start-only	Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
803	803	4.38.2	4.28.3.4	4.4.10.13 Submit Unit Test Results	0 days	Mon 2/8/21	Mon 2/8/21	No
804	804	4.38.1	4.28.3.4	4.4.10.14 Conduct Walk-through for Unit Test Results	2 days	Tue 2/9/21	Wed 2/10/21	No
805	805	4.28.3	4.28.3.4	4.4.10.15 Review Unit Test Results	10 days	Tue 2/9/21	Tue 2/23/21	No
806	806	4.28.3	4.28.3.4	4.4.10.16 Provide Feedback on Unit Test Results	0 days	Tue 2/23/21	Tue 2/23/21	No
807	807	4.28.2	4.28.3.4	4.4.10.17 Incorporate Feedback on Unit Test Results	5 days	Wed 2/24/21	Tue 3/2/21	No
808	808	4.38.2	4.28.3.4	4.4.10.18 Submit Final Version of Unit Test Results	0 days	Tue 3/2/21	Tue 3/2/21	No
809	809	4.28.3	4.28.3.4	4.4.10.19 Review and Verify Unit Test Results	3 days	Wed 3/3/21	Fri 3/5/21	No
810	810	4.28.1	4.28.3.4	4.4.10.20 Approve Unit Test Results	0 days	Fri 3/5/21	Fri 3/5/21	No
811	**811**	**4.29**		**4.4.11 Create Data Conversion Test Cases**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
812	**812**	**4.29**		**4.4.11.1 Develop New Data Conversion Test Cases**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
813	**813**	**4.29**		**4.4.11.1.1 Group 1**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
814	814	4.29		4.4.11.1.1.1 Develop New Data Conversion Test Cases for Case Intake	75 days	Tue 3/17/20	Tue 6/30/20	No
815	815	4.29		4.4.11.1.1.2 Develop New Data Conversion Test Cases for Self Service	75 days	Tue 3/17/20	Tue 6/30/20	No
816	**816**	**4.29**		**4.4.11.1.2 Group 2**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
817	817	4.29		4.4.11.1.2.1 Develop New Data Conversion Test Cases for Case Management	75 days	Tue 3/17/20	Tue 6/30/20	No
818	818	4.29		4.4.11.1.2.2 Develop New Data Conversion Test Cases for Customer Service	75 days	Tue 3/17/20	Tue 6/30/20	No
819	819	4.29		4.4.11.1.2.3 Develop New Data Conversion Test Cases for Locate	75 days	Tue 3/17/20	Tue 6/30/20	No
820	**820**	**4.29**		**4.4.11.1.3 Group 3**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
821	821	4.29		4.4.11.1.3.1 Develop New Data Conversion Test Cases for Establishment	75 days	Tue 3/17/20	Tue 6/30/20	No
822	822	4.29		4.4.11.1.3.2 Develop New Data Conversion Test Cases for Interstate	75 days	Tue 3/17/20	Tue 6/30/20	No
823	823	4.29		4.4.11.1.3.3 Develop New Data Conversion Test Cases for Financial Management	75 days	Tue 3/17/20	Tue 6/30/20	No
824	**824**	**4.29**		**4.4.11.1.4 Group 4**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
825	825	4.29		4.4.11.1.4.1 Develop New Data Conversion Test Cases for Enforcement	75 days	Tue 3/17/20	Tue 6/30/20	No
826	**826**	**4.29**		**4.4.11.1.5 Group 5**	**75 days**	**Tue 3/17/20**	**Tue 6/30/20**	**No**
827	827	4.29		4.4.11.1.5.1 Develop New Data Conversion Test Cases for Reporting	75 days	Tue 3/17/20	Tue 6/30/20	No
828	828	4.20		4.4.12 Stage Test Data - Data Conversion Test	35 days	Wed 7/1/20	Wed 8/19/20	No
829	829	4.20		4.4.13 Execute Test Plan - Data Conversion Test	56 days	Thu 8/20/20	Mon 11/9/20	No
830	830	4.28.2.5		4.5 Set Up, Deliver, and Deploy Performance Testing Environment	30 days	Fri 6/5/20	Fri 7/17/20	No
831	831	4.28.2.5		4.6 Update hardware and software list	10 days	Mon 7/20/20	Fri 7/31/20	No
832	**832**	**4.30.2.1**		**4.7 System Test**	**651 days**	**Tue 11/20/18**	**Tue 6/29/21**	**No**
833	833	4.30.2.1		4.7.1 Begin System Test	0 days	Mon 8/3/20	Mon 8/3/20	Yes
834	**834**	**4.18.1**	4.29.3.2	**4.7.2 DELIVERABLE: Conversion and Testing Plan**	**446 days**	**Tue 11/20/18**	**Mon 8/31/20**	**No**
835	835	4.29.1	4.29.3.2	4.7.2.1 Develop Conversion and Testing Plan	5 days	Tue 11/20/18	Wed 11/28/18	No
836	836	4.29.2	4.29.3.2	4.7.2.2 QA Deliverable	3 days	Mon 8/3/20	Wed 8/5/20	No
837	837	4.38.2	4.29.3.2	4.7.2.3 Submit Conversion and Testing Plan	0 days	Wed 8/5/20	Wed 8/5/20	No
838	838	4.38.1	4.29.3.2	4.7.2.4 Conduct Walk-through for Conversion and Testing Plan	2 days	Thu 8/6/20	Fri 8/7/20	No
839	839	4.29.3	4.29.3.2	4.7.2.5 Review Conversion and Testing Plan	10 days	Thu 8/6/20	Wed 8/19/20	No
840	840	4.29.3	4.29.3.2	4.7.2.6 Provide Feedback on Conversion and Testing Plan	0 days	Wed 8/19/20	Wed 8/19/20	No
841	841	4.29.2	4.29.3.2	4.7.2.7 Incorporate Feedback on Conversion and Testing Plan	5 days	Thu 8/20/20	Wed 8/26/20	No
842	842	4.38.2	4.29.3.2	4.7.2.8 Submit Final Version of Conversion and Testing Plan	0 days	Wed 8/26/20	Wed 8/26/20	No
843	843	4.29.3	4.29.3.2	4.7.2.9 Review and Verify Feedback on Conversion and Testing Plan	3 days	Thu 8/27/20	Mon 8/31/20	No
844	844	4.29.1	4.29.3.2	4.7.2.10 Approve Conversion and Testing Plan	0 days	Mon 8/31/20	Mon 8/31/20	No
845	**845**	**4.30.2.1**		**4.7.3 Execution of Deliverables from the Development SubPhase**	**45 days**	**Mon 8/3/20**	**Mon 10/5/20**	**No**
846	**846**	**4.7**	**4.7.3.2**	**4.7.3.1 DELIVERABLE: Successful Execution of the Technical Approach Plan**	**45 days**	**Mon 8/3/20**	**Mon 10/5/20**	**No**



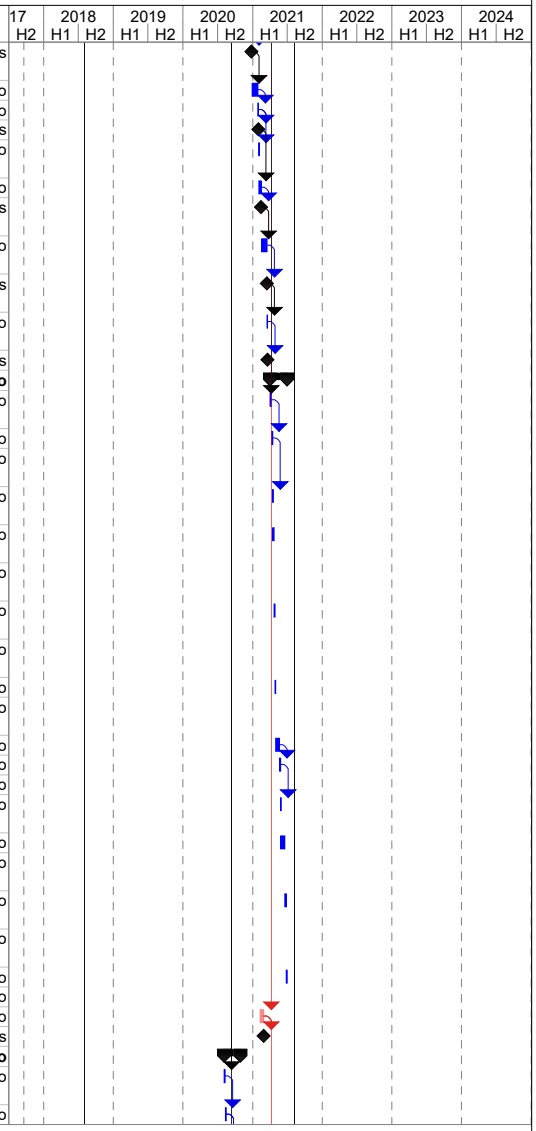
Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Critical	
Milestone		Inactive Task		Manual Summary Rollup		Critical Split	
Summary		Inactive Milestone		Manual Summary		Progress	
Project Summary		Inactive Summary		Start-only		Deadline	

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
847	847	4.7.1	4.7.3.2	4.7.3.1.1 Develop Deliverable Expectation Document for Technical Approach Plan Successful Execution	5 days	Mon 8/3/20	Fri 8/7/20	No
848	848	4.7.2	4.7.3.2	4.7.3.1.2 QA Deliverable Expectation Document	2 days	Mon 8/10/20	Tue 8/11/20	No
849	849	4.38.2	4.7.3.2	4.7.3.1.3 Submit Deliverable Expectation Document for Technical Approach Plan Successful Execution	0 days	Tue 8/11/20	Tue 8/11/20	Yes
850	850	4.38.1	4.7.3.2	4.7.3.1.4 Conduct Walk-through for Deliverable Expectation Document for Technical Approach Plan Successful Execution	2 days	Wed 8/12/20	Thu 8/13/20	No
851	851	4.7.3	4.7.3.2	4.7.3.1.5 Review Deliverable Expectation Document for Technical Approach Plan Successful Execution	5 days	Wed 8/12/20	Tue 8/18/20	No
852	852	4.7.3	4.7.3.2	4.7.3.1.6 Provide Feedback on Deliverable Expectation Document for Technical Approach Plan Successful Execution	0 days	Tue 8/18/20	Tue 8/18/20	Yes
853	853	4.7.2	4.7.3.2	4.7.3.1.7 Incorporate Feedback on Deliverable Expectation Document for Technical Approach Plan Successful Execution	3 days	Wed 8/19/20	Fri 8/21/20	No
854	854	4.38.2	4.7.3.2	4.7.3.1.8 Submit Final Version of Deliverable Expectation Document for Technical Approach Plan Successful Execution	0 days	Fri 8/21/20	Fri 8/21/20	Yes
855	855	4.7.3	4.7.3.2	4.7.3.1.9 Review and Verify Feedback	3 days	Mon 8/24/20	Wed 8/26/20	No
856	856	4.7.3	4.7.3.2	4.7.3.1.10 Approve Deliverable Expectation Document for Technical Approach Plan Successful Execution	0 days	Wed 8/26/20	Wed 8/26/20	Yes
857	857	4.7.1	4.7.3.2	4.7.3.1.11 Develop Technical Approach Plan Successful Execution	5 days	Thu 8/27/20	Wed 9/2/20	No
858	858	4.7.2	4.7.3.2	4.7.3.1.12 QA Deliverable	2 days	Thu 9/3/20	Fri 9/4/20	No
859	859	4.38.2	4.7.3.2	4.7.3.1.13 Submit Technical Approach Plan Successful Execution	0 days	Fri 9/4/20	Fri 9/4/20	Yes
860	860	4.38.1	4.7.3.2	4.7.3.1.14 Conduct Walk-through for Technical Approach Plan Successful Execution	2 days	Tue 9/8/20	Wed 9/9/20	No
861	861	4.7.3	4.7.3.2	4.7.3.1.15 Review Technical Approach Plan Successful Execution	10 days	Tue 9/8/20	Mon 9/21/20	No
862	862	4.7.3	4.7.3.2	4.7.3.1.16 Provide Feedback on Technical Approach Plan Successful Execution	0 days	Mon 9/21/20	Mon 9/21/20	Yes
863	863	4.7.3	4.7.3.2	4.7.3.1.17 Incorporate Feedback on Technical Approach Plan Successful Execution	5 days	Tue 9/22/20	Mon 9/28/20	No
864	864	4.38.2	4.7.3.2	4.7.3.1.18 Submit Final Version of Technical Approach Plan Successful Execution	0 days	Mon 9/28/20	Mon 9/28/20	Yes
865	865	4.7.3	4.7.3.2	4.7.3.1.19 Review and Verify Feedback on Technical Approach Plan Successful Execution	5 days	Tue 9/29/20	Mon 10/5/20	No
866	866	4.7.3	4.7.3.2	4.7.3.1.20 Approve Technical Approach Plan Successful Execution	0 days	Mon 10/5/20	Mon 10/5/20	Yes
867	**867**	**4.30.2.1**		**4.7.4 System Testing**	**141 days**	**Mon 8/3/20**	**Fri 2/26/21**	**No**
868	868	4.30.2.1		4.7.4.1 Perform Smoke Testing	10 days	Mon 8/3/20	Fri 8/14/20	No
869	869	4.30.2.1		4.7.4.2 Perform Integration Testing	10 days	Mon 8/17/20	Fri 8/28/20	No
870	870	4.30.2.1		4.7.4.3 Execute System Testing Scenarios	90 days	Mon 8/31/20	Tue 1/12/21	No
871	871	4.30.2.1		4.7.4.4 Perform Security Testing	90 days	Mon 8/31/20	Tue 1/12/21	No
872	872	4.30.2.1		4.7.4.5 Perform Regression Testing	54 days	Wed 12/9/20	Fri 2/26/21	No
873	873	4.30.2.1		4.7.4.6 System Testing Complete	0 days	Fri 2/26/21	Fri 2/26/21	Yes
874	**874**	**4.14**	**4.14.3.2**	**4.7.5 DELIVERABLE: Successful Execution of Ease of Use Management Pla**	**75 days**	**Mon 11/30/20**	**Thu 3/18/21**	**No**
875	875	4.14.1	4.14.3.2	4.7.5.1 Develop Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	5 days	Mon 11/30/20	Fri 12/4/20	No
876	876	4.14.2	4.14.3.2	4.7.5.2 QA Deliverable Expectation Document	3 days	Mon 12/7/20	Wed 12/9/20	No
877	877	4.38.2	4.14.3.2	4.7.5.3 Submit Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	0 days	Wed 12/9/20	Wed 12/9/20	Yes
878	878	4.38.1	4.14.3.2	4.7.5.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	2 days	Thu 12/10/20	Fri 12/11/20	No
879	879	4.14.3	4.14.3.2	4.7.5.5 Review Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	5 days	Thu 12/10/20	Wed 12/16/20	No
880	880	4.14.3	4.14.3.2	4.7.5.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	0 days	Wed 12/16/20	Wed 12/16/20	Yes
881	881	4.14.2	4.14.3.2	4.7.5.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	3 days	Thu 12/17/20	Mon 12/21/20	No
882	882	4.38.2	4.14.3.2	4.7.5.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	0 days	Mon 12/21/20	Mon 12/21/20	Yes
883	883	4.14.3	4.14.3.2	4.7.5.9 Review and Verify Feedback	3 days	Tue 12/22/20	Thu 12/24/20	No



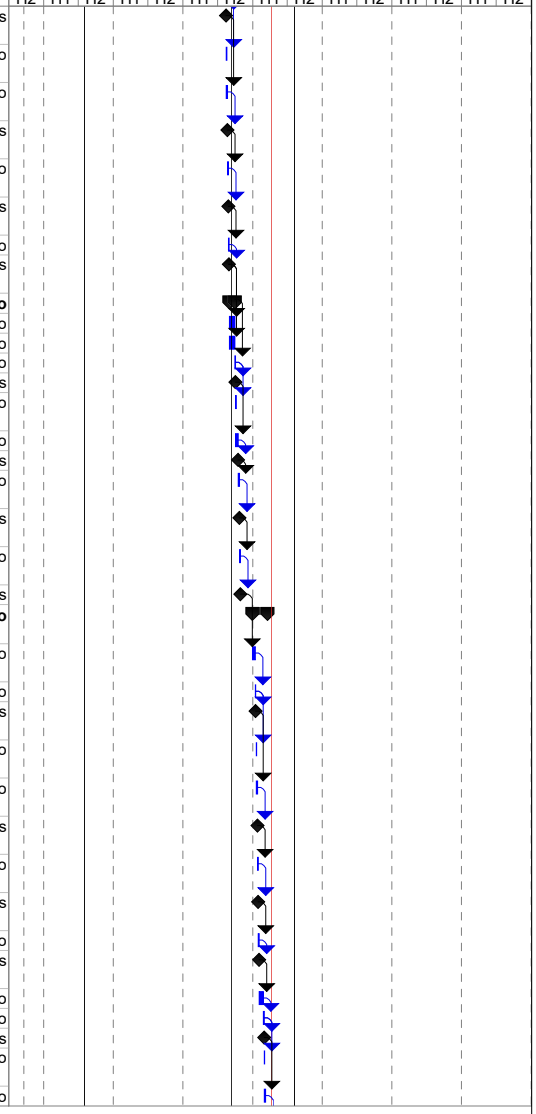
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
884	884	4.14.3	4.14.3.2	4.7.5.10 Approve Deliverable Expectation Document for Successful Execution of Ease of Use Management Plan	0 days	Thu 12/24/20	Thu 12/24/20	Yes
885	885	4.14.1	4.14.3.2	4.7.5.11 Develop Successful Execution of Ease of Use Management Plan	20 days	Mon 12/28/20	Tue 1/26/21	No
886	886	4.14.2	4.14.3.2	4.7.5.12 QA Deliverable	3 days	Wed 1/27/21	Fri 1/29/21	No
887	887	4.38.2	4.14.3.2	4.7.5.13 Submit Successful Execution of Ease of Use Management Plan	0 days	Fri 1/29/21	Fri 1/29/21	Yes
888	888	4.38.1	4.14.3.2	4.7.5.14 Conduct Walk-through for Successful Execution of Ease of Use Management Plan	2 days	Mon 2/1/21	Tue 2/2/21	No
889	889	4.14.3	4.14.3.2	4.7.5.15 Review Successful Execution of Ease of Use Management Plan	10 days	Mon 2/1/21	Fri 2/12/21	No
890	890	4.14.3	4.14.3.2	4.7.5.16 Provide Feedback on Successful Execution of Ease of Use Management Plan	0 days	Fri 2/12/21	Fri 2/12/21	Yes
891	891	4.14.2	4.14.3.2	4.7.5.17 Incorporate Feedback on Successful Execution of Ease of Use Management Plan	20 days	Tue 2/16/21	Mon 3/15/21	No
892	892	4.38.2	4.14.3.2	4.7.5.18 Submit Final Version of Successful Execution of Ease of Use Management Plan	0 days	Mon 3/15/21	Mon 3/15/21	Yes
893	893	4.14.3	4.14.3.2	4.7.5.19 Review and Verify Feedback on Successful Execution of Ease of Use Management Plan	3 days	Tue 3/16/21	Thu 3/18/21	No
894	894	4.14.3	4.14.3.2	4.7.5.20 Approve Successful Execution of Ease of Use Management Plan	0 days	Thu 3/18/21	Thu 3/18/21	Yes
895	**895**	**4.30**	**4.30.3.1**	**4.7.6 DELIVERABLE: Integration, System, and Performance Testing**	**62 days**	**Thu 4/1/21**	**Tue 6/29/21**	**No**
896	896	4.30.1	4.30.3.1	4.7.6.1 Develop Deliverable Expectation Document for Integration, System, and Performance Testing	5 days	Thu 4/1/21	Thu 4/8/21	No
897	897	4.30.2	4.30.3.1	4.7.6.2 QA Deliverable Expectation Document	4 days	Fri 4/9/21	Wed 4/14/21	No
898	898	4.38.2	4.30.3.1	4.7.6.3 Submit Deliverable Expectation Document for Integration, System, and Performance Testing	0 days	Wed 4/14/21	Wed 4/14/21	No
899	899	4.38.1	4.30.3.1	4.7.6.4 Conduct Walk-through for Deliverable Expectation Document for Integration, System, and Performance Testing	2 days	Thu 4/15/21	Fri 4/16/21	No
900	900	4.30.3	4.30.3.1	4.7.6.5 Review Deliverable Expectation Document for Integration, System, and Performance Testing	5 days	Thu 4/15/21	Wed 4/21/21	No
901	901	4.30.3	4.30.3.1	4.7.6.6 Provide Feedback on Deliverable Expectation Document for Integration, System, and Performance Testing	0 days	Wed 4/21/21	Wed 4/21/21	No
902	902	4.30.2	4.30.3.1	4.7.6.7 Incorporate Feedback on Deliverable Expectation Document for Integration, System, and Performance Testing	3 days	Thu 4/22/21	Mon 4/26/21	No
903	903	4.38.2	4.30.3.1	4.7.6.8 Submit Final Version of Deliverable Expectation Document for Integration, System, and Performance Testing	0 days	Mon 4/26/21	Mon 4/26/21	No
904	904	4.30.3	4.30.3.1	4.7.6.9 Review and Verify Feedback	3 days	Tue 4/27/21	Thu 4/29/21	No
905	905	4.30.3	4.30.3.1	4.7.6.10 Approve Deliverable Expectation Document for Integration, System, and Performance Testing	0 days	Thu 4/29/21	Thu 4/29/21	No
906	906	4.30.1	4.30.3.1	4.7.6.11 Develop Integration, System, and Performance Testing	15 days	Fri 4/30/21	Thu 5/20/21	No
907	907	4.30.2	4.30.3.1	4.7.6.12 QA Deliverable	4 days	Fri 5/21/21	Wed 5/26/21	No
908	908	4.38.2	4.30.3.1	4.7.6.13 Submit Integration, System, and Performance Testing	0 days	Wed 5/26/21	Wed 5/26/21	No
909	909	4.38.1	4.30.3.1	4.7.6.14 Conduct Walk-through for Integration, System, and Performance Testing	2 days	Thu 5/27/21	Fri 5/28/21	No
910	910	4.30.3	4.30.3.1	4.7.6.15 Review Integration, System, and Performance Testing	15 days	Thu 5/27/21	Thu 6/17/21	No
911	911	4.30.3	4.30.3.1	4.7.6.16 Provide Feedback on Integration, System, and Performance Testing	0 days	Thu 6/17/21	Thu 6/17/21	No
912	912	4.30.2	4.30.3.1	4.7.6.17 Incorporate Feedback on Integration, System, and Performance Testing	5 days	Fri 6/18/21	Thu 6/24/21	No
913	913	4.38.2	4.30.3.1	4.7.6.18 Submit Final Version of Integration, System, and Performance Testing	0 days	Thu 6/24/21	Thu 6/24/21	No
914	914	4.30.3	4.30.3.1	4.7.6.19 Review and Verify Integration, System, and Performance Testing	3 days	Fri 6/25/21	Tue 6/29/21	No
915	915	4.30.1	4.30.3.1	4.7.6.20 Approve Integration, System, and Performance Testing	0 days	Tue 6/29/21	Tue 6/29/21	No
916	916	4.30.2.5		4.7.7 UAT Training	14 days	Mon 2/8/21	Fri 2/26/21	No
917	917	4.30.2.5		4.7.8 UAT Training Complete	0 days	Fri 2/26/21	Fri 2/26/21	Yes
918	**918**	**4.9**	**4.9.3.2**	**4.7.9 DELIVERABLE: Successful Execution of the System Capacity Plan**	**61 days**	**Mon 8/3/20**	**Tue 10/27/20**	**No**
919	919	4.9.1	4.9.3.2	4.7.9.1 Develop Deliverable Expectation Document for Successful Execution of the System Capacity Plan	5 days	Mon 8/3/20	Fri 8/7/20	No
920	920	4.9.2	4.9.3.2	4.7.9.2 QA Deliverable Expectation Document	4 days	Mon 8/10/20	Thu 8/13/20	No



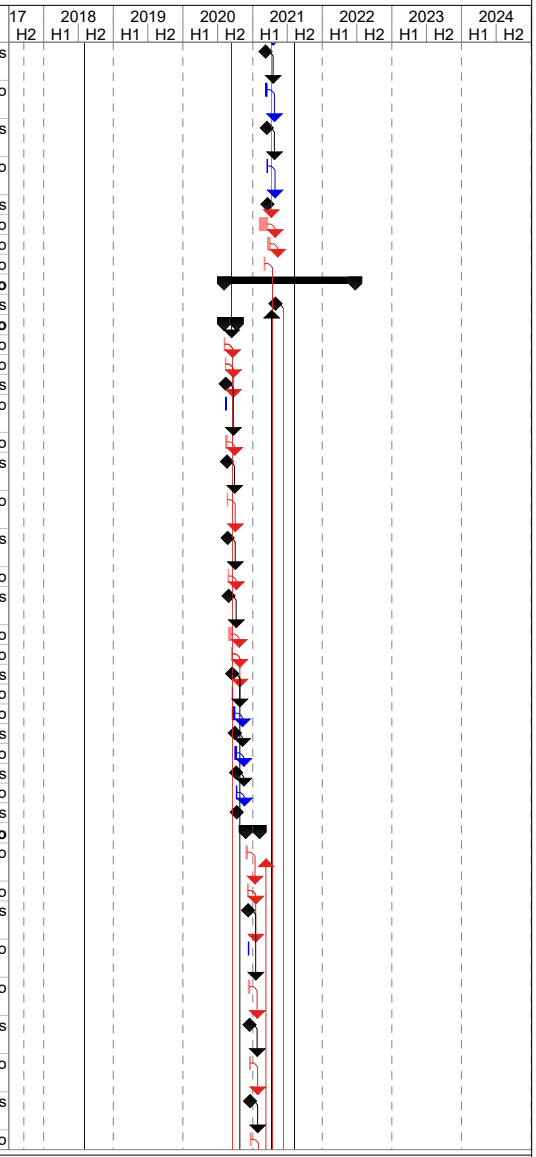
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
921	921	4.38.2	4.9.3.2	4.7.9.3 Submit Deliverable Expectation Document for Successful Execution of the System Capacity Plan	0 days	Thu 8/13/20	Thu 8/13/20	Yes
922	922	4.38.1	4.9.3.2	4.7.9.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of the System Capacity Plan	2 days	Fri 8/14/20	Mon 8/17/20	No
923	923	4.9.3	4.9.3.2	4.7.9.5 Review Deliverable Expectation Document for Successful Execution of the System Capacity Plan	5 days	Fri 8/14/20	Thu 8/20/20	No
924	924	4.9.3	4.9.3.2	4.7.9.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of the System Capacity Plan	0 days	Thu 8/20/20	Thu 8/20/20	Yes
925	925	4.9.2	4.9.3.2	4.7.9.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of the System Capacity Plan	3 days	Fri 8/21/20	Tue 8/25/20	No
926	926	4.38.2	4.9.3.2	4.7.9.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of the System Capacity Plan	0 days	Tue 8/25/20	Tue 8/25/20	Yes
927	927	4.9.3	4.9.3.2	4.7.9.9 Review and Verify Feedback	3 days	Wed 8/26/20	Fri 8/28/20	No
928	928	4.9.3	4.9.3.2	4.7.9.10 Approve Deliverable Expectation Document for Successful Execution of the System Capacity Plan	0 days	Fri 8/28/20	Fri 8/28/20	Yes
929	**929**	**4.9.1**	**4.9.3.2**	**4.7.9.11 Execute Successful Execution of the System Capacity Plan**	**20 days**	**Mon 8/31/20**	**Mon 9/28/20**	**No**
930	930	4.9.2	4.9.3.2	4.7.9.11.1 Test Configuration	20 days	Mon 8/31/20	Mon 9/28/20	No
931	931	4.9.2	4.9.3.2	4.7.9.11.2 Baseline Configuration	20 days	Mon 8/31/20	Mon 9/28/20	No
932	932	4.9.2	4.9.3.2	4.7.9.12 QA Deliverable	3 days	Tue 9/29/20	Thu 10/1/20	No
933	933	4.38.2	4.9.3.2	4.7.9.13 Submit Successful Execution of the System Capacity Plan	0 days	Thu 10/1/20	Thu 10/1/20	Yes
934	934	4.38.1	4.9.3.2	4.7.9.14 Conduct Walk-through for Successful Execution of the System Capacity Plan	2 days	Fri 10/2/20	Mon 10/5/20	No
935	935	4.9.3	4.9.3.2	4.7.9.15 Review Successful Execution of the System Capacity Plan	10 days	Fri 10/2/20	Thu 10/15/20	No
936	936	4.9.3	4.9.3.2	4.7.9.16 Provide Feedback on Successful Execution of the System Capacity P	0 days	Thu 10/15/20	Thu 10/15/20	Yes
937	937	4.9.2	4.9.3.2	4.7.9.17 Incorporate Feedback on Successful Execution of the System Capacity Plan	5 days	Fri 10/16/20	Thu 10/22/20	No
938	938	4.38.2	4.9.3.2	4.7.9.18 Submit Final Version of Successful Execution of the System Capacity Plan	0 days	Thu 10/22/20	Thu 10/22/20	Yes
939	939	4.9.3	4.9.3.2	4.7.9.19 Review and Verify Feedback on Successful Execution of the System Capacity Plan	3 days	Fri 10/23/20	Tue 10/27/20	No
940	940	4.9.3	4.9.3.2	4.7.9.20 Approve Successful Execution of the System Capacity Plan	0 days	Tue 10/27/20	Tue 10/27/20	Yes
941	**941**	**4.13**	**4.13.3.2**	**4.7.10 DELIVERABLE: Successful Execution of Application Development Plan**	**54 days**	**Wed 12/30/20**	**Thu 3/18/21**	**No**
942	942	4.13.1	4.13.3.2	4.7.10.1 Develop Deliverable Expectation Document for Successful Execution of Application Development Plan	10 days	Wed 12/30/20	Wed 1/13/21	No
943	943	4.13.2	4.13.3.2	4.7.10.2 QA Deliverable Expectation Document	2 days	Thu 1/14/21	Fri 1/15/21	No
944	944	4.38.2	4.13.3.2	4.7.10.3 Submit Deliverable Expectation Document for Successful Execution of Application Development Plan	0 days	Fri 1/15/21	Fri 1/15/21	Yes
945	945	4.38.1	4.13.3.2	4.7.10.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Application Development Plan	2 days	Tue 1/19/21	Wed 1/20/21	No
946	946	4.13.3	4.13.3.2	4.7.10.5 Review Deliverable Expectation Document for Successful Execution of Application Development Plan	5 days	Tue 1/19/21	Mon 1/25/21	No
947	947	4.13.3	4.13.3.2	4.7.10.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Application Development Plan	0 days	Mon 1/25/21	Mon 1/25/21	Yes
948	948	4.13.2	4.13.3.2	4.7.10.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Application Development Plan	3 days	Tue 1/26/21	Thu 1/28/21	No
949	949	4.38.2	4.13.3.2	4.7.10.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Application Development Plan	0 days	Thu 1/28/21	Thu 1/28/21	Yes
950	950	4.13.3	4.13.3.2	4.7.10.9 Review and Verify Feedback	3 days	Fri 1/29/21	Tue 2/2/21	No
951	951	4.13.3	4.13.3.2	4.7.10.10 Approve Deliverable Expectation Document for Successful Execution of Application Development Plan	0 days	Tue 2/2/21	Tue 2/2/21	Yes
952	952	4.13.1	4.13.3.2	4.7.10.11 Develop Successful Execution of Application Development Plan	15 days	Wed 2/3/21	Wed 2/24/21	No
953	953	4.13.2	4.13.3.2	4.7.10.12 QA Deliverable	3 days	Thu 2/25/21	Mon 3/1/21	No
954	954	4.38.2	4.13.3.2	4.7.10.13 Submit Successful Execution of Application Development Plan	0 days	Mon 3/1/21	Mon 3/1/21	Yes
955	955	4.38.1	4.13.3.2	4.7.10.14 Conduct Walk-through for Successful Execution of Application Development Plan	2 days	Tue 3/2/21	Wed 3/3/21	No
956	956	4.13.3	4.13.3.2	4.7.10.15 Review Successful Execution of Application Development Plan	5 days	Tue 3/2/21	Mon 3/8/21	No



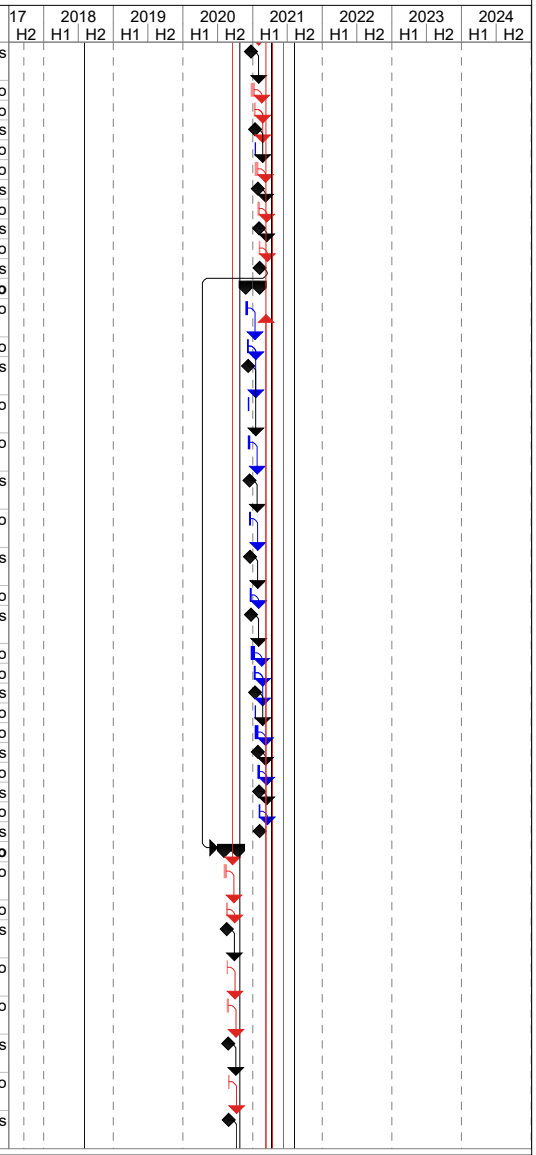
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
957	957	4.13.3	4.13.3.2	4.7.10.16 Provide Feedback on Successful Execution of Application Development Plan	0 days	Mon 3/8/21	Mon 3/8/21	Yes
958	958	4.13.2	4.13.3.2	4.7.10.17 Incorporate Feedback on Successful Execution of Application Development Plan	5 days	Tue 3/9/21	Mon 3/15/21	No
959	959	4.38.2	4.13.3.2	4.7.10.18 Submit Final Version of Successful Execution of Application Development Plan	0 days	Mon 3/15/21	Mon 3/15/21	Yes
960	960	4.13.3	4.13.3.2	4.7.10.19 Review and Verify Feedback on Successful Execution of Application Development Plan	3 days	Tue 3/16/21	Thu 3/18/21	No
961	961	4.13.3	4.13.3.2	4.7.10.20 Approve Successful Execution of Application Development Plan	0 days	Thu 3/18/21	Thu 3/18/21	Yes
962	962	4.28.2.5		4.7.11 Set Up, Deliver and Deploy UAT Environment	30 days	Thu 2/4/21	Thu 3/18/21	No
963	963	4.28.2.5		4.7.12 Update Hardware and Software List	10 days	Fri 3/19/21	Thu 4/1/21	No
964	964	4.30.2.2		4.7.13 UAT Training Continued	5 days	Mon 3/1/21	Fri 3/5/21	No
965	**965**	**1.2.1.4**		**5 Transition**	**472 days**	**Mon 8/3/20**	**Wed 6/22/22**	**No**
966	966	**1.2.1.4**		5.1 Transition Start	0 days	Thu 4/29/21	Thu 4/29/21	Yes
967	**967**	**4.20**	**4.20.3.1**	**5.2 DELIVERABLE: Training Management Plan**	**48 days**	**Mon 8/3/20**	**Thu 10/8/20**	**No**
968	968	4.20.1	4.20.3.1	5.2.1 Develop Deliverable Expectation Document for Training Management Plan	5 days	Mon 8/3/20	Fri 8/7/20	No
969	969	4.20.2	4.20.3.1	5.2.2 QA Deliverable Expectation Document	2 days	Mon 8/10/20	Tue 8/11/20	No
970	970	4.38.2	4.20.3.1	5.2.3 Submit Deliverable Expectation Document for Training Management Plan	0 days	Tue 8/11/20	Tue 8/11/20	Yes
971	971	4.38.1	4.20.3.1	5.2.4 Conduct Walk-through for Deliverable Expectation Document for Training Management Plan	2 days	Wed 8/12/20	Thu 8/13/20	No
972	972	4.20.3	4.20.3.1	5.2.5 Review Deliverable Expectation Document for Training Management Plan	5 days	Wed 8/12/20	Tue 8/18/20	No
973	973	4.20.3	4.20.3.1	5.2.6 Provide Feedback on Deliverable Expectation Document for Training Management Plan	0 days	Tue 8/18/20	Tue 8/18/20	Yes
974	974	4.20.2	4.20.3.1	5.2.7 Incorporate Feedback on Deliverable Expectation Document for Training Management Plan	3 days	Wed 8/19/20	Fri 8/21/20	No
975	975	4.38.2	4.20.3.1	5.2.8 Submit Final Version of Deliverable Expectation Document for Training Management Plan	0 days	Fri 8/21/20	Fri 8/21/20	Yes
976	976	4.20.3	4.20.3.1	5.2.9 Review and Verify Feedback	3 days	Mon 8/24/20	Wed 8/26/20	No
977	977	4.20.3	4.20.3.1	5.2.10 Approve Deliverable Expectation Document for Training Management Plan	0 days	Wed 8/26/20	Wed 8/26/20	Yes
978	978	4.20.1	4.20.3.1	5.2.11 Develop Training Management Plan	10 days	Thu 8/27/20	Thu 9/10/20	No
979	979	4.20.2	4.20.3.1	5.2.12 QA Deliverable	2 days	Fri 9/11/20	Mon 9/14/20	No
980	980	4.38.2	4.20.3.1	5.2.13 Submit Training Management Plan	0 days	Mon 9/14/20	Mon 9/14/20	Yes
981	981	4.38.1	4.20.3.1	5.2.14 Conduct Walk-through for Training Management Plan	2 days	Tue 9/15/20	Wed 9/16/20	No
982	982	4.20.3	4.20.3.1	5.2.15 Review Training Management Plan	10 days	Tue 9/15/20	Mon 9/28/20	No
983	983	4.20.3	4.20.3.1	5.2.16 Provide Feedback on Training Management Plan	0 days	Mon 9/28/20	Mon 9/28/20	Yes
984	984	4.20.2	4.20.3.1	5.2.17 Incorporate Feedback on Training Management Plan	5 days	Tue 9/29/20	Mon 10/5/20	No
985	985	4.38.2	4.20.3.1	5.2.18 Submit Final Version of Training Management Plan	0 days	Mon 10/5/20	Mon 10/5/20	Yes
986	986	4.20.3	4.20.3.1	5.2.19 Review and Verify Feedback on Training Management Plan	3 days	Tue 10/6/20	Thu 10/8/20	No
987	987	4.20.1	4.20.3.1	5.2.20 Approve Training Management Plan	0 days	Thu 10/8/20	Thu 10/8/20	Yes
988	**988**	**4.30**	**4.30.3.5**	**5.3 DELIVERABLE: User Acceptance Test Training Materials**	**48 days**	**Wed 11/25/20**	**Fri 2/5/21**	**No**
989	989	4.30.1	4.30.3.5	5.3.1 Develop Deliverable Expectation Document for User Acceptance Test Training Materials	5 days	Wed 11/25/20	Thu 12/3/20	No
990	990	4.30.2	4.30.3.5	5.3.2 QA Deliverable Expectation Document	2 days	Fri 12/4/20	Mon 12/7/20	No
991	991	4.38.2	4.30.3.5	5.3.3 Submit Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Mon 12/7/20	Mon 12/7/20	Yes
992	992	4.38.1	4.30.3.5	5.3.4 Conduct Walk-through for Deliverable Expectation Document for User Acceptance Test Training Materials	2 days	Tue 12/8/20	Wed 12/9/20	No
993	993	4.30.3	4.30.3.5	5.3.5 Review Deliverable Expectation Document for User Acceptance Test Training Materials	5 days	Tue 12/8/20	Mon 12/14/20	No
994	994	4.30.3	4.30.3.5	5.3.6 Provide Feedback on Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Mon 12/14/20	Mon 12/14/20	Yes
995	995	4.30.2	4.30.3.5	5.3.7 Incorporate Feedback on Deliverable Expectation Document for User Acceptance Test Training Materials	3 days	Tue 12/15/20	Thu 12/17/20	No
996	996	4.38.2	4.30.3.5	5.3.8 Submit Final Version of Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Thu 12/17/20	Thu 12/17/20	Yes
997	997	4.30.3	4.30.3.5	5.3.9 Review and Verify Feedback	3 days	Fri 12/18/20	Tue 12/22/20	No



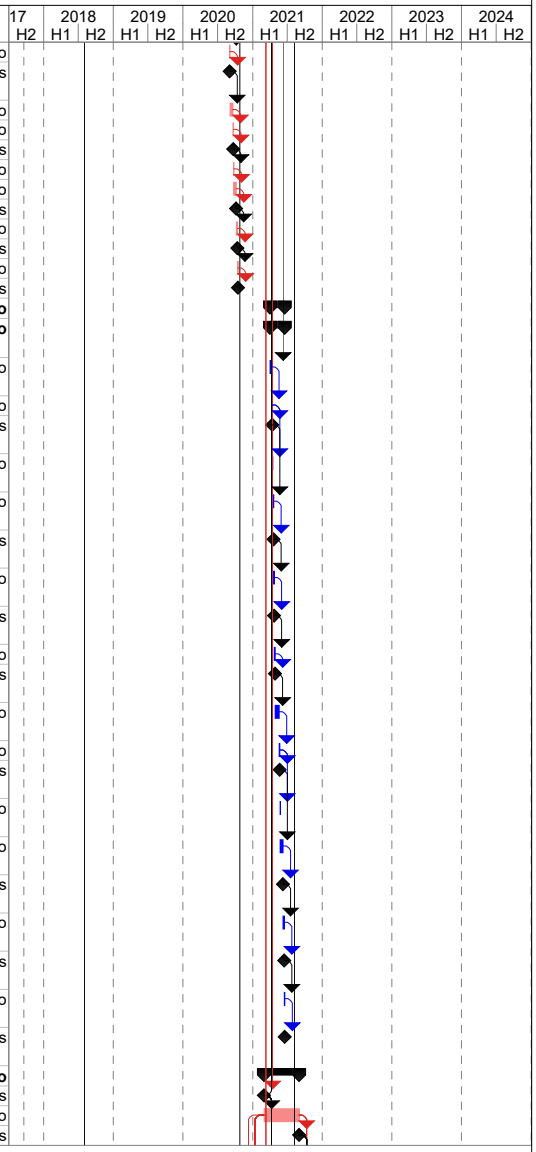
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
998	998	4.30.3	4.30.3.5	5.3.10 Approve Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Tue 12/22/20	Tue 12/22/20	Yes
999	999	4.30.1	4.30.3.5	5.3.11 Develop User Acceptance Test Training Materials	10 days	Wed 12/23/20	Thu 1/7/21	No
1000	1000	4.30.2	4.30.3.5	5.3.12 QA Deliverable	3 days	Fri 1/8/21	Tue 1/12/21	No
1001	1001	4.38.2	4.30.3.5	5.3.13 Submit User Acceptance Test Training Materials	0 days	Tue 1/12/21	Tue 1/12/21	Yes
1002	1002	4.38.1	4.30.3.5	5.3.14 Conduct Walk-through for User Acceptance Test Training Materials	2 days	Wed 1/13/21	Thu 1/14/21	No
1003	1003	4.30.3	4.30.3.5	5.3.15 Review User Acceptance Test Training Materials	10 days	Wed 1/13/21	Wed 1/27/21	No
1004	1004	4.30.3	4.30.3.5	5.3.16 Provide Feedback on User Acceptance Test Training Materials	0 days	Wed 1/27/21	Wed 1/27/21	Yes
1005	1005	4.30.2	4.30.3.5	5.3.17 Incorporate Feedback on User Acceptance Test Training Materials	4 days	Thu 1/28/21	Tue 2/2/21	No
1006	1006	4.38.2	4.30.3.5	5.3.18 Submit Final Version of User Acceptance Test Training Materials	0 days	Tue 2/2/21	Tue 2/2/21	Yes
1007	1007	4.30.3	4.30.3.5	5.3.19 Review and Verify User Acceptance Test Training Materials	3 days	Wed 2/3/21	Fri 2/5/21	No
1008	1008	4.30.1	4.30.3.5	5.3.20 Approve User Acceptance Test Training Materials	0 days	Fri 2/5/21	Fri 2/5/21	Yes
1009	**1009**	**4.30**	**4.30.3.6**	**5.4 DELIVERABLE: User Acceptance Test Plan Template**	**48 days**	**Wed 11/25/20**	**Fri 2/5/21**	**No**
1010	1010	4.30.1	4.30.3.6	5.4.1 Develop Deliverable Expectation Document for User Acceptance Test Training Materials	5 days	Wed 11/25/20	Thu 12/3/20	No
1011	1011	4.30.2	4.30.3.6	5.4.2 QA Deliverable Expectation Document	2 days	Fri 12/4/20	Mon 12/7/20	No
1012	1012	4.38.2	4.30.3.6	5.4.3 Submit Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Mon 12/7/20	Mon 12/7/20	Yes
1013	1013	4.38.1	4.30.3.6	5.4.4 Conduct Walk-through for Deliverable Expectation Document for User Acceptance Test Training Materials	2 days	Tue 12/8/20	Wed 12/9/20	No
1014	1014	4.30.3	4.30.3.6	5.4.5 Review Deliverable Expectation Document for User Acceptance Test Training Materials	5 days	Tue 12/8/20	Mon 12/14/20	No
1015	1015	4.30.3	4.30.3.6	5.4.6 Provide Feedback on Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Mon 12/14/20	Mon 12/14/20	Yes
1016	1016	4.30.2	4.30.3.6	5.4.7 Incorporate Feedback on Deliverable Expectation Document for User Acceptance Test Training Materials	3 days	Tue 12/15/20	Thu 12/17/20	No
1017	1017	4.38.2	4.30.3.6	5.4.8 Submit Final Version of Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Thu 12/17/20	Thu 12/17/20	Yes
1018	1018	4.30.3	4.30.3.6	5.4.9 Review and Verify Feedback	3 days	Fri 12/18/20	Tue 12/22/20	No
1019	1019	4.30.3	4.30.3.6	5.4.10 Approve Deliverable Expectation Document for User Acceptance Test Training Materials	0 days	Tue 12/22/20	Tue 12/22/20	Yes
1020	1020	4.30.1	4.30.3.6	5.4.11 Develop User Acceptance Test Training Materials	10 days	Wed 12/23/20	Thu 1/7/21	No
1021	1021	4.30.2	4.30.3.6	5.4.12 QA Deliverable	3 days	Fri 1/8/21	Tue 1/12/21	No
1022	1022	4.38.2	4.30.3.6	5.4.13 Submit User Acceptance Test Training Materials	0 days	Tue 1/12/21	Tue 1/12/21	Yes
1023	1023	4.38.1	4.30.3.6	5.4.14 Conduct Walk-through for User Acceptance Test Training Materials	2 days	Wed 1/13/21	Thu 1/14/21	No
1024	1024	4.30.3	4.30.3.6	5.4.15 Review User Acceptance Test Training Materials	10 days	Wed 1/13/21	Wed 1/27/21	No
1025	1025	4.30.3	4.30.3.6	5.4.16 Provide Feedback on User Acceptance Test Training Materials	0 days	Wed 1/27/21	Wed 1/27/21	Yes
1026	1026	4.30.2	4.30.3.6	5.4.17 Incorporate Feedback on User Acceptance Test Training Materials	4 days	Thu 1/28/21	Tue 2/2/21	No
1027	1027	4.38.2	4.30.3.6	5.4.18 Submit Final Version of User Acceptance Test Training Materials	0 days	Tue 2/2/21	Tue 2/2/21	Yes
1028	1028	4.30.3	4.30.3.6	5.4.19 Review and Verify User Acceptance Test Training Materials	3 days	Wed 2/3/21	Fri 2/5/21	No
1029	1029	4.30.1	4.30.3.6	5.4.20 Approve User Acceptance Test Training Materials	0 days	Fri 2/5/21	Fri 2/5/21	Yes
1030	**1030**	**4.21**	**4.21.3.1**	**5.5 DELIVERABLE: Web-Based Training Development Plan**	**53 days**	**Mon 8/3/20**	**Thu 10/15/20**	**No**
1031	1031	4.21.1	4.21.3.1	5.5.1 Develop Deliverable Expectation Document for Web-Based Training Development Plan	10 days	Mon 8/3/20	Fri 8/14/20	No
1032	1032	4.21.2	4.21.3.1	5.5.2 QA Deliverable Expectation Document	2 days	Mon 8/17/20	Tue 8/18/20	No
1033	1033	4.38.2	4.21.3.1	5.5.3 Submit Deliverable Expectation Document for Web-Based Training Development Plan	0 days	Tue 8/18/20	Tue 8/18/20	Yes
1034	1034	4.38.1	4.21.3.1	5.5.4 Conduct Walk-through for Deliverable Expectation Document for Web-Based Training Development Plan	2 days	Wed 8/19/20	Thu 8/20/20	No
1035	1035	4.21.3	4.21.3.1	5.5.5 Review Deliverable Expectation Document for Web-Based Training Development Plan	5 days	Wed 8/19/20	Tue 8/25/20	No
1036	1036	4.21.3	4.21.3.1	5.5.6 Provide Feedback on Deliverable Expectation Document for Web-Based Training Development Plan	0 days	Tue 8/25/20	Tue 8/25/20	Yes
1037	1037	4.21.2	4.21.3.1	5.5.7 Incorporate Feedback on Deliverable Expectation Document for Web-Based Training Development Plan	3 days	Wed 8/26/20	Fri 8/28/20	No
1038	1038	4.38.2	4.21.3.1	5.5.8 Submit Final Version of Deliverable Expectation Document for Web-Based Training Development Plan	0 days	Fri 8/28/20	Fri 8/28/20	Yes



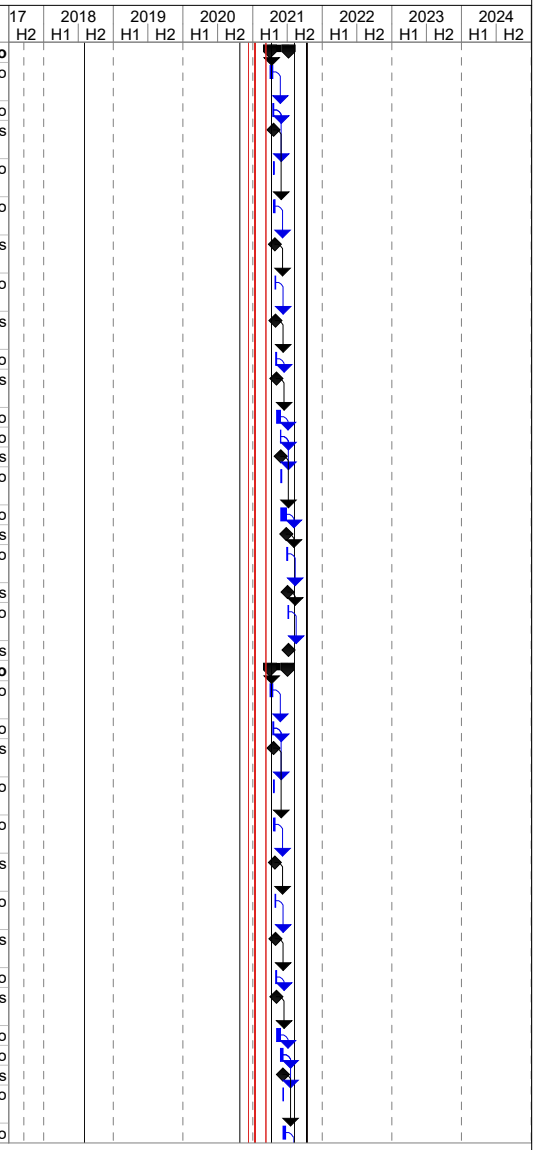
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1039	1039	4.21.3	4.21.3.1	5.5.9 Review and Verify Feedback	3 days	Mon 8/31/20	Wed 9/2/20	No
1040	1040	4.21.3	4.21.3.1	5.5.10 Approve Deliverable Expectation Document for Web-Based Training Development Plan	0 days	Wed 9/2/20	Wed 9/2/20	Yes
1041	1041	4.21.1	4.21.3.1	5.5.11 Develop Web-Based Training Development Plan	10 days	Thu 9/3/20	Thu 9/17/20	No
1042	1042	4.21.2	4.21.3.1	5.5.12 QA Deliverable	2 days	Fri 9/18/20	Mon 9/21/20	No
1043	1043	4.38.2	4.21.3.1	5.5.13 Submit Web-Based Training Development Plan	0 days	Mon 9/21/20	Mon 9/21/20	Yes
1044	1044	4.38.1	4.21.3.1	5.5.14 Conduct Walk-through for Web-Based Training Development Plan	2 days	Tue 9/22/20	Wed 9/23/20	No
1045	1045	4.21.3	4.21.3.1	5.5.15 Review Web-Based Training Development Plan	10 days	Tue 9/22/20	Mon 10/5/20	No
1046	1046	4.21.3	4.21.3.1	5.5.16 Provide Feedback on Web-Based Training Development Plan	0 days	Mon 10/5/20	Mon 10/5/20	Yes
1047	1047	4.21.2	4.21.3.1	5.5.17 Incorporate Feedback on Web-Based Training Development Plan	5 days	Tue 10/6/20	Mon 10/12/20	No
1048	1048	4.38.2	4.21.3.1	5.5.18 Submit Final Version of Web-Based Training Development Plan	0 days	Mon 10/12/20	Mon 10/12/20	Yes
1049	1049	4.21.3	4.21.3.1	5.5.19 Review and Verify Web-Based Training Development Plan	3 days	Tue 10/13/20	Thu 10/15/20	No
1050	1050	4.21.1	4.21.3.1	5.5.20 Approve Web-Based Training Development Plan	0 days	Thu 10/15/20	Thu 10/15/20	Yes
1051	**1051**	**1.2.1.4**		**5.6 Execution Deliverables from the Construction Phase**	**54 days**	**Thu 4/1/21**	**Thu 6/17/21**	**No**
1052	**1052**	**4.11**	**4.11.3.2**	**5.6.1 DELIVERABLE: Successful Execution of Hardware and Software Configuration Plan**	**54 days**	**Thu 4/1/21**	**Thu 6/17/21**	**No**
1053	1053	4.11.1	4.11.3.2	5.6.1.1 Develop Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration Plan	5 days	Thu 4/1/21	Thu 4/8/21	No
1054	1054	4.11.2	4.11.3.2	5.6.1.2 QA Deliverable Expectation Document	2 days	Fri 4/9/21	Mon 4/12/21	No
1055	1055	4.38.2	4.11.3.2	5.6.1.3 Submit Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration Plan	0 days	Mon 4/12/21	Mon 4/12/21	Yes
1056	1056	4.38.1	4.11.3.2	5.6.1.4 Conduct Walk-through for Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration	2 days	Tue 4/13/21	Wed 4/14/21	No
1057	1057	4.11.3	4.11.3.2	5.6.1.5 Review Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration Plan	5 days	Tue 4/13/21	Mon 4/19/21	No
1058	1058	4.11.3	4.11.3.2	5.6.1.6 Provide Feedback on Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration	0 days	Mon 4/19/21	Mon 4/19/21	Yes
1059	1059	4.11.2	4.11.3.2	5.6.1.7 Incorporate Feedback on Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration	3 days	Tue 4/20/21	Thu 4/22/21	No
1060	1060	4.38.2	4.11.3.2	5.6.1.8 Submit Final Version of Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration	0 days	Thu 4/22/21	Thu 4/22/21	Yes
1061	1061	4.11.3	4.11.3.2	5.6.1.9 Review and Verify Feedback	3 days	Fri 4/23/21	Tue 4/27/21	No
1062	1062	4.11.3	4.11.3.2	5.6.1.10 Approve Deliverable Expectation Document for Production Successful Execution of Hardware and Software Configuration Plan	0 days	Tue 4/27/21	Tue 4/27/21	Yes
1063	1063	4.11.2	4.11.3.2	5.6.1.11 Develop Production Successful Execution of Production Hardware and Software Configuration Plan	15 days	Wed 4/28/21	Tue 5/18/21	No
1064	1064	4.11.2	4.11.3.2	5.6.1.12 QA Deliverable	3 days	Wed 5/19/21	Fri 5/21/21	No
1065	1065	4.38.2	4.11.3.2	5.6.1.13 Submit Production Successful Execution of Production Hardware and Software Configuration Plan	0 days	Fri 5/21/21	Fri 5/21/21	Yes
1066	1066	4.38.1	4.11.3.2	5.6.1.14 Conduct Walk-through for Production Successful Execution of Production Hardware and Software Configuration Plan	2 days	Mon 5/24/21	Tue 5/25/21	No
1067	1067	4.11.3	4.11.3.2	5.6.1.15 Review Production Successful Execution of Production Hardware and Software Configuration Plan	10 days	Mon 5/24/21	Mon 6/7/21	No
1068	1068	4.11.3	4.11.3.2	5.6.1.16 Provide Feedback on Production Successful Execution of Production Hardware and Software Configuration Plan	0 days	Mon 6/7/21	Mon 6/7/21	Yes
1069	1069	4.11.2	4.11.3.2	5.6.1.17 Incorporate Feedback on Production Successful Execution of Production Hardware and Software Configuration Plan	5 days	Tue 6/8/21	Mon 6/14/21	No
1070	1070	4.38.2	4.11.3.2	5.6.1.18 Submit Final Version of Production Successful Execution of Production Hardware and Software Configuration Plan	0 days	Mon 6/14/21	Mon 6/14/21	Yes
1071	1071	4.11.3	4.11.3.2	5.6.1.19 Review and Verify Feedback on Production Successful Execution of Production Hardware and Software Configuration Plan	3 days	Tue 6/15/21	Thu 6/17/21	No
1072	1072	4.11.3	4.11.3.2	5.6.1.20 Approve Production Successful Execution of Production Hardware and Software Configuration Plan	0 days	Thu 6/17/21	Thu 6/17/21	Yes
1073	**1073**	**1.2.1.4**		**5.7 UAT**	**130 days**	**Mon 3/1/21**	**Tue 8/31/21**	**No**
1074	1074	4.30		5.7.1 UAT Start	0 days	Mon 3/1/21	Mon 3/1/21	Yes
1075	1075	4.30		5.7.2 User Acceptance Testing	130 days	Mon 3/1/21	Tue 8/31/21	No
1076	1076	4.30		5.7.3 UAT Complete	0 days	Tue 8/31/21	Tue 8/31/21	Yes



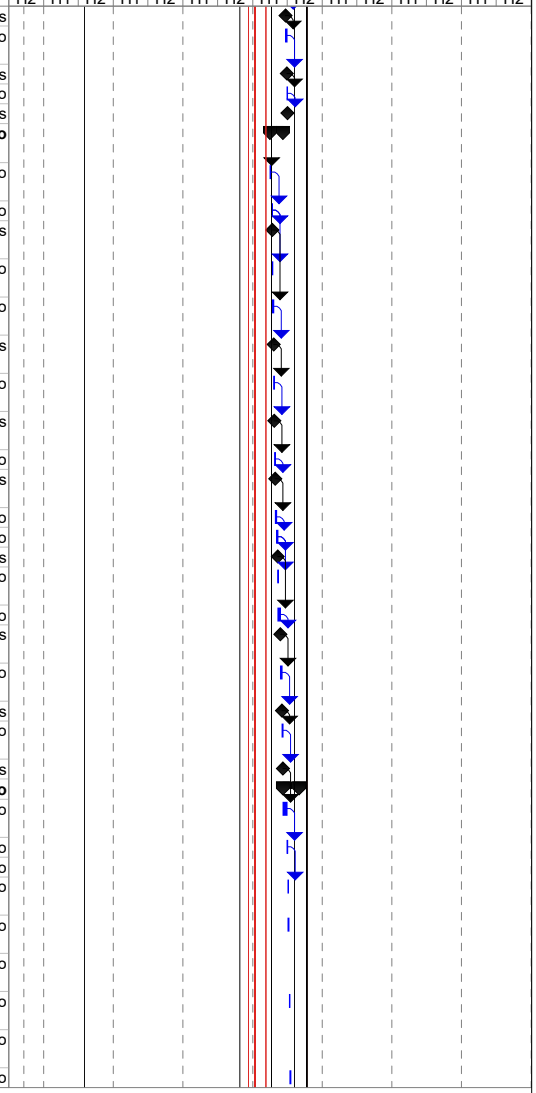
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1077	**1077**	**4.16**	**4.16.3.2**	**5.8 DELIVERABLE: Successful Execution of the Data Governance Plan**	**68 days**	**Thu 4/1/21**	**Wed 7/7/21**	**No**
1078	1078	4.16.1	4.16.3.2	5.8.1 Develop Deliverable Expectation Document for Successful Execution of Data Governance Plan	10 days	Thu 4/1/21	Thu 4/15/21	No
1079	1079	4.16.2	4.16.3.2	5.8.2 QA Deliverable Expectation Document	2 days	Fri 4/16/21	Mon 4/19/21	No
1080	1080	4.38.2	4.16.3.2	5.8.3 Submit Deliverable Expectation Document for Successful Execution of Data Governance Plan	0 days	Mon 4/19/21	Mon 4/19/21	Yes
1081	1081	4.38.1	4.16.3.2	5.8.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Data Governance Plan	2 days	Tue 4/20/21	Wed 4/21/21	No
1082	1082	4.16.3	4.16.3.2	5.8.5 Review Deliverable Expectation Document for Successful Execution of Data Governance Plan	5 days	Tue 4/20/21	Mon 4/26/21	No
1083	1083	4.16.3	4.16.3.2	5.8.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Data Governance Plan	0 days	Mon 4/26/21	Mon 4/26/21	Yes
1084	1084	4.16.2	4.16.3.2	5.8.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Data Governance Plan	3 days	Tue 4/27/21	Thu 4/29/21	No
1085	1085	4.38.2	4.16.3.2	5.8.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Data Governance Plan	0 days	Thu 4/29/21	Thu 4/29/21	Yes
1086	1086	4.16.3	4.16.3.2	5.8.9 Review and Verify Feedback	3 days	Fri 4/30/21	Tue 5/4/21	No
1087	1087	4.16.3	4.16.3.2	5.8.10 Approve Deliverable Expectation Document for Successful Execution of Data Governance Plan	0 days	Tue 5/4/21	Tue 5/4/21	Yes
1088	1088	4.16.1	4.16.3.2	5.8.11 Develop Successful Execution of Data Governance Plan	15 days	Wed 5/5/21	Tue 5/25/21	No
1089	1089	4.16.2	4.16.3.2	5.8.12 QA Deliverable	2 days	Wed 5/26/21	Thu 5/27/21	No
1090	1090	4.38.2	4.16.3.2	5.8.13 Submit Successful Execution of Data Governance Plan	0 days	Thu 5/27/21	Thu 5/27/21	Yes
1091	1091	4.38.1	4.16.3.2	5.8.14 Conduct Walk-through for Successful Execution of Data Governance Plan	2 days	Fri 5/28/21	Tue 6/1/21	No
1092	1092	4.16.3	4.16.3.2	5.8.15 Review Successful Execution of Data Governance Plan	20 days	Fri 5/28/21	Fri 6/25/21	No
1093	1093	4.16.3	4.16.3.2	5.8.16 Provide Feedback on Successful Execution of Data Governance Plan	0 days	Fri 6/25/21	Fri 6/25/21	Yes
1094	1094	4.16.2	4.16.3.2	5.8.17 Incorporate Feedback on Successful Execution of Data Governance Plan	5 days	Mon 6/28/21	Fri 7/2/21	No
1095	1095	4.38.2	4.16.3.2	5.8.18 Submit Final Version of Successful Execution of Data Governance Plan	0 days	Fri 7/2/21	Fri 7/2/21	Yes
1096	1096	4.16.3	4.16.3.2	5.8.19 Review and Verify Feedback on Successful Execution of Data Governance Plan	3 days	Mon 7/5/21	Wed 7/7/21	No
1097	1097	4.16.3	4.16.3.2	5.8.20 Approve Successful Execution of Data Governance Plan	0 days	Wed 7/7/21	Wed 7/7/21	Yes
1098	**1098**	**4.19**	**4.19.3.2**	**5.9 DELIVERABLE: Successful Execution of the Test Management Plan**	**64 days**	**Thu 4/1/21**	**Thu 7/1/21**	**No**
1099	1099	4.19.1	4.19.3.2	5.9.1 Develop Deliverable Expectation Document for Successful Execution of Test Management Plan	10 days	Thu 4/1/21	Thu 4/15/21	No
1100	1100	4.19.2	4.19.3.2	5.9.2 QA Deliverable Expectation Document	2 days	Fri 4/16/21	Mon 4/19/21	No
1101	1101	4.38.2	4.19.3.2	5.9.3 Submit Deliverable Expectation Document for Successful Execution of Test Management Plan	0 days	Mon 4/19/21	Mon 4/19/21	Yes
1102	1102	4.38.1	4.19.3.2	5.9.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Test Management Plan	2 days	Tue 4/20/21	Wed 4/21/21	No
1103	1103	4.19.3	4.19.3.2	5.9.5 Review Deliverable Expectation Document for Successful Execution of Test Management Plan	5 days	Tue 4/20/21	Mon 4/26/21	No
1104	1104	4.19.3	4.19.3.2	5.9.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Test Management Plan	0 days	Mon 4/26/21	Mon 4/26/21	Yes
1105	1105	4.19.2	4.19.3.2	5.9.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Test Management Plan	3 days	Tue 4/27/21	Thu 4/29/21	No
1106	1106	4.38.2	4.19.3.2	5.9.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Test Management Plan	0 days	Thu 4/29/21	Thu 4/29/21	Yes
1107	1107	4.19.3	4.19.3.2	5.9.9 Review and Verify Feedback	3 days	Fri 4/30/21	Tue 5/4/21	No
1108	1108	4.19.3	4.19.3.2	5.9.10 Approve Deliverable Expectation Document for Successful Execution of Test Management Plan	0 days	Tue 5/4/21	Tue 5/4/21	Yes
1109	1109	4.19.1	4.19.3.2	5.9.11 Develop Successful Execution of Test Management Plan	15 days	Wed 5/5/21	Tue 5/25/21	No
1110	1110	4.19.2	4.19.3.2	5.9.12 QA Deliverable	8 days	Wed 5/26/21	Mon 6/7/21	No
1111	1111	4.38.2	4.19.3.2	5.9.13 Submit Successful Execution of Test Management Plan	0 days	Mon 6/7/21	Mon 6/7/21	Yes
1112	1112	4.38.1	4.19.3.2	5.9.14 Conduct Walk-through for Successful Execution of Test Management Plan	2 days	Tue 6/8/21	Wed 6/9/21	No
1113	1113	4.19.3	4.19.3.2	5.9.15 Review Successful Execution of Test Management Plan	10 days	Tue 6/8/21	Mon 6/21/21	No



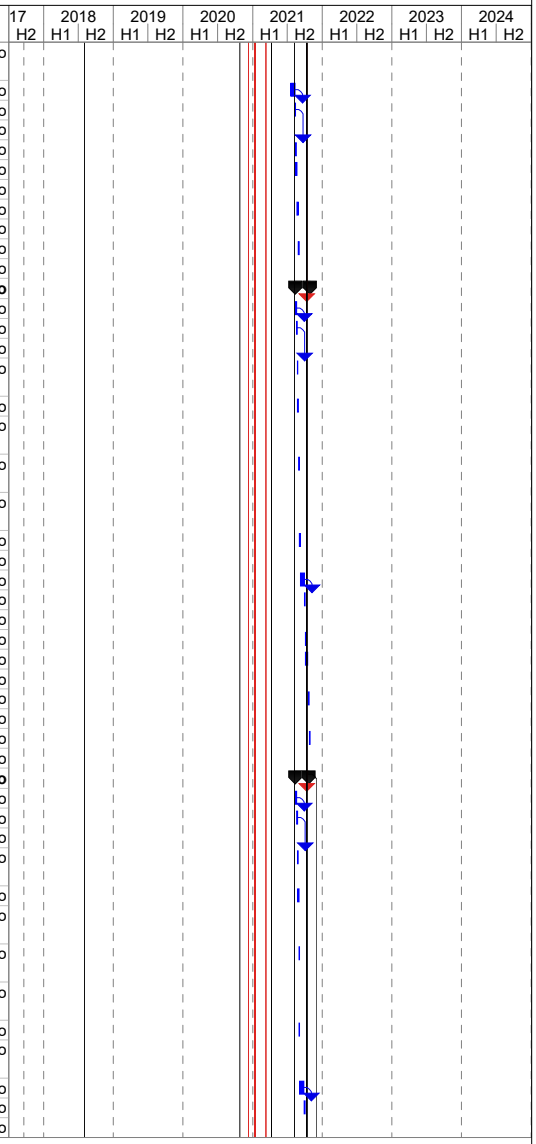
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1114	1114	4.19.3	4.19.3.2	5.9.16 Provide Feedback on Successful Execution of Test Management Plan	0 days	Mon 6/21/21	Mon 6/21/21	Yes
1115	1115	4.19.2	4.19.3.2	5.9.17 Incorporate Feedback on Successful Execution of Test Management Plan	5 days	Tue 6/22/21	Mon 6/28/21	No
1116	1116	4.38.2	4.19.3.2	5.9.18 Submit Final Version of Successful Execution of Test Management Plan	0 days	Mon 6/28/21	Mon 6/28/21	Yes
1117	1117	4.19.3	4.19.3.2	5.9.19 Review and Verify Successful Execution of Test Management Plan	3 days	Tue 6/29/21	Thu 7/1/21	No
1118	1118	4.19.3	4.19.3.2	5.9.20 Approve Successful Execution of Test Management Plan	0 days	Thu 7/1/21	Thu 7/1/21	Yes
1119	**1119**	**4.22**	**4.22.3.2**	**5.10 DELIVERABLE: Successful Execution of the Security Management Plan**	**46 days**	**Thu 4/1/21**	**Mon 6/7/21**	**No**
1120	1120	4.22.1	4.22.3.2	5.10.1 Develop Deliverable Expectation Document for Successful Execution of Security Management Plan	5 days	Thu 4/1/21	Thu 4/8/21	No
1121	1121	4.22.2	4.22.3.2	5.10.2 QA Deliverable Expectation Document	3 days	Fri 4/9/21	Tue 4/13/21	No
1122	1122	4.38.2	4.22.3.2	5.10.3 Submit Deliverable Expectation Document for Successful Execution of Security Management Plan	0 days	Tue 4/13/21	Tue 4/13/21	Yes
1123	1123	4.38.1	4.22.3.2	5.10.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Security Management Plan	2 days	Wed 4/14/21	Thu 4/15/21	No
1124	1124	4.22.3	4.22.3.2	5.10.5 Review Deliverable Expectation Document for Successful Execution of Security Management Plan	5 days	Wed 4/14/21	Tue 4/20/21	No
1125	1125	4.22.3	4.22.3.2	5.10.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Security Management Plan	0 days	Tue 4/20/21	Tue 4/20/21	Yes
1126	1126	4.22.2	4.22.3.2	5.10.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Security Management Plan	3 days	Wed 4/21/21	Fri 4/23/21	No
1127	1127	4.38.2	4.22.3.2	5.10.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Security Management Plan	0 days	Fri 4/23/21	Fri 4/23/21	Yes
1128	1128	4.22.3	4.22.3.2	5.10.9 Review and Verify Feedback	3 days	Mon 4/26/21	Wed 4/28/21	No
1129	1129	4.22.3	4.22.3.2	5.10.10 Approve Deliverable Expectation Document for Successful Execution of Security Management Plan	0 days	Wed 4/28/21	Wed 4/28/21	Yes
1130	1130	4.22.1	4.22.3.2	5.10.11 Develop Successful Execution of Security Management Plan	5 days	Thu 4/29/21	Wed 5/5/21	No
1131	1131	4.22.2	4.22.3.2	5.10.12 QA Deliverable	4 days	Thu 5/6/21	Tue 5/11/21	No
1132	1132	4.38.2	4.22.3.2	5.10.13 Submit Successful Execution of Security Management Plan	0 days	Tue 5/11/21	Tue 5/11/21	Yes
1133	1133	4.38.1	4.22.3.2	5.10.14 Conduct Walk-through for Successful Execution of Security Management Plan	2 days	Wed 5/12/21	Thu 5/13/21	No
1134	1134	4.22.3	4.22.3.2	5.10.15 Review Successful Execution of Security Management Plan	10 days	Wed 5/12/21	Tue 5/25/21	No
1135	1135	4.22.3	4.22.3.2	5.10.16 Provide Feedback on Successful Execution of Security Management Plan	0 days	Tue 5/25/21	Tue 5/25/21	Yes
1136	1136	4.22.2	4.22.3.2	5.10.17 Incorporate Feedback on Successful Execution of Security Management Plan	5 days	Wed 5/26/21	Wed 6/2/21	No
1137	1137	4.38.2	4.22.3.2	5.10.18 Submit Final Version of Successful Execution of Security Management P	0 days	Wed 6/2/21	Wed 6/2/21	Yes
1138	1138	4.22.3	4.22.3.2	5.10.19 Review and Verify Feedback on Successful Execution of Security Management Plan	3 days	Thu 6/3/21	Mon 6/7/21	No
1139	1139	4.22.3	4.22.3.2	5.10.20 Approve Successful Execution of Security Management Plan	0 days	Mon 6/7/21	Mon 6/7/21	Yes
1140	**1140**	**4.17**	**4.17.3.1**	**5.11 DELIVERABLE: Release Management Plan**	**61 days**	**Tue 6/8/21**	**Tue 8/31/21**	**No**
1141	1141	4.17.1	4.17.3.1	5.11.1 Develop Deliverable Expectation Document for Release Management Plan	15 days	Tue 6/8/21	Mon 6/28/21	No
1142	1142	4.17.2	4.17.3.1	5.11.2 QA Deliverable Expectation Document	4 days	Tue 6/29/21	Fri 7/2/21	No
1143	1143	4.38.2	4.17.3.1	5.11.3 Submit Deliverable Expectation Document for Release Management Plan	0 days	Fri 7/2/21	Fri 7/2/21	No
1144	1144	4.38.1	4.17.3.1	5.11.4 Conduct Walk-through for Deliverable Expectation Document for Release Management Plan	2 days	Mon 7/5/21	Tue 7/6/21	No
1145	1145	4.17.2	4.17.3.1	5.11.5 Review Deliverable Expectation Document for Release Management Plan	5 days	Mon 7/5/21	Fri 7/9/21	No
1146	1146	4.17.2	4.17.3.1	5.11.6 Provide Feedback on Deliverable Expectation Document for Release Management Plan	0 days	Fri 7/9/21	Fri 7/9/21	No
1147	1147	4.17.2	4.17.3.1	5.11.7 Incorporate Feedback on Deliverable Expectation Document for Release Management Plan	3 days	Mon 7/12/21	Wed 7/14/21	No
1148	1148	4.38.2	4.17.3.1	5.11.8 Submit Final Version of Deliverable Expectation Document for Release Management Plan	0 days	Wed 7/14/21	Wed 7/14/21	No
1149	1149	4.17.2	4.17.3.1	5.11.9 Review and Verify Feedback	3 days	Thu 7/15/21	Mon 7/19/21	No



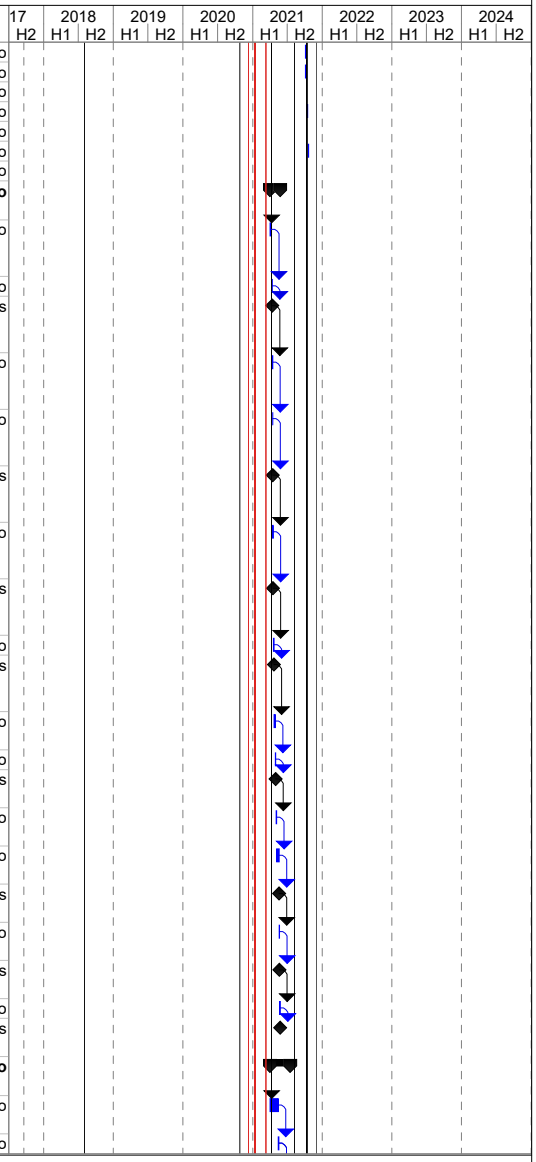
Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Critical	
Milestone		Inactive Task		Manual Summary Rollup		Critical Split	
Summary		Inactive Milestone		Manual Summary		Progress	
Project Summary		Inactive Summary		Start-only		Deadline	

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1150	1150	4.17.2	4.17.3.1	5.11.10 Approve Deliverable Expectation Document for Release Management Plan	0 days	Mon 7/19/21	Mon 7/19/21	No
1151	1151	4.17.1	4.17.3.1	5.11.11 Develop Release Management Plan	15 days	Tue 7/20/21	Mon 8/9/21	No
1152	1152	4.17.2	4.17.3.1	5.11.12 QA Deliverable	3 days	Tue 8/10/21	Thu 8/12/21	No
1153	1153	4.38.2	4.17.3.1	5.11.13 Submit Release Management Plan	0 days	Thu 8/12/21	Thu 8/12/21	No
1154	1154	4.38.1	4.17.3.1	5.11.14 Conduct Walk-through for Release Management Plan	2 days	Fri 8/13/21	Mon 8/16/21	No
1155	1155	4.17.2	4.17.3.1	5.11.15 Review Release Management Plan	5 days	Fri 8/13/21	Thu 8/19/21	No
1156	1156	4.17.2	4.17.3.1	5.11.16 Provide Feedback on Release Management Plan	0 days	Thu 8/19/21	Thu 8/19/21	No
1157	1157	4.17.2	4.17.3.1	5.11.17 Incorporate Feedback on Release Management Plan	5 days	Fri 8/20/21	Thu 8/26/21	No
1158	1158	4.38.2	4.17.3.1	5.11.18 Submit Final Version of Release Management Plan	0 days	Thu 8/26/21	Thu 8/26/21	No
1159	1159	4.17.2	4.17.3.1	5.11.19 Review and Verify Feedback on Release Management Plan	3 days	Fri 8/27/21	Tue 8/31/21	No
1160	1160	4.17.1	4.17.3.1	5.11.20 Approve Release Management Plan	0 days	Tue 8/31/21	Tue 8/31/21	No
1161	**1161**	**4.30**	**4.30.3.2**	**5.12 DELIVERABLE: Acceptance Testing**	**54 days**	**Thu 8/12/21**	**Wed 10/27/21**	**No**
1162	1162	4.30.1	4.30.3.2	5.12.1 Develop Deliverable Expectation Document for Acceptance Testing	5 days	Thu 8/12/21	Wed 8/18/21	No
1163	1163	4.30.2	4.30.3.2	5.12.2 QA Deliverable Expectation Document	2 days	Thu 8/19/21	Fri 8/20/21	No
1164	1164	4.38.2	4.30.3.2	5.12.3 Submit Deliverable Expectation Document for Acceptance Testing	0 days	Fri 8/20/21	Fri 8/20/21	No
1165	1165	4.38.1	4.30.3.2	5.12.4 Conduct Walk-through for Deliverable Expectation Document for Acceptance Testing	2 days	Mon 8/23/21	Tue 8/24/21	No
1166	1166	4.30.3	4.30.3.2	5.12.5 Review Deliverable Expectation Document for Acceptance Testing	5 days	Mon 8/23/21	Fri 8/27/21	No
1167	1167	4.30.3	4.30.3.2	5.12.6 Provide Feedback on Deliverable Expectation Document for Acceptance Testing	0 days	Fri 8/27/21	Fri 8/27/21	No
1168	1168	4.30.2	4.30.3.2	5.12.7 Incorporate Feedback on Deliverable Expectation Document for Acceptance Testing	3 days	Mon 8/30/21	Wed 9/1/21	No
1169	1169	4.38.2	4.30.3.2	5.12.8 Submit Final Version of Deliverable Expectation Document for Acceptance Testing	0 days	Wed 9/1/21	Wed 9/1/21	No
1170	1170	4.30.3	4.30.3.2	5.12.9 Review and Verify Feedback	3 days	Thu 9/2/21	Tue 9/7/21	No
1171	1171	4.30.3	4.30.3.2	5.12.10 Approve Deliverable Expectation Document for Acceptance Testing	0 days	Tue 9/7/21	Tue 9/7/21	No
1172	1172	4.30.1	4.30.3.2	5.12.11 Develop Acceptance Testing Deliverable	15 days	Wed 9/8/21	Tue 9/28/21	No
1173	1173	4.30.2	4.30.3.2	5.12.12 QA Deliverable	3 days	Wed 9/29/21	Fri 10/1/21	No
1174	1174	4.38.2	4.30.3.2	5.12.13 Submit Acceptance Testing Deliverable	0 days	Fri 10/1/21	Fri 10/1/21	No
1175	1175	4.38.1	4.30.3.2	5.12.14 Conduct Walk-through for Acceptance Testing Deliverable	2 days	Mon 10/4/21	Tue 10/5/21	No
1176	1176	4.30.3	4.30.3.2	5.12.15 Review Acceptance Testing Deliverable	10 days	Mon 10/4/21	Fri 10/15/21	No
1177	1177	4.30.3	4.30.3.2	5.12.16 Provide Feedback on Acceptance Testing Deliverable	0 days	Fri 10/15/21	Fri 10/15/21	No
1178	1178	4.30.2	4.30.3.2	5.12.17 Incorporate Feedback on Acceptance Testing Deliverable	5 days	Mon 10/18/21	Fri 10/22/21	No
1179	1179	4.38.2	4.30.3.2	5.12.18 Submit Final Version of Acceptance Testing Deliverable	0 days	Fri 10/22/21	Fri 10/22/21	No
1180	1180	4.30.3	4.30.3.2	5.12.19 Review and Verify Acceptance Testing Deliverable	3 days	Mon 10/25/21	Wed 10/27/21	No
1181	1181	4.30.1	4.30.3.2	5.12.20 Approve Acceptance Testing Deliverable	0 days	Wed 10/27/21	Wed 10/27/21	No
1182	**1182**	**4.30**	**4.30.3.4**	**5.13 DELIVERABLE: Acceptance Test Reports**	**49 days**	**Thu 8/12/21**	**Wed 10/20/21**	**No**
1183	1183	4.30.1	4.30.3.4	5.13.1 Develop Deliverable Expectation Document for Acceptance Test Reports	5 days	Thu 8/12/21	Wed 8/18/21	No
1184	1184	4.30.2	4.30.3.4	5.13.2 QA Deliverable Expectation Document	3 days	Thu 8/19/21	Mon 8/23/21	No
1185	1185	4.38.2	4.30.3.4	5.13.3 Submit Deliverable Expectation Document for Acceptance Test Reports	0 days	Mon 8/23/21	Mon 8/23/21	No
1186	1186	4.38.1	4.30.3.4	5.13.4 Conduct Walk-through for Deliverable Expectation Document for Acceptance Test Reports	2 days	Tue 8/24/21	Wed 8/25/21	No
1187	1187	4.30.3	4.30.3.4	5.13.5 Review Deliverable Expectation Document for Acceptance Test Reports	5 days	Tue 8/24/21	Mon 8/30/21	No
1188	1188	4.30.3	4.30.3.4	5.13.6 Provide Feedback on Deliverable Expectation Document for Acceptance Test Reports	0 days	Mon 8/30/21	Mon 8/30/21	No
1189	1189	4.30.2	4.30.3.4	5.13.7 Incorporate Feedback on Deliverable Expectation Document for Acceptance Test Reports	3 days	Tue 8/31/21	Thu 9/2/21	No
1190	1190	4.38.2	4.30.3.4	5.13.8 Submit Final Version of Deliverable Expectation Document for Acceptance Test Reports	0 days	Mon 8/30/21	Mon 8/30/21	No
1191	1191	4.30.3	4.30.3.4	5.13.9 Review and Verify Feedback	3 days	Tue 8/31/21	Thu 9/2/21	No
1192	1192	4.30.3	4.30.3.4	5.13.10 Approve Deliverable Expectation Document for Acceptance Test Reports	0 days	Thu 9/2/21	Thu 9/2/21	No
1193	1193	4.30.1	4.30.3.4	5.13.11 Develop Acceptance Test Reports	15 days	Fri 9/3/21	Fri 9/24/21	No
1194	1194	4.30.2	4.30.3.4	5.13.12 QA Deliverable	5 days	Mon 9/27/21	Fri 10/1/21	No
1195	1195	4.38.2	4.30.3.4	5.13.13 Submit Acceptance Test Reports	0 days	Fri 10/1/21	Fri 10/1/21	No



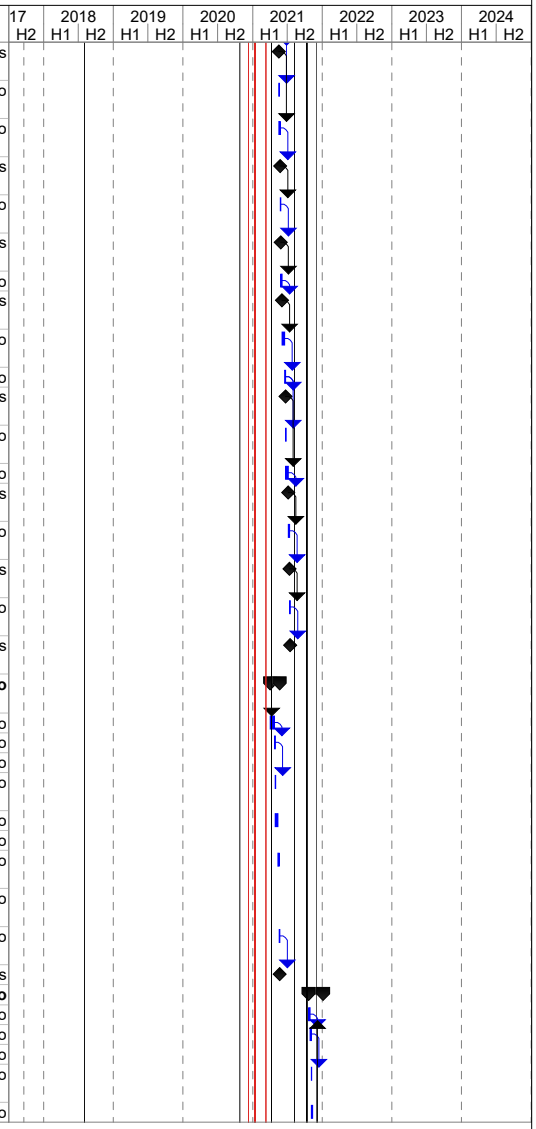
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1196	1196	4.38.1	4.30.3.4	5.13.14 Conduct Walk-through for Acceptance Test Reports	2 days	Mon 10/4/21	Tue 10/5/21	No
1197	1197	4.30.3	4.30.3.4	5.13.15 Review Acceptance Test Reports	5 days	Mon 10/4/21	Fri 10/8/21	No
1198	1198	4.30.3	4.30.3.4	5.13.16 Provide Feedback on Acceptance Test Reports	0 days	Fri 10/8/21	Fri 10/8/21	No
1199	1199	4.30.2	4.30.3.4	5.13.17 Incorporate Feedback on Acceptance Test Reports	5 days	Mon 10/11/21	Fri 10/15/21	No
1200	1200	4.38.2	4.30.3.4	5.13.18 Submit Final Version of Acceptance Test Reports	0 days	Fri 10/15/21	Fri 10/15/21	No
1201	1201	4.30.3	4.30.3.4	5.13.19 Review and Verify Acceptance Test Reports	3 days	Mon 10/18/21	Wed 10/20/21	No
1202	1202	4.30.1	4.30.3.4	5.13.20 Approve Acceptance Test Reports	0 days	Wed 10/20/21	Wed 10/20/21	No
1203	**1203**	**4.26**	**4.26.3.1**	**5.14 DELIVERABLE: Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software**	**37 days**	**Thu 4/1/21**	**Mon 5/24/21**	**No**
1204	1204	4.26	4.26.3.1	5.14.1 Develop Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	5 days	Thu 4/1/21	Thu 4/8/21	No
1205	1205	4.26	4.26.3.1	5.14.2 QA Deliverable Expectation Document	2 days	Fri 4/9/21	Mon 4/12/21	No
1206	1206	4.26	4.26.3.1	5.14.3 Submit Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Mon 4/12/21	Mon 4/12/21	Yes
1207	1207	4.26	4.26.3.1	5.14.4 Conduct Walkthrough of Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	2 days	Tue 4/13/21	Wed 4/14/21	No
1208	1208	4.26	4.26.3.1	5.14.5 Review Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	1 day	Thu 4/15/21	Thu 4/15/21	No
1209	1209	4.26	4.26.3.1	5.14.6 Provide Feedback on Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Thu 4/15/21	Thu 4/15/21	Yes
1210	1210	4.26	4.26.3.1	5.14.7 Incorporate Feedback on Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	1 day	Fri 4/16/21	Fri 4/16/21	No
1211	1211	4.26	4.26.3.1	5.14.8 Submit Final Version of Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Fri 4/16/21	Fri 4/16/21	Yes
1212	1212	4.26	4.26.3.1	5.14.9 Review and Verify Feedback	3 days	Mon 4/19/21	Wed 4/21/21	No
1213	1213	4.26	4.26.3.1	5.14.10 Approve Deliverable Expectation Document for Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Wed 4/21/21	Wed 4/21/21	Yes
1214	1214	4.26	4.26.3.1	5.14.11 Develop Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	5 days	Thu 4/22/21	Wed 4/28/21	No
1215	1215	4.26	4.26.3.1	5.14.12 QA Deliverable	2 days	Thu 4/29/21	Fri 4/30/21	No
1216	1216	4.26	4.26.3.1	5.14.13 Submit Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Fri 4/30/21	Fri 4/30/21	Yes
1217	1217	4.26	4.26.3.1	5.14.14 Conduct Walkthrough of Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software	2 days	Mon 5/3/21	Tue 5/4/21	No
1218	1218	4.26	4.26.3.1	5.14.15 Review Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	10 days	Wed 5/5/21	Tue 5/18/21	No
1219	1219	4.26	4.26.3.1	5.14.16 Provide Feedback on Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Tue 5/18/21	Tue 5/18/21	Yes
1220	1220	4.26	4.26.3.1	5.14.17 Incorporate Feedback on Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software	2 days	Wed 5/19/21	Thu 5/20/21	No
1221	1221	4.26	4.26.3.1	5.14.18 Submit Final Version of Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Thu 5/20/21	Thu 5/20/21	Yes
1222	1222	4.26	4.26.3.1	5.14.19 Review and Verify Feedback	2 days	Fri 5/21/21	Mon 5/24/21	No
1223	1223	4.26	4.26.3.1	5.14.20 Approve Purchased and Installed Development Hardware and Software; Purchased Operations Hardware and Software Deliverable	0 days	Mon 5/24/21	Mon 5/24/21	Yes
1224	**1224**	**4.15**	**4.15.3.2**	**5.15 DELIVERABLE: Successful Execution of Database Configuration Management Plan**	**74 days**	**Thu 4/1/21**	**Thu 7/15/21**	**No**
1225	1225	4.15.1	4.15.3.2	5.15.1 Develop Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	30 days	Thu 4/1/21	Thu 5/13/21	No
1226	1226	4.15.2	4.15.3.2	5.15.2 QA Deliverable Expectation Document	2 days	Fri 5/14/21	Mon 5/17/21	No



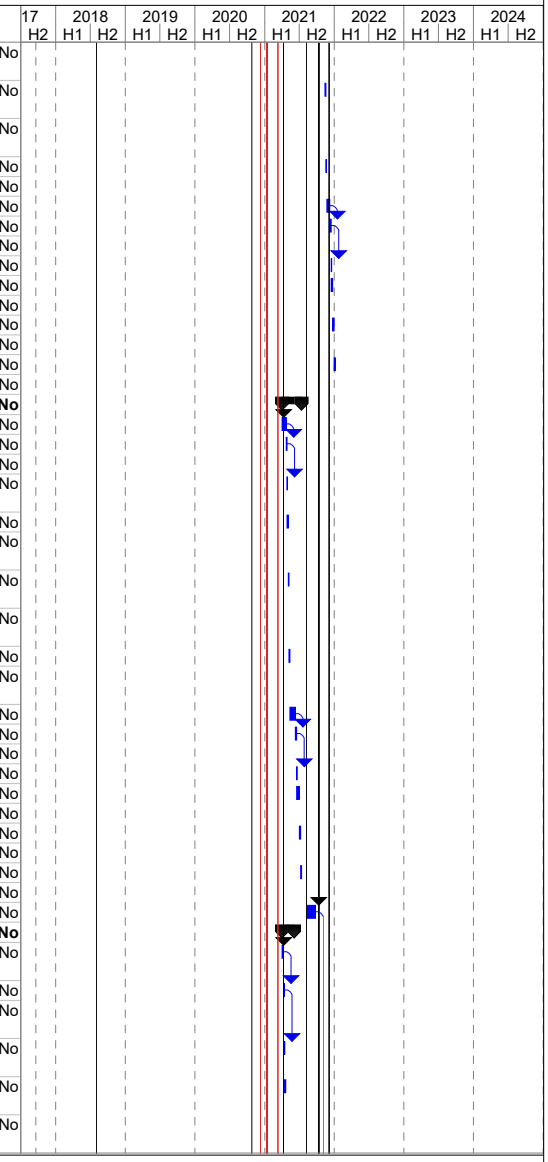
Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Critical
Milestone	Inactive Task	Manual Summary Rollup	Critical Split
Summary	Inactive Milestone	Manual Summary	Progress
Project Summary	Inactive Summary	Start-only	Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1227	1227	4.38.2	4.15.3.2	5.15.3 Submit Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	0 days	Mon 5/17/21	Mon 5/17/21	Yes
1228	1228	4.38.1	4.15.3.2	5.15.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	2 days	Tue 5/18/21	Wed 5/19/21	No
1229	1229	4.15.3	4.15.3.2	5.15.5 Review Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	5 days	Tue 5/18/21	Mon 5/24/21	No
1230	1230	4.15.3	4.15.3.2	5.15.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	0 days	Mon 5/24/21	Mon 5/24/21	Yes
1231	1231	4.15.2	4.15.3.2	5.15.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	3 days	Tue 5/25/21	Thu 5/27/21	No
1232	1232	4.38.2	4.15.3.2	5.15.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	0 days	Thu 5/27/21	Thu 5/27/21	Yes
1233	1233	4.15.3	4.15.3.2	5.15.9 Review and Verify Feedback	3 days	Fri 5/28/21	Wed 6/2/21	No
1234	1234	4.15.3	4.15.3.2	5.15.10 Approve Deliverable Expectation Document for Successful Execution of Database Configuration Management Plan	0 days	Wed 6/2/21	Wed 6/2/21	Yes
1235	1235	4.15.1	4.15.3.2	5.15.11 Develop Successful Execution of Database Configuration Management Plan	10 days	Thu 6/3/21	Wed 6/16/21	No
1236	1236	4.15.2	4.15.3.2	5.15.12 QA Deliverable	3 days	Thu 6/17/21	Mon 6/21/21	No
1237	1237	4.38.2	4.15.3.2	5.15.13 Submit Successful Execution of Database Configuration Management Plan	0 days	Mon 6/21/21	Mon 6/21/21	Yes
1238	1238	4.38.1	4.15.3.2	5.15.14 Conduct Walk-through for Successful Execution of Database Configuration Management Plan	2 days	Tue 6/22/21	Wed 6/23/21	No
1239	1239	4.15.3	4.15.3.2	5.15.15 Review Successful Execution of Database Configuration Management Pl	10 days	Tue 6/22/21	Mon 7/5/21	No
1240	1240	4.15.3	4.15.3.2	5.15.16 Provide Feedback on Successful Execution of Database Configuration Management Plan	0 days	Mon 7/5/21	Mon 7/5/21	Yes
1241	1241	4.15.2	4.15.3.2	5.15.17 Incorporate Feedback on Successful Execution of Database Configuration Management Plan	5 days	Tue 7/6/21	Mon 7/12/21	No
1242	1242	4.38.2	4.15.3.2	5.15.18 Submit Final Version of Successful Execution of Database Configuration Management Plan	0 days	Mon 7/12/21	Mon 7/12/21	Yes
1243	1243	4.15.3	4.15.3.2	5.15.19 Review and Verify Feedback on Successful Execution of Database Configuration Management Plan	3 days	Tue 7/13/21	Thu 7/15/21	No
1244	1244	4.15.3	4.15.3.2	5.15.20 Approve Successful Execution of Database Configuration Management Plan	0 days	Thu 7/15/21	Thu 7/15/21	Yes
1245	**1245**	**4.11**	**4.11.3.1**	**5.16 DELIVERABLE: Production Hardware and Software Configuration Plan**	**35 days**	**Fri 4/2/21**	**Fri 5/21/21**	**No**
1246	1246	4.11.1	4.11.3.1	5.16.1 Develop Production Hardware and Software Configuration Plan	15 days	Fri 4/2/21	Fri 4/23/21	No
1247	1247	4.11.2	4.11.3.1	5.16.2 QA Deliverable	2 days	Mon 4/26/21	Tue 4/27/21	No
1248	1248	4.38.2	4.11.3.1	5.16.3 Submit Production Hardware and Software Configuration Plan	0 days	Tue 4/27/21	Tue 4/27/21	No
1249	1249	4.38.1	4.11.3.1	5.16.4 Conduct Walk-through for Production Hardware and Software Configuration Plan	2 days	Wed 4/28/21	Thu 4/29/21	No
1250	1250	4.11.3	4.11.3.1	5.16.5 Review Production Hardware and Software Configuration Plan	10 days	Wed 4/28/21	Tue 5/11/21	No
1251	1251	4.11.3	4.11.3.1	5.16.6 Provide Feedback on Production Hardware and Software Configuration Pla	0 days	Tue 5/11/21	Tue 5/11/21	No
1252	1252	4.11.3	4.11.3.1	5.16.7 Incorporate Feedback on Production Hardware and Software Configuration Plan	5 days	Wed 5/12/21	Tue 5/18/21	No
1253	1253	4.38.2	4.11.3.1	5.16.8 Submit Final Version of Production Hardware and Software Configuration Plan	0 days	Tue 5/18/21	Tue 5/18/21	No
1254	1254	4.11.3	4.11.3.1	5.16.9 Review and Verify Feedback on Production Hardware and Software Configuration Plan	3 days	Wed 5/19/21	Fri 5/21/21	No
1255	1255	4.11.1	4.11.3.1	5.16.10 Approve Production Hardware and Software Configuration Plan	0 days	Fri 5/21/21	Fri 5/21/21	Yes
1256	**1256**	**4.25**	**4.25.3.1**	**5.17 DELIVERABLE: Warranty Support Plan**	**48 days**	**Thu 10/21/21**	**Tue 1/4/22**	**No**
1257	1257	4.25.1	4.25.3.1	5.17.1 Develop Deliverable Expectation Document for Warranty Support Plan	5 days	Thu 10/21/21	Wed 10/27/21	No
1258	1258	4.25.2	4.25.3.1	5.17.2 QA Deliverable Expectation Document	4 days	Thu 10/28/21	Wed 11/3/21	No
1259	1259	4.38.2	4.25.3.1	5.17.3 Submit Deliverable Expectation Document for Warranty Support Plan	0 days	Wed 11/3/21	Wed 11/3/21	No
1260	1260	4.38.1	4.25.3.1	5.17.4 Conduct Walk-through for Deliverable Expectation Document for Warranty Support Plan	2 days	Thu 11/4/21	Fri 11/5/21	No
1261	1261	4.25.3	4.25.3.1	5.17.5 Review Deliverable Expectation Document for Warranty Support Plan	5 days	Thu 11/4/21	Wed 11/10/21	No



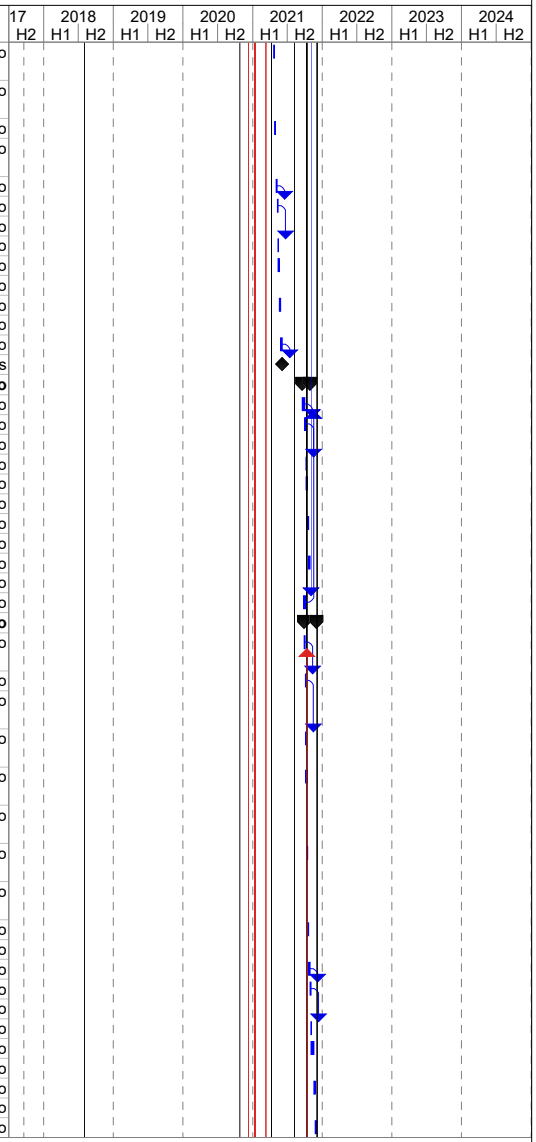
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1262	1262	4.25.3	4.25.3.1	5.17.6 Provide Feedback on Deliverable Expectation Document for Warranty Support Plan	0 days	Wed 11/10/21	Wed 11/10/21	No
1263	1263	4.25.2	4.25.3.1	5.17.7 Incorporate Feedback on Deliverable Expectation Document for Warranty Support Plan	3 days	Fri 11/12/21	Tue 11/16/21	No
1264	1264	4.38.2	4.25.3.1	5.17.8 Submit Final Version of Deliverable Expectation Document for Warranty Support Plan	0 days	Tue 11/16/21	Tue 11/16/21	No
1265	1265	4.25.3	4.25.3.1	5.17.9 Review and Verify Feedback	3 days	Wed 11/17/21	Fri 11/19/21	No
1266	1266	4.25.3	4.25.3.1	5.17.10 Approve Deliverable Expectation Document for Warranty Support Plan	0 days	Fri 11/19/21	Fri 11/19/21	No
1267	1267	4.25.1	4.25.3.1	5.17.11 Develop Warranty Support Plan	10 days	Mon 11/22/21	Tue 12/7/21	No
1268	1268	4.25.2	4.25.3.1	5.17.12 QA Deliverable	5 days	Wed 12/8/21	Tue 12/14/21	No
1269	1269	4.38.2	4.25.3.1	5.17.13 Submit Warranty Support Plan	0 days	Tue 12/14/21	Tue 12/14/21	No
1270	1270	4.38.1	4.25.3.1	5.17.14 Conduct Walk-through for Warranty Support Plan	2 days	Wed 12/15/21	Thu 12/16/21	No
1271	1271	4.25.3	4.25.3.1	5.17.15 Review Warranty Support Plan	5 days	Wed 12/15/21	Tue 12/21/21	No
1272	1272	4.25.3	4.25.3.1	5.17.16 Provide Feedback on Warranty Support Plan	0 days	Tue 12/21/21	Tue 12/21/21	No
1273	1273	4.25.2	4.25.3.1	5.17.17 Incorporate Feedback on Warranty Support Plan	5 days	Wed 12/22/21	Wed 12/29/21	No
1274	1274	4.38.2	4.25.3.1	5.17.18 Submit Final Version of Warranty Support Plan	0 days	Wed 12/29/21	Wed 12/29/21	No
1275	1275	4.25.3	4.25.3.1	5.17.19 Review and Verify Warranty Support Plan	3 days	Thu 12/30/21	Tue 1/4/22	No
1276	1276	4.25.1	4.25.3.1	5.17.20 Approve Warranty Support Plan	0 days	Tue 1/4/22	Tue 1/4/22	No
1277	**1277**	**4.23**	**4.23.3.1**	**5.18 DELIVERABLE: Operations Support Plan**	**71 days**	**Thu 4/1/21**	**Mon 7/12/21**	**No**
1278	1278	4.23.1	4.23.3.1	5.18.1 Develop Deliverable Expectation Document for Operations Support Plan	15 days	Thu 4/1/21	Thu 4/22/21	No
1279	1279	4.23.2	4.23.3.1	5.18.2 QA Deliverable Expectation Document	2 days	Fri 4/23/21	Mon 4/26/21	No
1280	1280	4.38.2	4.23.3.1	5.18.3 Submit Deliverable Expectation Document for Operations Support Plan	0 days	Mon 4/26/21	Mon 4/26/21	No
1281	1281	4.38.1	4.23.3.1	5.18.4 Conduct Walk-through for Deliverable Expectation Document for Operations Support Plan	2 days	Tue 4/27/21	Wed 4/28/21	No
1282	1282	4.23.3	4.23.3.1	5.18.5 Review Deliverable Expectation Document for Operations Support Plan	5 days	Tue 4/27/21	Mon 5/3/21	No
1283	1283	4.23.3	4.23.3.1	5.18.6 Provide Feedback on Deliverable Expectation Document for Operations Support Plan	0 days	Mon 5/3/21	Mon 5/3/21	No
1284	1284	4.23.2	4.23.3.1	5.18.7 Incorporate Feedback on Deliverable Expectation Document for Operations Support Plan	3 days	Tue 5/4/21	Thu 5/6/21	No
1285	1285	4.38.2	4.23.3.1	5.18.8 Submit Final Version of Deliverable Expectation Document for Operations Support Plan	0 days	Thu 5/6/21	Thu 5/6/21	No
1286	1286	4.23.3	4.23.3.1	5.18.9 Review and Verify Feedback	3 days	Fri 5/7/21	Tue 5/11/21	No
1287	1287	4.23.3	4.23.3.1	5.18.10 Approve Deliverable Expectation Document for Operations Support Plan	0 days	Tue 5/11/21	Tue 5/11/21	No
1288	1288	4.23.1	4.23.3.1	5.18.11 Develop Operations Support Plan	20 days	Wed 5/12/21	Wed 6/9/21	No
1289	1289	4.23.2	4.23.3.1	5.18.12 QA Deliverable	5 days	Thu 6/10/21	Wed 6/16/21	No
1290	1290	4.38.2	4.23.3.1	5.18.13 Submit Operations Support Plan	0 days	Wed 6/16/21	Wed 6/16/21	No
1291	1291	4.38.1	4.23.3.1	5.18.14 Conduct Walk-through for Operations Support Plan	2 days	Thu 6/17/21	Fri 6/18/21	No
1292	1292	4.23.3	4.23.3.1	5.18.15 Review Operations Support Plan	10 days	Thu 6/17/21	Wed 6/30/21	No
1293	1293	4.23.3	4.23.3.1	5.18.16 Provide Feedback on Operations Support Plan	0 days	Wed 6/30/21	Wed 6/30/21	No
1294	1294	4.23.2	4.23.3.1	5.18.17 Incorporate Feedback on Operations Support Plan	5 days	Thu 7/1/21	Wed 7/7/21	No
1295	1295	4.38.2	4.23.3.1	5.18.18 Submit Final Version of Operations Support Plan	0 days	Wed 7/7/21	Wed 7/7/21	No
1296	1296	4.23.3	4.23.3.1	5.18.19 Review and Verify Operations Support Plan	3 days	Thu 7/8/21	Mon 7/12/21	No
1297	1297	4.23.1	4.23.3.1	5.18.20 Approve Operations Support Plan	0 days	Mon 7/12/21	Mon 7/12/21	No
1298	1298	4.28.2.5		5.19 Set Up, Delivery and Deploy Staging Environment	30 days	Thu 8/12/21	Thu 9/23/21	No
1299	**1299**	**4.35**	**4.35.3.1**	**5.20 DELIVERABLE: Knowledge Transfer Plan and Procedures**	**44 days**	**Thu 4/1/21**	**Thu 6/3/21**	**No**
1300	1300	4.35.1	4.35.3.1	5.20.1 Develop Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	5 days	Thu 4/1/21	Thu 4/8/21	No
1301	1301	4.35.2	4.35.3.1	5.20.2 QA Deliverable Expectation Document	3 days	Fri 4/9/21	Tue 4/13/21	No
1302	1302	4.38.2	4.35.3.1	5.20.3 Submit Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	0 days	Tue 4/13/21	Tue 4/13/21	No
1303	1303	4.38.1	4.35.3.1	5.20.4 Conduct Walk-through for Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	2 days	Wed 4/14/21	Thu 4/15/21	No
1304	1304	4.35.3	4.35.3.1	5.20.5 Review Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	5 days	Wed 4/14/21	Tue 4/20/21	No
1305	1305	4.35.3	4.35.3.1	5.20.6 Provide Feedback on Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	0 days	Tue 4/20/21	Tue 4/20/21	No



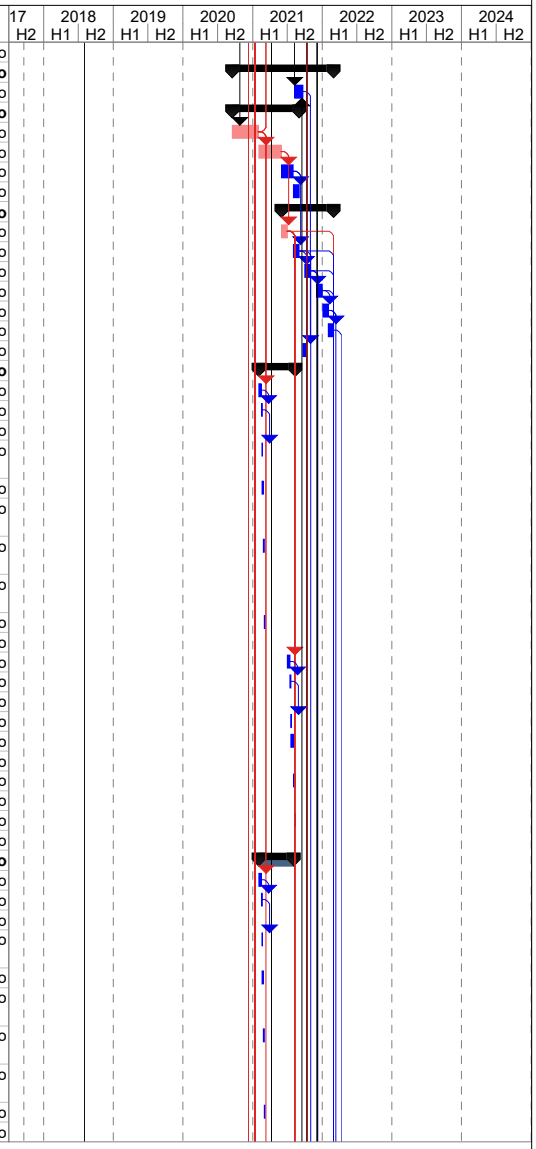
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1306	1306	4.35.2	4.35.3.1	5.20.7 Incorporate Feedback on Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	3 days	Wed 4/21/21	Fri 4/23/21	No
1307	1307	4.38.2	4.35.3.1	5.20.8 Submit Final Version of Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	0 days	Fri 4/23/21	Fri 4/23/21	No
1308	1308	4.35.3	4.35.3.1	5.20.9 Review and Verify Feedback	3 days	Mon 4/26/21	Wed 4/28/21	No
1309	1309	4.35.3	4.35.3.1	5.20.10 Approve Deliverable Expectation Document for Knowledge Transfer Plan and Procedures	0 days	Wed 4/28/21	Wed 4/28/21	No
1310	1310	4.35.1	4.35.3.1	5.20.11 Develop Knowledge Transfer Plan and Procedures	5 days	Mon 5/3/21	Fri 5/7/21	No
1311	1311	4.35.2	4.35.3.1	5.20.12 QA Deliverable	3 days	Mon 5/10/21	Wed 5/12/21	No
1312	1312	4.38.2	4.35.3.1	5.20.13 Submit Knowledge Transfer Plan and Procedures	0 days	Wed 5/12/21	Wed 5/12/21	No
1313	1313	4.38.1	4.35.3.1	5.20.14 Conduct Walk-through for Knowledge Transfer Plan and Procedures	2 days	Thu 5/13/21	Fri 5/14/21	No
1314	1314	4.35.3	4.35.3.1	5.20.15 Review Knowledge Transfer Plan and Procedures	5 days	Thu 5/13/21	Wed 5/19/21	No
1315	1315	4.35.3	4.35.3.1	5.20.16 Provide Feedback on Knowledge Transfer Plan and Procedures	0 days	Wed 5/19/21	Wed 5/19/21	No
1316	1316	4.35.3	4.35.3.1	5.20.17 Incorporate Feedback on Knowledge Transfer Plan and Procedures	5 days	Thu 5/20/21	Wed 5/26/21	No
1317	1317	4.38.2	4.35.3.1	5.20.18 Submit Final Version of Knowledge Transfer Plan and Procedures	0 days	Wed 5/26/21	Wed 5/26/21	No
1318	1318	4.35.3	4.35.3.1	5.20.19 Review and Verify Feedback on Knowledge Transfer Plan and Procedure	5 days	Thu 5/27/21	Thu 6/3/21	No
1319	1319	4.35.1	4.35.3.1	5.20.20 Approve Knowledge Transfer Plan and Procedures	0 days	Thu 6/3/21	Thu 6/3/21	Yes
1320	**1320**	**4.29**	**4.29.3.3**	**5.21 DELIVERABLE: Conversion and Testing Report**	**29 days**	**Fri 9/17/21**	**Wed 10/27/21**	**No**
1321	1321	4.29.1	4.29.3.3	5.21.1 Develop Conversion and Testing Report	10 days	Fri 9/17/21	Thu 9/30/21	No
1322	1322	4.29.2	4.29.3.3	5.21.2 QA Deliverable	4 days	Fri 10/1/21	Wed 10/6/21	No
1323	1323	4.38.2	4.29.3.3	5.21.3 Submit Conversion and Testing Report	0 days	Wed 10/6/21	Wed 10/6/21	No
1324	1324	4.38.1	4.29.3.3	5.21.4 Conduct Walk-through for Conversion and Testing Report	2 days	Thu 10/7/21	Fri 10/8/21	No
1325	1325	4.29.3	4.29.3.3	5.21.5 Review Conversion and Testing Report	5 days	Thu 10/7/21	Wed 10/13/21	No
1326	1326	4.29.3	4.29.3.3	5.21.6 Provide Feedback on Conversion and Testing Report	0 days	Wed 10/13/21	Wed 10/13/21	No
1327	1327	4.29.2	4.29.3.3	5.21.7 Incorporate Feedback on Conversion and Testing Report	5 days	Thu 10/14/21	Wed 10/20/21	No
1328	1328	4.38.2	4.29.3.3	5.21.8 Submit Final Version of Conversion and Testing Report	0 days	Wed 10/20/21	Wed 10/20/21	No
1329	1329	4.29.3	4.29.3.3	5.21.9 Review and Verify Feedback on Conversion and Testing Report	5 days	Thu 10/21/21	Wed 10/27/21	No
1330	1330	4.29.1	4.29.3.3	5.21.10 Approve Conversion and Testing Report	0 days	Wed 10/27/21	Wed 10/27/21	No
1331	1331	4.28.2.5		5.22 update hardware and software list	10 days	Fri 9/24/21	Thu 10/7/21	No
1332	**1332**	**4.24**	**4.24.3.1**	**5.23 DELIVERABLE: Maintenance Transition Plan**	**43 days**	**Mon 9/27/21**	**Tue 11/30/21**	**No**
1333	1333	4.21.1	4.24.3.1	5.23.1 Develop Deliverable Expectation Document for Maintenance Transition Plan	5 days	Mon 9/27/21	Fri 10/1/21	No
1334	1334	4.24.2	4.24.3.1	5.23.2 QA Deliverable Expectation Document	2 days	Mon 10/4/21	Tue 10/5/21	No
1335	1335	4.38.2	4.24.3.1	5.23.3 Submit Deliverable Expectation Document for Maintenance Transition Plan	0 days	Tue 10/5/21	Tue 10/5/21	No
1336	1336	4.38.1	4.24.3.1	5.23.4 Conduct Walk-through for Deliverable Expectation Document for Maintenance Transition Plan	2 days	Wed 10/6/21	Thu 10/7/21	No
1337	1337	4.24.3	4.24.3.1	5.23.5 Review Deliverable Expectation Document for Maintenance Transition Plan	5 days	Wed 10/6/21	Tue 10/12/21	No
1338	1338	4.24.3	4.24.3.1	5.23.6 Provide Feedback on Deliverable Expectation Document for Maintenance Transition Plan	0 days	Tue 10/12/21	Tue 10/12/21	No
1339	1339	4.24.2	4.24.3.1	5.23.7 Incorporate Feedback on Deliverable Expectation Document for Maintenance Transition Plan	3 days	Wed 10/13/21	Fri 10/15/21	No
1340	1340	4.38.2	4.24.3.1	5.23.8 Submit Final Version of Deliverable Expectation Document for Maintenance Transition Plan	0 days	Fri 10/15/21	Fri 10/15/21	No
1341	1341	4.24.3	4.24.3.1	5.23.9 Review and Verify Feedback	3 days	Mon 10/18/21	Wed 10/20/21	No
1342	1342	4.24.3	4.24.3.1	5.23.10 Approve Deliverable Expectation Document for Maintenance Transition P	0 days	Wed 10/20/21	Wed 10/20/21	No
1343	1343	4.21.1	4.24.3.1	5.23.11 Develop Maintenance Transition Plan	5 days	Thu 10/21/21	Wed 10/27/21	No
1344	1344	4.24.2	4.24.3.1	5.23.12 QA Deliverable	2 days	Thu 10/28/21	Mon 11/1/21	No
1345	1345	4.38.2	4.24.3.1	5.23.13 Submit Maintenance Transition Plan	0 days	Mon 11/1/21	Mon 11/1/21	No
1346	1346	4.38.1	4.24.3.1	5.23.14 Conduct Walk-through for Maintenance Transition Plan	2 days	Tue 11/2/21	Wed 11/3/21	No
1347	1347	4.24.3	4.24.3.1	5.23.15 Review Maintenance Transition Plan	10 days	Tue 11/2/21	Tue 11/16/21	No
1348	1348	4.24.3	4.24.3.1	5.23.16 Provide Feedback on Maintenance Transition Plan	0 days	Tue 11/16/21	Tue 11/16/21	No
1349	1349	4.24.1	4.24.3.1	5.23.17 Incorporate Feedback on Maintenance Transition Plan	5 days	Wed 11/17/21	Tue 11/23/21	No
1350	1350	4.38.2	4.24.3.1	5.23.18 Submit Final Version of Maintenance Transition Plan	0 days	Tue 11/23/21	Tue 11/23/21	No
1351	1351	4.24.3	4.24.3.1	5.23.19 Review and Verify Maintenance Transition Plan	3 days	Wed 11/24/21	Tue 11/30/21	No



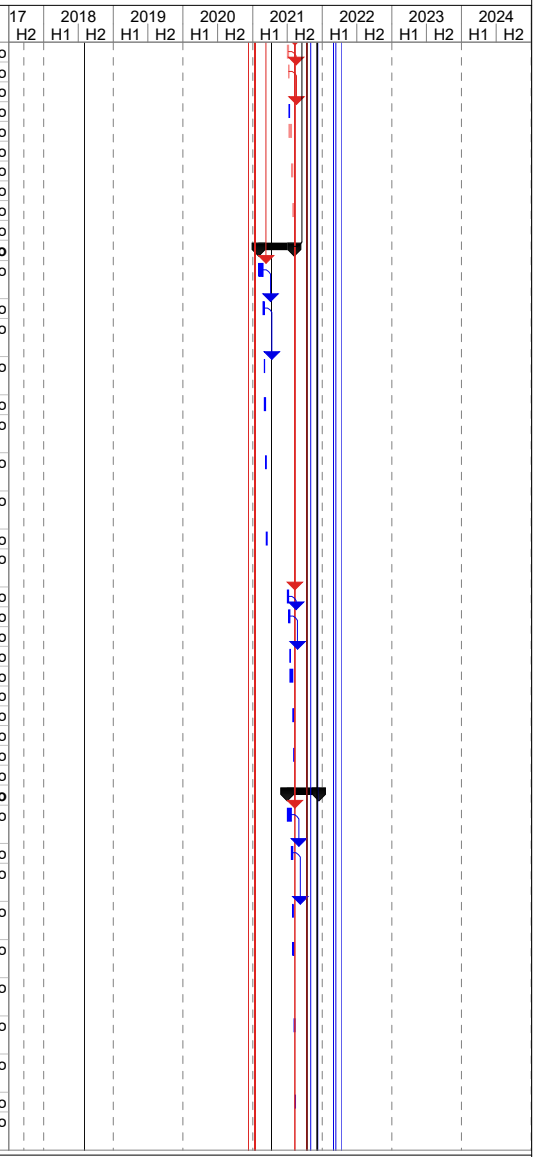
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1352	1352	4.24.1	4.24.3.1	5.23.20 Approve Maintenance Transition Plan	0 days	Tue 11/30/21	Tue 11/30/21	No
1353	**1353**	**1.2.1.4**		**5.24 Train**	**361 days**	**Tue 9/15/20**	**Mon 2/28/22**	**No**
1354	1354	4.28.2.5		5.24.1 Set Up, Deliver and Deploy Training Environment	30 days	Mon 8/9/21	Mon 9/20/21	No
1355	**1355**	**1.2.1.4**		**5.24.2 Training Development**	**241 days**	**Tue 9/15/20**	**Tue 8/31/21**	**No**
1356	1356	4.30.2.2		5.24.2.1 Develop UAT Trainnig	92 days	Tue 9/15/20	Fri 1/29/21	No
1357	1357	4.30.2.2		5.24.2.2 Develop Dry Run Training	83 days	Mon 2/1/21	Fri 5/28/21	No
1358	1358	4.30.2.2		5.24.2.3 Develop Train the Trainer Training	44 days	Tue 6/1/21	Fri 7/30/21	No
1359	1359	4.30.2.2		5.24.2.4 Develop End User Training	22 days	Mon 8/2/21	Tue 8/31/21	No
1360	**1360**	**1.2.1.4**		**5.24.3 Training Delivery**	**186 days**	**Tue 6/1/21**	**Mon 2/28/22**	**No**
1361	1361	4.20.1		5.24.3.1 Training Dry Run	22 days	Tue 6/1/21	Wed 6/30/21	No
1362	1362	4.20.1		5.24.3.2 Train the Trainer	21 days	Mon 8/2/21	Mon 8/30/21	No
1363	1363	4.20.1		5.24.3.3 Pilot Training	20 days	Fri 10/1/21	Thu 10/28/21	No
1364	1364	4.20.1		5.24.3.4 Rollout 1 Training	21 days	Wed 12/1/21	Thu 12/30/21	No
1365	1365	4.20.1		5.24.3.5 Rollout 2 Training	20 days	Mon 1/3/22	Mon 1/31/22	No
1366	1366	4.20.1		5.24.3.6 Rollout 3 Training	19 days	Tue 2/1/22	Mon 2/28/22	No
1367	1367	4.28.2.5		5.24.4 Update hardware and software list	10 days	Tue 9/21/21	Mon 10/4/21	No
1368	**1368**	**4.31**	**4.31.3.2**	**5.24.5 DELIVERABLE: Training Materials**	**135 days**	**Mon 2/1/21**	**Wed 8/11/21**	**No**
1369	1369	4.31.1	4.31.3.2	5.24.5.1 Develop Deliverable Expectation Document for Training Materials	10 days	Mon 2/1/21	Fri 2/12/21	No
1370	1370	4.31.2	4.31.3.2	5.24.5.2 QA Deliverable Expectation Document	2 days	Tue 2/16/21	Wed 2/17/21	No
1371	1371	4.38.2	4.31.3.2	5.24.5.3 Submit Deliverable Expectation Document for Training Materials	0 days	Wed 2/17/21	Wed 2/17/21	No
1372	1372	4.38.1	4.31.3.2	5.24.5.4 Conduct Walk-through for Deliverable Expectation Document for Training Materials	2 days	Thu 2/18/21	Fri 2/19/21	No
1373	1373	4.31.3	4.31.3.2	5.24.5.5 Review Deliverable Expectation Document for Training Materials	5 days	Thu 2/18/21	Wed 2/24/21	No
1374	1374	4.31.3	4.31.3.2	5.24.5.6 Provide Feedback on Deliverable Expectation Document for Training Materials	0 days	Wed 2/24/21	Wed 2/24/21	No
1375	1375	4.31.2	4.31.3.2	5.24.5.7 Incorporate Feedback on Deliverable Expectation Document for Training Materials	3 days	Thu 2/25/21	Mon 3/1/21	No
1376	1376	4.38.2	4.31.3.2	5.24.5.8 Submit Final Version of Deliverable Expectation Document for Training Materials	0 days	Mon 3/1/21	Mon 3/1/21	No
1377	1377	4.31.3	4.31.3.2	5.24.5.9 Review and Verify Feedback	3 days	Tue 3/2/21	Thu 3/4/21	No
1378	1378	4.31.3	4.31.3.2	5.24.5.10 Approve Deliverable Expectation Document for Training Materials	0 days	Thu 3/4/21	Thu 3/4/21	No
1379	1379	4.31.1	4.31.3.2	5.24.5.11 Develop Training Materials	10 days	Thu 7/1/21	Wed 7/14/21	No
1380	1380	4.31.2	4.31.3.2	5.24.5.12 QA Deliverable	3 days	Thu 7/15/21	Mon 7/19/21	No
1381	1381	4.38.2	4.31.3.2	5.24.5.13 Submit Training Materials	0 days	Mon 7/19/21	Mon 7/19/21	No
1382	1382	4.38.1	4.31.3.2	5.24.5.14 Conduct Walk-through for Training Materials	2 days	Tue 7/20/21	Wed 7/21/21	No
1383	1383	4.31.3	4.31.3.2	5.24.5.15 Review Training Materials	10 days	Tue 7/20/21	Mon 8/2/21	No
1384	1384	4.31.3	4.31.3.2	5.24.5.16 Provide Feedback on Training Materials	0 days	Mon 8/2/21	Mon 8/2/21	No
1385	1385	4.31.2	4.31.3.2	5.24.5.17 Incorporate Feedback on Training Materials	5 days	Tue 8/3/21	Mon 8/9/21	No
1386	1386	4.38.2	4.31.3.2	5.24.5.18 Submit Final Version of Training Materials	0 days	Mon 8/9/21	Mon 8/9/21	No
1387	1387	4.31.3	4.31.3.2	5.24.5.19 Review and Verify Training Materials	2 days	Tue 8/10/21	Wed 8/11/21	No
1388	1388	4.31.1	4.31.3.2	5.24.5.20 Approve Training Materials	0 days	Wed 8/11/21	Wed 8/11/21	No
1389	**1389**	**4.31**	**4.31.3.3**	**5.24.6 DELIVERABLE: Training Manual**	**129 days**	**Mon 2/1/21**	**Tue 8/3/21**	**No**
1390	1390	4.31.1	4.31.3.3	5.24.6.1 Develop Deliverable Expectation Document for Training Manual	10 days	Mon 2/1/21	Fri 2/12/21	No
1391	1391	4.31.2	4.31.3.3	5.24.6.2 QA Deliverable Expectation Document	2 days	Tue 2/16/21	Wed 2/17/21	No
1392	1392	4.38.2	4.31.3.3	5.24.6.3 Submit Deliverable Expectation Document for Training Manual	0 days	Wed 2/17/21	Wed 2/17/21	No
1393	1393	4.38.1	4.31.3.3	5.24.6.4 Conduct Walk-through for Deliverable Expectation Document for Training Manual	2 days	Thu 2/18/21	Fri 2/19/21	No
1394	1394	4.31.3	4.31.3.3	5.24.6.5 Review Deliverable Expectation Document for Training Manual	5 days	Thu 2/18/21	Wed 2/24/21	No
1395	1395	4.31.3	4.31.3.3	5.24.6.6 Provide Feedback on Deliverable Expectation Document for Training Manual	0 days	Wed 2/24/21	Wed 2/24/21	No
1396	1396	4.31.2	4.31.3.3	5.24.6.7 Incorporate Feedback on Deliverable Expectation Document for Training Manual	3 days	Thu 2/25/21	Mon 3/1/21	No
1397	1397	4.38.2	4.31.3.3	5.24.6.8 Submit Final Version of Deliverable Expectation Document for Training Manual	0 days	Mon 3/1/21	Mon 3/1/21	No
1398	1398	4.31.3	4.31.3.3	5.24.6.9 Review and Verify Feedback	3 days	Tue 3/2/21	Thu 3/4/21	No
1399	1399	4.31.3	4.31.3.3	5.24.6.10 Approve Deliverable Expectation Document for Training Manual	0 days	Thu 3/4/21	Thu 3/4/21	No



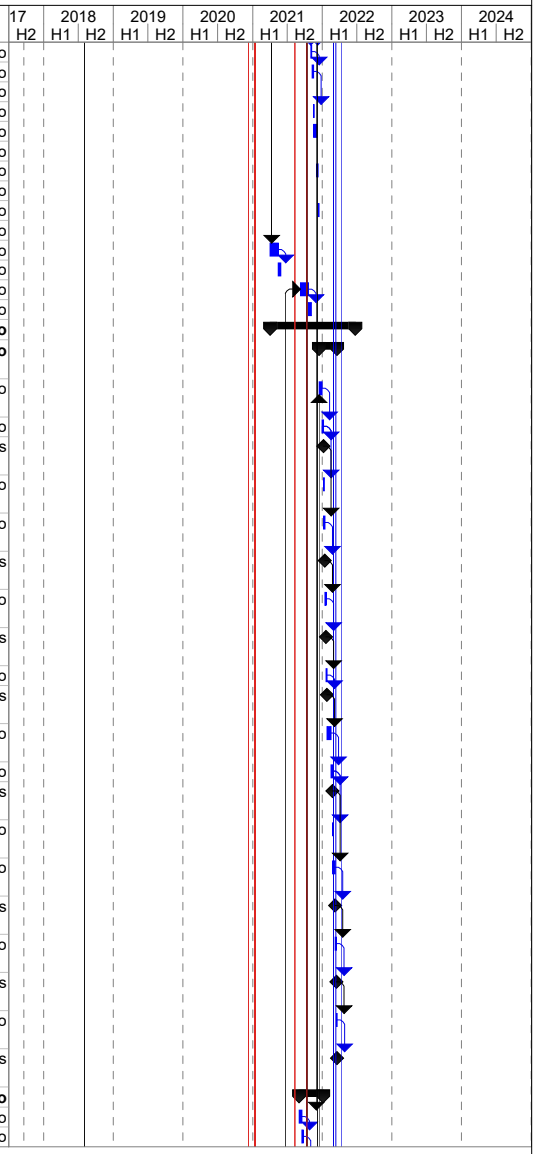
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1400	1400	4.31.1	4.31.3.3	5.24.6.11 Develop Training Manual	5 days	Thu 7/1/21	Wed 7/7/21	No
1401	1401	4.31.2	4.31.3.3	5.24.6.12 QA Deliverable	1 day	Thu 7/8/21	Thu 7/8/21	No
1402	1402	4.38.2	4.31.3.3	5.24.6.13 Submit Training Manual	0 days	Thu 7/8/21	Thu 7/8/21	No
1403	1403	4.38.1	4.31.3.3	5.24.6.14 Conduct Walk-through for Training Manual	2 days	Fri 7/9/21	Mon 7/12/21	No
1404	1404	4.31.3	4.31.3.3	5.24.6.15 Review Training Manual	10 days	Fri 7/9/21	Thu 7/22/21	No
1405	1405	4.31.3	4.31.3.3	5.24.6.16 Provide Feedback on Training Manual	0 days	Thu 7/22/21	Thu 7/22/21	No
1406	1406	4.31.2	4.31.3.3	5.24.6.17 Incorporate Feedback on Training Manual	5 days	Fri 7/23/21	Thu 7/29/21	No
1407	1407	4.38.2	4.31.3.3	5.24.6.18 Submit Final Version of Training Manual	0 days	Thu 7/29/21	Thu 7/29/21	No
1408	1408	4.31.3	4.31.3.3	5.24.6.19 Review and Verify Training Manual	3 days	Fri 7/30/21	Tue 8/3/21	No
1409	1409	4.31.1	4.31.3.3	5.24.6.20 Approve Training Manual	0 days	Tue 8/3/21	Tue 8/3/21	No
1410	**1410**	**4.31**	**4.31.3.4**	**5.24.7 DELIVERABLE: Web-Based Training Center**	**132 days**	**Mon 2/1/21**	**Fri 8/6/21**	**No**
1411	1411	4.31.1	4.31.3.4	5.24.7.1 Develop Deliverable Expectation Document for Web-Based Training Center	15 days	Mon 2/1/21	Mon 2/22/21	No
1412	1412	4.31.2	4.31.3.4	5.24.7.2 QA Deliverable Expectation Document	5 days	Tue 2/23/21	Mon 3/1/21	No
1413	1413	4.38.2	4.31.3.4	5.24.7.3 Submit Deliverable Expectation Document for Web-Based Training Center	0 days	Mon 3/1/21	Mon 3/1/21	No
1414	1414	4.38.1	4.31.3.4	5.24.7.4 Conduct Walk-through for Deliverable Expectation Document for Web-Based Training Center	2 days	Tue 3/2/21	Wed 3/3/21	No
1415	1415	4.31.3	4.31.3.4	5.24.7.5 Review Deliverable Expectation Document for Web-Based Training C	5 days	Tue 3/2/21	Mon 3/8/21	No
1416	1416	4.31.3	4.31.3.4	5.24.7.6 Provide Feedback on Deliverable Expectation Document for Web-Based Training Center	0 days	Mon 3/8/21	Mon 3/8/21	No
1417	1417	4.31.2	4.31.3.4	5.24.7.7 Incorporate Feedback on Deliverable Expectation Document for Web-Based Training Center	3 days	Tue 3/9/21	Thu 3/11/21	No
1418	1418	4.38.2	4.31.3.4	5.24.7.8 Submit Final Version of Deliverable Expectation Document for Web-Based Training Center	0 days	Thu 3/11/21	Thu 3/11/21	No
1419	1419	4.31.3	4.31.3.4	5.24.7.9 Review and Verify Feedback	3 days	Fri 3/12/21	Tue 3/16/21	No
1420	1420	4.31.3	4.31.3.4	5.24.7.10 Approve Deliverable Expectation Document for Web-Based Training Center	0 days	Tue 3/16/21	Tue 3/16/21	No
1421	1421	4.31.1	4.31.3.4	5.24.7.11 Develop Web-Based Training Center	5 days	Thu 7/1/21	Wed 7/7/21	No
1422	1422	4.31.2	4.31.3.4	5.24.7.12 QA Deliverable	5 days	Thu 7/8/21	Wed 7/14/21	No
1423	1423	4.38.2	4.31.3.4	5.24.7.13 Submit Web-Based Training Center	0 days	Wed 7/14/21	Wed 7/14/21	No
1424	1424	4.38.1	4.31.3.4	5.24.7.14 Conduct Walk-through for Web-Based Training Center	2 days	Thu 7/15/21	Fri 7/16/21	No
1425	1425	4.31.3	4.31.3.4	5.24.7.15 Review Web-Based Training Center	10 days	Thu 7/15/21	Wed 7/28/21	No
1426	1426	4.31.3	4.31.3.4	5.24.7.16 Provide Feedback on Web-Based Training Center	0 days	Wed 7/28/21	Wed 7/28/21	No
1427	1427	4.31.2	4.31.3.4	5.24.7.17 Incorporate Feedback on Web-Based Training Center	4 days	Thu 7/29/21	Tue 8/3/21	No
1428	1428	4.38.2	4.31.3.4	5.24.7.18 Submit Final Version of Web-Based Training Center	0 days	Tue 8/3/21	Tue 8/3/21	No
1429	1429	4.31.3	4.31.3.4	5.24.7.19 Review and Verify Web-Based Training Center	3 days	Wed 8/4/21	Fri 8/6/21	No
1430	1430	4.31.1	4.31.3.4	5.24.7.20 Approve Web-Based Training Center	0 days	Fri 8/6/21	Fri 8/6/21	No
1431	**1431**	**4.31**	**4.31.3.5**	**5.24.8 DELIVERABLE: System Training Reports**	**113 days**	**Thu 7/1/21**	**Mon 12/13/21**	**No**
1432	1432	4.31.1	4.31.3.5	5.24.8.1 Develop Deliverable Expectation Document for System Training Reports	15 days	Thu 7/1/21	Wed 7/21/21	No
1433	1433	4.31.2	4.31.3.5	5.24.8.2 QA Deliverable Expectation Document	5 days	Thu 7/22/21	Wed 7/28/21	No
1434	1434	4.38.2	4.31.3.5	5.24.8.3 Submit Deliverable Expectation Document for System Training Reports	0 days	Wed 7/28/21	Wed 7/28/21	No
1435	1435	4.38.1	4.31.3.5	5.24.8.4 Conduct Walk-through for Deliverable Expectation Document for System Training Reports	2 days	Thu 7/29/21	Fri 7/30/21	No
1436	1436	4.31.3	4.31.3.5	5.24.8.5 Review Deliverable Expectation Document for System Training Reports	5 days	Thu 7/29/21	Wed 8/4/21	No
1437	1437	4.31.3	4.31.3.5	5.24.8.6 Provide Feedback on Deliverable Expectation Document for System Training Reports	0 days	Wed 8/4/21	Wed 8/4/21	No
1438	1438	4.31.2	4.31.3.5	5.24.8.7 Incorporate Feedback on Deliverable Expectation Document for System Training Reports	3 days	Thu 8/5/21	Mon 8/9/21	No
1439	1439	4.38.2	4.31.3.5	5.24.8.8 Submit Final Version of Deliverable Expectation Document for System Training Reports	0 days	Mon 8/9/21	Mon 8/9/21	No
1440	1440	4.31.3	4.31.3.5	5.24.8.9 Review and Verify Feedback	3 days	Tue 8/10/21	Thu 8/12/21	No
1441	1441	4.31.3	4.31.3.5	5.24.8.10 Approve Deliverable Expectation Document for System Training Reports	0 days	Thu 8/12/21	Thu 8/12/21	No



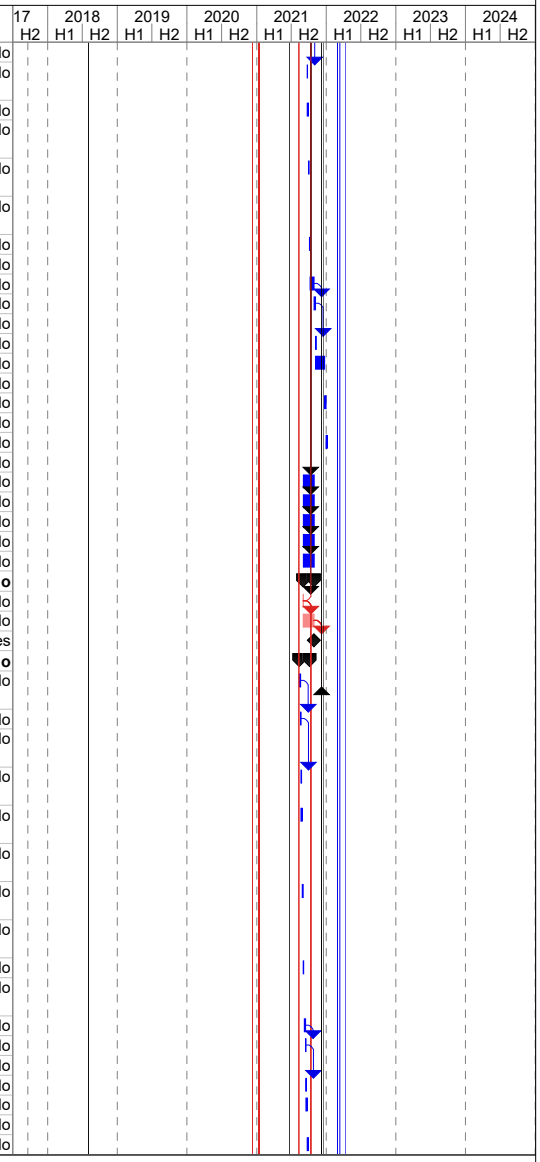
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1442	1442	4.31.1	4.31.3.5	5.24.8.11 Develop System Training Reports	5 days	Mon 11/1/21	Fri 11/5/21	No
1443	1443	4.31.2	4.31.3.5	5.24.8.12 QA Deliverable	5 days	Mon 11/8/21	Mon 11/15/21	No
1444	1444	4.38.2	4.31.3.5	5.24.8.13 Submit System Training Reports	0 days	Mon 11/15/21	Mon 11/15/21	No
1445	1445	4.38.1	4.31.3.5	5.24.8.14 Conduct Walk-through for System Training Reports	2 days	Tue 11/16/21	Wed 11/17/21	No
1446	1446	4.31.3	4.31.3.5	5.24.8.15 Review System Training Reports	10 days	Tue 11/16/21	Wed 12/1/21	No
1447	1447	4.31.3	4.31.3.5	5.24.8.16 Provide Feedback on System Training Reports	0 days	Wed 12/1/21	Wed 12/1/21	No
1448	1448	4.31.2	4.31.3.5	5.24.8.17 Incorporate Feedback on System Training Reports	5 days	Thu 12/2/21	Wed 12/8/21	No
1449	1449	4.38.2	4.31.3.5	5.24.8.18 Submit Final Version of System Training Reports	0 days	Wed 12/8/21	Wed 12/8/21	No
1450	1450	4.31.3	4.31.3.5	5.24.8.19 Review and Verify System Training Reports	3 days	Thu 12/9/21	Mon 12/13/21	No
1451	1451	4.31.1	4.31.3.5	5.24.8.20 Approve System Training Reports	0 days	Mon 12/13/21	Mon 12/13/21	No
1452	1452	4.28.2.5		5.24.9 Set Up, Deliver and Deploy Certification Environment	30 days	Thu 4/1/21	Thu 5/13/21	No
1453	1453	4.28.2.5		5.24.10 Update hardware and software list	10 days	Fri 5/14/21	Thu 5/27/21	No
1454	1454	4.28.2.5		5.24.11 Set Up, Deliver and Deploy Production Environment	30 days	Wed 9/8/21	Tue 10/19/21	No
1455	1455	4.28.2.5		5.24.12 Update hardware and software list	10 days	Wed 10/20/21	Wed 11/3/21	No
1456	**1456**	**1.2.1.4**		**5.25 Deploy**	**307 days**	**Fri 4/2/21**	**Wed 6/22/22**	**No**
1457	**1457**	**4.21**	**4.21.3.2**	**5.25.1 DELIVERABLE: Successful Execution of the Successful Execution of Web-Based Training Management Plan**	**64 days**	**Wed 12/15/21**	**Fri 3/18/22**	**No**
1458	1458	4.21.1	4.21.3.2	5.25.1.1 Develop Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	10 days	Wed 12/15/21	Wed 12/29/21	No
1459	1459	4.21.2	4.21.3.2	5.25.1.2 QA Deliverable Expectation Document	5 days	Thu 12/30/21	Thu 1/6/22	No
1460	1460	4.38.2	4.21.3.2	5.25.1.3 Submit Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	0 days	Thu 1/6/22	Thu 1/6/22	Yes
1461	1461	4.38.1	4.21.3.2	5.25.1.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	2 days	Fri 1/7/22	Mon 1/10/22	No
1462	1462	4.21.3	4.21.3.2	5.25.1.5 Review Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	5 days	Fri 1/7/22	Thu 1/13/22	No
1463	1463	4.21.3	4.21.3.2	5.25.1.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	0 days	Thu 1/13/22	Thu 1/13/22	Yes
1464	1464	4.21.2	4.21.3.2	5.25.1.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	3 days	Fri 1/14/22	Wed 1/19/22	No
1465	1465	4.38.2	4.21.3.2	5.25.1.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	0 days	Wed 1/19/22	Wed 1/19/22	Yes
1466	1466	4.21.3	4.21.3.2	5.25.1.9 Review and Verify Feedback	3 days	Thu 1/20/22	Mon 1/24/22	No
1467	1467	4.21.3	4.21.3.2	5.25.1.10 Approve Deliverable Expectation Document for Successful Execution of Web-Based Training Management Plan	0 days	Mon 1/24/22	Mon 1/24/22	Yes
1468	1468	4.21.1	4.21.3.2	5.25.1.11 Develop Successful Execution of Web-Based Training Management Plan	15 days	Tue 1/25/22	Mon 2/14/22	No
1469	1469	4.21.2	4.21.3.2	5.25.1.12 QA Deliverable	5 days	Tue 2/15/22	Tue 2/22/22	No
1470	1470	4.38.2	4.21.3.2	5.25.1.13 Submit Successful Execution of Web-Based Training Management Plan	0 days	Tue 2/22/22	Tue 2/22/22	Yes
1471	1471	4.38.1	4.21.3.2	5.25.1.14 Conduct Walk-through for Successful Execution of Web-Based Training Management Plan	2 days	Wed 2/23/22	Thu 2/24/22	No
1472	1472	4.21.3	4.21.3.2	5.25.1.15 Review Successful Execution of Web-Based Training Management Plan	10 days	Wed 2/23/22	Tue 3/8/22	No
1473	1473	4.21.3	4.21.3.2	5.25.1.16 Provide Feedback on Successful Execution of Web-Based Training Management Plan	0 days	Tue 3/8/22	Tue 3/8/22	Yes
1474	1474	4.21.2	4.21.3.2	5.25.1.17 Incorporate Feedback on Successful Execution of Web-Based Training Management Plan	5 days	Wed 3/9/22	Tue 3/15/22	No
1475	1475	4.38.2	4.21.3.2	5.25.1.18 Submit Final Version of Successful Execution of Web-Based Training Management Plan	0 days	Tue 3/15/22	Tue 3/15/22	Yes
1476	1476	4.21.3	4.21.3.2	5.25.1.19 Review and Verify Successful Execution of Web-Based Training Management Plan	3 days	Wed 3/16/22	Fri 3/18/22	No
1477	1477	4.21.3	4.21.3.2	5.25.1.20 Approve Successful Execution of Web-Based Training Management Plan	0 days	Fri 3/18/22	Fri 3/18/22	Yes
1478	**1478**	**4.29**	**4.29.3.1**	**5.25.2 DELIVERABLE: Data Conversion**	**83 days**	**Wed 9/1/21**	**Tue 1/4/22**	**No**
1479	1479	4.29.1	4.29.3.1	5.25.2.1 Develop Deliverable Expectation Document for Data Conversion	10 days	Wed 9/1/21	Wed 9/15/21	No
1480	1480	4.29.2	4.29.3.1	5.25.2.2 QA Deliverable Expectation Document	4 days	Thu 9/16/21	Tue 9/21/21	No



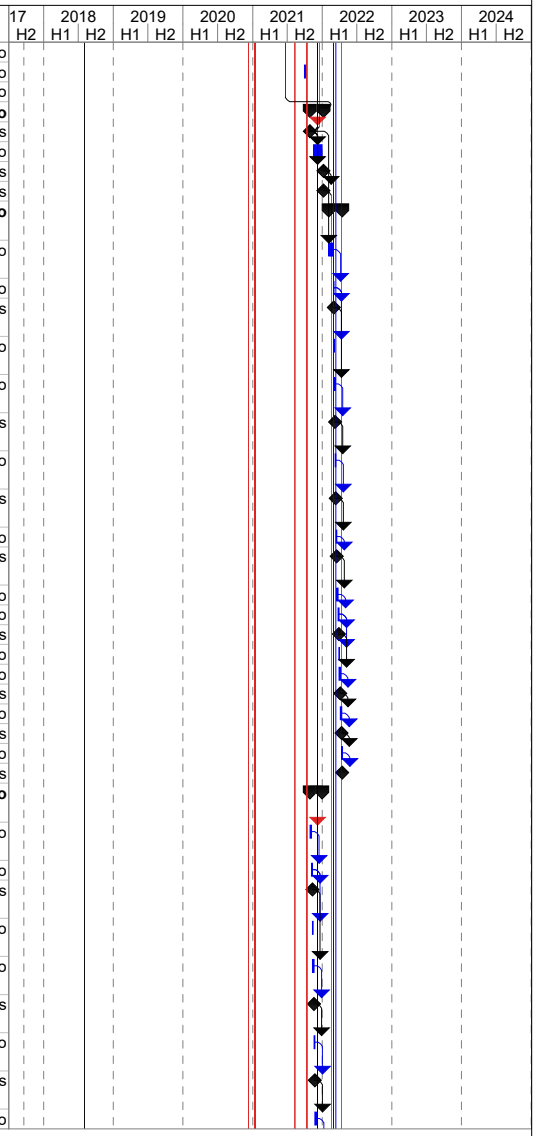
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1481	1481	4.38.2	4.29.3.1	5.25.2.3 Submit Deliverable Expectation Document for Data Conversion	0 days	Tue 9/21/21	Tue 9/21/21	No
1482	1482	4.38.1	4.29.3.1	5.25.2.4 Conduct Walk-through for Deliverable Expectation Document for Data Conversion	2 days	Wed 9/22/21	Thu 9/23/21	No
1483	1483	4.29.3	4.29.3.1	5.25.2.5 Review Deliverable Expectation Document for Data Conversion	5 days	Wed 9/22/21	Tue 9/28/21	No
1484	1484	4.29.3	4.29.3.1	5.25.2.6 Provide Feedback on Deliverable Expectation Document for Data Conversion	0 days	Tue 9/28/21	Tue 9/28/21	No
1485	1485	4.29.2	4.29.3.1	5.25.2.7 Incorporate Feedback on Deliverable Expectation Document for Data Conversion	3 days	Wed 9/29/21	Fri 10/1/21	No
1486	1486	4.38.2	4.29.3.1	5.25.2.8 Submit Final Version of Deliverable Expectation Document for Data Conversion	0 days	Fri 10/1/21	Fri 10/1/21	No
1487	1487	4.29.3	4.29.3.1	5.25.2.9 Review and Verify Feedback	3 days	Mon 10/4/21	Wed 10/6/21	No
1488	1488	4.29.3	4.29.3.1	5.25.2.10 Approve Deliverable Expectation Document for Data Conversion	0 days	Wed 10/6/21	Wed 10/6/21	No
1489	1489	4.29.1	4.29.3.1	5.25.2.11 Develop Data Conversion	15 days	Thu 10/7/21	Wed 10/27/21	No
1490	1490	4.29.2	4.29.3.1	5.25.2.12 QA Deliverable	5 days	Thu 10/28/21	Thu 11/4/21	No
1491	1491	4.38.2	4.29.3.1	5.25.2.13 Submit Data Conversion	0 days	Thu 11/4/21	Thu 11/4/21	No
1492	1492	4.38.1	4.29.3.1	5.25.2.14 Conduct Walk-through for Data Conversion	2 days	Fri 11/5/21	Mon 11/8/21	No
1493	1493	4.29.3	4.29.3.1	5.25.2.15 Review Data Conversion	30 days	Fri 11/5/21	Tue 12/21/21	No
1494	1494	4.29.3	4.29.3.1	5.25.2.16 Provide Feedback on Data Conversion	0 days	Tue 12/21/21	Tue 12/21/21	No
1495	1495	4.29.2	4.29.3.1	5.25.2.17 Incorporate Feedback on Data Conversion	5 days	Wed 12/22/21	Wed 12/29/21	No
1496	1496	4.38.2	4.29.3.1	5.25.2.18 Submit Final Version of Data Conversion	0 days	Wed 12/29/21	Wed 12/29/21	No
1497	1497	4.29.3	4.29.3.1	5.25.2.19 Review and Verify Data Conversion	3 days	Thu 12/30/21	Tue 1/4/22	No
1498	1498	4.29.1	4.29.3.1	5.25.2.20 Approve Data Conversion	0 days	Tue 1/4/22	Tue 1/4/22	No
1499	1499	4.34		5.25.3 Perform Stabilization Activities for Deployed Code	40 days	Thu 9/2/21	Thu 10/28/21	No
1500	1500	4.34		5.25.4 Perform Dy Run of Application Code	40 days	Thu 9/2/21	Thu 10/28/21	No
1501	1501	4.34		5.25.5 Seed Data Prepareation	40 days	Thu 9/2/21	Thu 10/28/21	No
1502	1502	4.34		5.25.6 Perform Podcution Readiness Assessment	40 days	Thu 9/2/21	Thu 10/28/21	No
1503	1503	4.34		5.25.7 Conduct Role and Security Mapping	40 days	Thu 9/2/21	Thu 10/28/21	No
1504	**1504**	**1.2.1.4**		**5.25.8 Stabilization**	**40 days**	**Wed 9/1/21**	**Wed 10/27/21**	**No**
1505	1505	4.17		5.25.8.1 Stabilization Begin	1 day	Wed 9/1/21	Wed 9/1/21	No
1506	1506	4.17		5.25.8.2 Stabilization Period	40 days	Wed 9/1/21	Wed 10/27/21	No
1507	1507	4.34		5.25.8.3 Stabilization Period End	0 days	Wed 10/27/21	Wed 10/27/21	Yes
1508	**1508**	**4.35**	**4.35.3.9**	**5.25.9 DELIVERABLE: Technical Support Procedures**	**37 days**	**Thu 8/12/21**	**Mon 10/4/21**	**No**
1509	1509	4.35.1	4.35.3.9	5.25.9.1 Develop Deliverable Expectation Document for Technical Support Procedures	5 days	Thu 8/12/21	Wed 8/18/21	No
1510	1510	4.35.2	4.35.3.9	5.25.9.2 QA Deliverable Expectation Document	1 day	Thu 8/19/21	Thu 8/19/21	No
1511	1511	4.38.2	4.35.3.9	5.25.9.3 Submit Deliverable Expectation Document for Technical Support Procedures	0 days	Thu 8/19/21	Thu 8/19/21	No
1512	1512	4.38.1	4.35.3.9	5.25.9.4 Conduct Walk-through for Deliverable Expectation Document for Technical Support Procedures	2 days	Fri 8/20/21	Mon 8/23/21	No
1513	1513	4.35.3	4.35.3.9	5.25.9.5 Review Deliverable Expectation Document for Technical Support Procedures	5 days	Fri 8/20/21	Thu 8/26/21	No
1514	1514	4.35.3	4.35.3.9	5.25.9.6 Provide Feedback on Deliverable Expectation Document for Technical Support Procedures	0 days	Thu 8/26/21	Thu 8/26/21	No
1515	1515	4.35.2	4.35.3.9	5.25.9.7 Incorporate Feedback on Deliverable Expectation Document for Technical Support Procedures	3 days	Fri 8/27/21	Tue 8/31/21	No
1516	1516	4.38.2	4.35.3.9	5.25.9.8 Submit Final Version of Deliverable Expectation Document for Technical Support Procedures	0 days	Tue 8/31/21	Tue 8/31/21	No
1517	1517	4.35.3	4.35.3.9	5.25.9.9 Review and Verify Feedback	3 days	Wed 9/1/21	Fri 9/3/21	No
1518	1518	4.35.3	4.35.3.9	5.25.9.10 Approve Deliverable Expectation Document for Technical Support Procedures	0 days	Fri 9/3/21	Fri 9/3/21	No
1519	1519	4.35.1	4.35.3.9	5.25.9.11 Develop Technical Support Procedures	5 days	Tue 9/7/21	Mon 9/13/21	No
1520	1520	4.35.2	4.35.3.9	5.25.9.12 QA Deliverable	1 day	Tue 9/14/21	Tue 9/14/21	No
1521	1521	4.38.2	4.35.3.9	5.25.9.13 Submit Technical Support Procedures	0 days	Tue 9/14/21	Tue 9/14/21	No
1522	1522	4.38.1	4.35.3.9	5.25.9.14 Conduct Walk-through for Technical Support Procedures	2 days	Wed 9/15/21	Thu 9/16/21	No
1523	1523	4.35.3	4.35.3.9	5.25.9.15 Review Technical Support Procedures	5 days	Wed 9/15/21	Tue 9/21/21	No
1524	1524	4.35.3	4.35.3.9	5.25.9.16 Provide Feedback on Technical Support Procedures	0 days	Tue 9/21/21	Tue 9/21/21	No
1525	1525	4.35.2	4.35.3.9	5.25.9.17 Incorporate Feedback on Technical Support Procedures	5 days	Wed 9/22/21	Tue 9/28/21	No



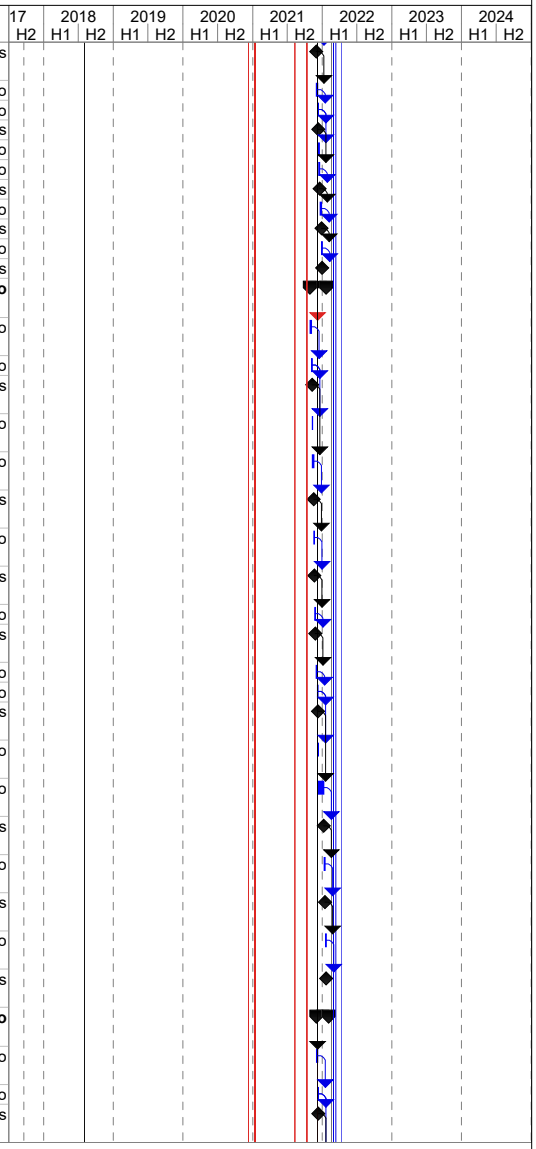
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1526	1526	4.38.2	4.35.3.9	5.25.9.18 Submit Final Version of Technical Support Procedures	0 days	Tue 9/28/21	Tue 9/28/21	No
1527	1527	4.35.3	4.35.3.9	5.25.9.19 Review and Verify Technical Support Procedures	4 days	Wed 9/29/21	Mon 10/4/21	No
1528	1528	4.35.1	4.35.3.9	5.25.9.20 Approve Technical Support Procedures	0 days	Mon 10/4/21	Mon 10/4/21	No
1529	**1529**	**4.17**		**5.25.10 Pilot**	**45 days**	**Wed 10/27/21**	**Thu 1/6/22**	**No**
1530	1530	4.17		5.25.10.1 Pilot Start	0 days	Wed 10/27/21	Wed 10/27/21	Yes
1531	1531	4.17		5.25.10.2 Pilot Period	29 days	Tue 11/16/21	Wed 12/29/21	No
1532	1532	4.17		5.25.10.3 Pilot Complete	0 days	Thu 1/6/22	Thu 1/6/22	Yes
1533	1533	4.17		5.25.10.4 Post Pilot Activities	0 days	Thu 1/6/22	Thu 1/6/22	Yes
1534	**1534**	**4.8**	**4.8.3.2**	**5.25.11 DELIVERABLE: Successful Execution of the Business Continuity and Disaster Recovery Plan**	**49 days**	**Fri 2/4/22**	**Thu 4/14/22**	**No**
1535	1535	4.8.1	4.8.3.2	5.25.11.1 Develop Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	15 days	Fri 2/4/22	Fri 2/25/22	No
1536	1536	4.8.2	4.8.3.2	5.25.11.2 QA Deliverable Expectation Document	2 days	Mon 2/28/22	Tue 3/1/22	No
1537	1537	4.38.2	4.8.3.2	5.25.11.3 Submit Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Tue 3/1/22	Tue 3/1/22	Yes
1538	1538	4.38.1	4.8.3.2	5.25.11.4 Conduct Walk-through for Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	2 days	Wed 3/2/22	Thu 3/3/22	No
1539	1539	4.8.3	4.8.3.2	5.25.11.5 Review Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	5 days	Wed 3/2/22	Tue 3/8/22	No
1540	1540	4.8.3	4.8.3.2	5.25.11.6 Provide Feedback on Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Tue 3/8/22	Tue 3/8/22	Yes
1541	1541	4.8.2	4.8.3.2	5.25.11.7 Incorporate Feedback on Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	3 days	Wed 3/9/22	Fri 3/11/22	No
1542	1542	4.38.2	4.8.3.2	5.25.11.8 Submit Final Version of Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Fri 3/11/22	Fri 3/11/22	Yes
1543	1543	4.8.3	4.8.3.2	5.25.11.9 Review and Verify Feedback	3 days	Mon 3/14/22	Wed 3/16/22	No
1544	1544	4.8.3	4.8.3.2	5.25.11.10 Approve Deliverable Expectation Document for Business Continuity and Disaster Recovery Plan	0 days	Wed 3/16/22	Wed 3/16/22	Yes
1545	1545	4.8.1	4.8.3.2	5.25.11.11 Develop Acceptance Testing Deliverable	5 days	Thu 3/17/22	Wed 3/23/22	No
1546	1546	4.8.2	4.8.3.2	5.25.11.12 QA Deliverable	3 days	Thu 3/24/22	Mon 3/28/22	No
1547	1547	4.38.2	4.8.3.2	5.25.11.13 Submit Acceptance Testing Deliverable	0 days	Mon 3/28/22	Mon 3/28/22	Yes
1548	1548	4.38.1	4.8.3.2	5.25.11.14 Conduct Walk-through for Acceptance Testing Deliverable	2 days	Tue 3/29/22	Wed 3/30/22	No
1549	1549	4.8.3	4.8.3.2	5.25.11.15 Review Acceptance Testing Deliverable	5 days	Tue 3/29/22	Mon 4/4/22	No
1550	1550	4.8.3	4.8.3.2	5.25.11.16 Provide Feedback on Acceptance Testing Deliverable	0 days	Mon 4/4/22	Mon 4/4/22	Yes
1551	1551	4.8.2	4.8.3.2	5.25.11.17 Incorporate Feedback on Acceptance Testing Deliverable	5 days	Tue 4/5/22	Mon 4/11/22	No
1552	1552	4.38.2	4.8.3.2	5.25.11.18 Submit Final Version of Acceptance Testing Deliverable	0 days	Mon 4/11/22	Mon 4/11/22	Yes
1553	1553	4.8.3	4.8.3.2	5.25.11.19 Review and Verify Acceptance Testing Deliverable	3 days	Tue 4/12/22	Thu 4/14/22	No
1554	1554	4.8.1	4.8.3.2	5.25.11.20 Approve Acceptance Testing Deliverable	0 days	Thu 4/14/22	Thu 4/14/22	Yes
1555	**1555**	**4.17**	**4.17.3.2**	**5.25.12 DELIVERABLE: Successful Execution of the Release Management Plan**	**41 days**	**Thu 10/28/21**	**Thu 12/30/21**	**No**
1556	1556	4.17.1	4.17.3.2	5.25.12.1 Develop Deliverable Expectation Document for Release Management Plan	5 days	Thu 10/28/21	Thu 11/4/21	No
1557	1557	4.17.2	4.17.3.2	5.25.12.2 QA Deliverable Expectation Document	3 days	Fri 11/5/21	Tue 11/9/21	No
1558	1558	4.38.2	4.17.3.2	5.25.12.3 Submit Deliverable Expectation Document for Release Management Plan	0 days	Tue 11/9/21	Tue 11/9/21	Yes
1559	1559	4.38.1	4.17.3.2	5.25.12.4 Conduct Walk-through for Deliverable Expectation Document for Release Management Plan	2 days	Wed 11/10/21	Fri 11/12/21	No
1560	1560	4.17.2	4.17.3.2	5.25.12.5 Review Deliverable Expectation Document for Release Management Plan	5 days	Wed 11/10/21	Wed 11/17/21	No
1561	1561	4.17.2	4.17.3.2	5.25.12.6 Provide Feedback on Deliverable Expectation Document for Release Management Plan	0 days	Wed 11/17/21	Wed 11/17/21	Yes
1562	1562	4.17.2	4.17.3.2	5.25.12.7 Incorporate Feedback on Deliverable Expectation Document for Release Management Plan	3 days	Thu 11/18/21	Mon 11/22/21	No
1563	1563	4.38.2	4.17.3.2	5.25.12.8 Submit Final Version of Deliverable Expectation Document for Release Management Plan	0 days	Mon 11/22/21	Mon 11/22/21	Yes
1564	1564	4.17.2	4.17.3.2	5.25.12.9 Review and Verify Feedback	3 days	Tue 11/23/21	Mon 11/29/21	No



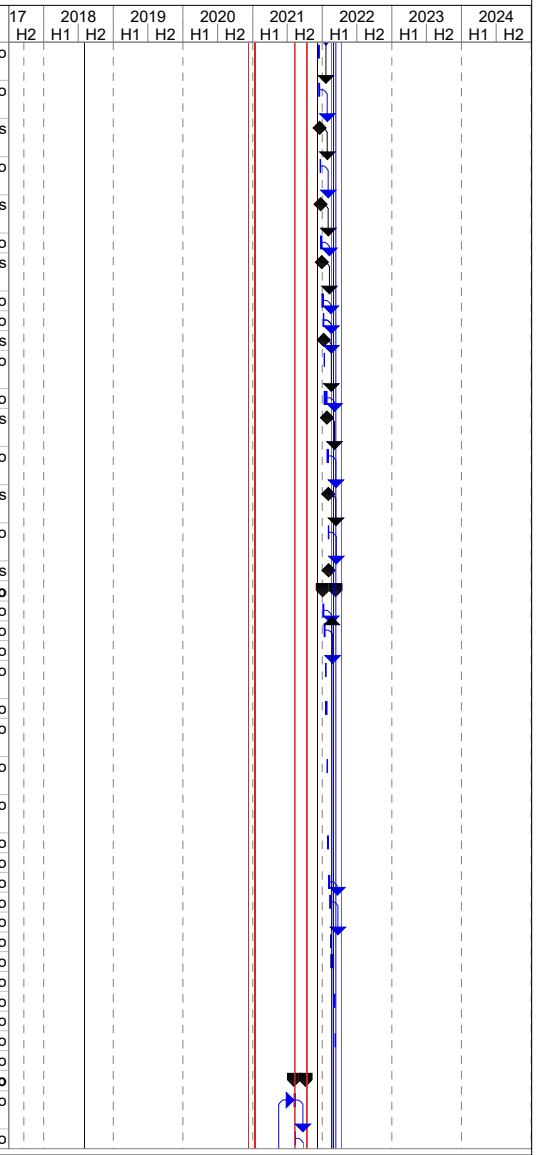
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1565	1565	4.17.2	4.17.3.2	5.25.12.10 Approve Deliverable Expectation Document for Release Management Plan	0 days	Mon 11/29/21	Mon 11/29/21	Yes
1566	1566	4.17.1	4.17.3.2	5.25.12.11 Develop Release Management Plan	5 days	Tue 11/30/21	Mon 12/6/21	No
1567	1567	4.17.2	4.17.3.2	5.25.12.12 QA Deliverable	4 days	Tue 12/7/21	Fri 12/10/21	No
1568	1568	4.38.2	4.17.3.2	5.25.12.13 Submit Release Management Plan	0 days	Fri 12/10/21	Fri 12/10/21	Yes
1569	1569	4.38.1	4.17.3.2	5.25.12.14 Conduct Walk-through for Release Management Plan	2 days	Mon 12/13/21	Tue 12/14/21	No
1570	1570	4.17.2	4.17.3.2	5.25.12.15 Review Release Management Plan	5 days	Mon 12/13/21	Fri 12/17/21	No
1571	1571	4.17.2	4.17.3.2	5.25.12.16 Provide Feedback on Release Management Plan	0 days	Fri 12/17/21	Fri 12/17/21	Yes
1572	1572	4.17.2	4.17.3.2	5.25.12.17 Incorporate Feedback on Release Management Plan	5 days	Mon 12/20/21	Mon 12/27/21	No
1573	1573	4.38.2	4.17.3.2	5.25.12.18 Submit Final Version of Release Management Plan	0 days	Mon 12/27/21	Mon 12/27/21	Yes
1574	1574	4.17.2	4.17.3.2	5.25.12.19 Review and Verify Feedback on Release Management Plan	3 days	Tue 12/28/21	Thu 12/30/21	No
1575	1575	4.17.1	4.17.3.2	5.25.12.20 Approve Release Management Plan	0 days	Thu 12/30/21	Thu 12/30/21	Yes
1576	**1576**	**4.18**	**4.18.3.2**	**5.25.13 DELIVERABLE: Successful Execution of the Successful Execution of Data Conversion Management Plan**	**54 days**	**Thu 10/28/21**	**Thu 1/20/22**	**No**
1577	1577	4.18.1	4.18.3.2	5.25.13.1 Develop Deliverable Expectation Document for Successful Execution of Successful Execution of Data Conversion Management Plan	5 days	Thu 10/28/21	Thu 11/4/21	No
1578	1578	4.18.2	4.18.3.2	5.25.13.2 QA Deliverable Expectation Document	2 days	Fri 11/5/21	Mon 11/8/21	No
1579	1579	4.38.2	4.18.3.2	5.25.13.3 Submit Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	0 days	Mon 11/8/21	Mon 11/8/21	Yes
1580	1580	4.38.1	4.18.3.2	5.25.13.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	2 days	Tue 11/9/21	Wed 11/10/21	No
1581	1581	4.18.3	4.18.3.2	5.25.13.5 Review Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	5 days	Tue 11/9/21	Tue 11/16/21	No
1582	1582	4.18.3	4.18.3.2	5.25.13.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	0 days	Tue 11/16/21	Tue 11/16/21	Yes
1583	1583	4.18.2	4.18.3.2	5.25.13.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	3 days	Wed 11/17/21	Fri 11/19/21	No
1584	1584	4.38.2	4.18.3.2	5.25.13.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	0 days	Fri 11/19/21	Fri 11/19/21	Yes
1585	1585	4.18.3	4.18.3.2	5.25.13.9 Review and Verify Feedback	3 days	Mon 11/22/21	Wed 11/24/21	No
1586	1586	4.18.3	4.18.3.2	5.25.13.10 Approve Deliverable Expectation Document for Successful Execution of Data Conversion Management Plan	0 days	Wed 11/24/21	Wed 11/24/21	Yes
1587	1587	4.18.1	4.18.3.2	5.25.13.11 Develop Successful Execution of Data Conversion Management Pl	5 days	Mon 11/29/21	Fri 12/3/21	No
1588	1588	4.18.2	4.18.3.2	5.25.13.12 QA Deliverable	3 days	Mon 12/6/21	Wed 12/8/21	No
1589	1589	4.38.2	4.18.3.2	5.25.13.13 Submit Successful Execution of Data Conversion Management Plan	0 days	Wed 12/8/21	Wed 12/8/21	Yes
1590	1590	4.38.1	4.18.3.2	5.25.13.14 Conduct Walk-through for Successful Execution of Data Conversion Management Plan	2 days	Thu 12/9/21	Fri 12/10/21	No
1591	1591	4.18.3	4.18.3.2	5.25.13.15 Review Successful Execution of Data Conversion Management Plan	20 days	Thu 12/9/21	Fri 1/7/22	No
1592	1592	4.18.3	4.18.3.2	5.25.13.16 Provide Feedback on Successful Execution of Data Conversion Management Plan	0 days	Fri 1/7/22	Fri 1/7/22	Yes
1593	1593	4.18.2	4.18.3.2	5.25.13.17 Incorporate Feedback on Successful Execution of Data Conversion Management Plan	5 days	Mon 1/10/22	Fri 1/14/22	No
1594	1594	4.38.2	4.18.3.2	5.25.13.18 Submit Final Version of Successful Execution of Data Conversion Management Plan	0 days	Fri 1/14/22	Fri 1/14/22	Yes
1595	1595	4.18.3	4.18.3.2	5.25.13.19 Review and Verify Successful Execution of Data Conversion Management Plan	3 days	Tue 1/18/22	Thu 1/20/22	No
1596	1596	4.18.3	4.18.3.2	5.25.13.20 Approve Successful Execution of Data Conversion Management Plan	0 days	Thu 1/20/22	Thu 1/20/22	Yes
1597	**1597**	**4.20**	**4.20.3.2**	**5.25.14 DELIVERABLE: Successful Execution of the Training Management Plan**	**43 days**	**Wed 12/1/21**	**Wed 2/2/22**	**No**
1598	1598	4.20.1	4.20.3.2	5.25.14.1 Develop Deliverable Expectation Document for Successful Execution of Training Management Plan	5 days	Wed 12/1/21	Tue 12/7/21	No
1599	1599	4.20.2	4.20.3.2	5.25.14.2 QA Deliverable Expectation Document	3 days	Wed 12/8/21	Fri 12/10/21	No
1600	1600	4.38.2	4.20.3.2	5.25.14.3 Submit Deliverable Expectation Document for Successful Execution of Training Management Plan	0 days	Fri 12/10/21	Fri 12/10/21	Yes



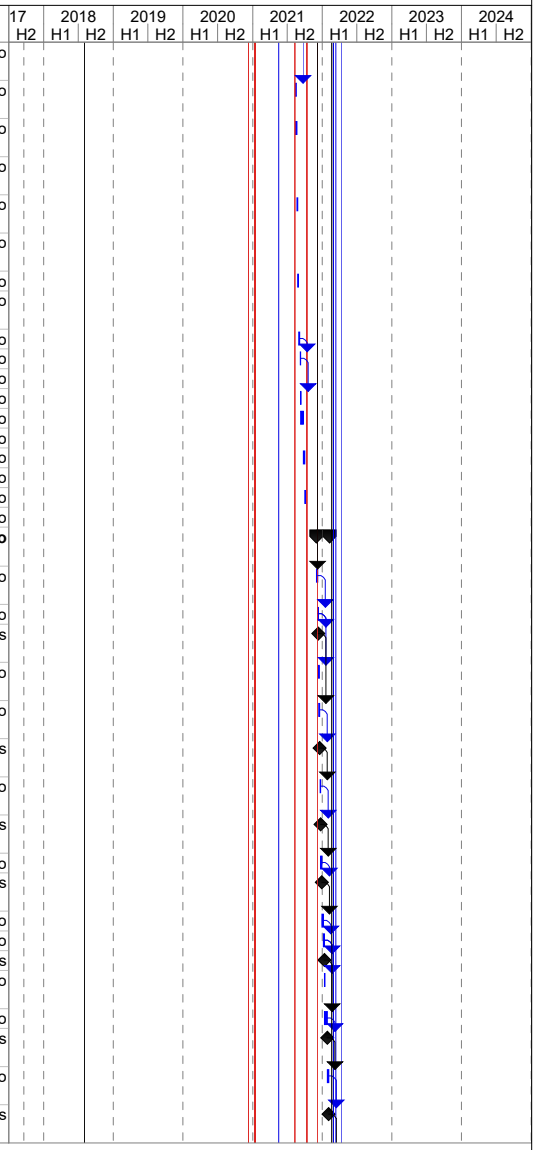
Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Critical
Milestone	Inactive Task	Manual Summary Rollup	Critical Split
Summary	Inactive Milestone	Manual Summary	Progress
Project Summary	Inactive Summary	Start-only	Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1601	1601	4.38.1	4.20.3.2	5.25.14.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Training Management Plan	2 days	Mon 12/13/21	Tue 12/14/21	No
1602	1602	4.20.3	4.20.3.2	5.25.14.5 Review Deliverable Expectation Document for Successful Execution of Training Management Plan	5 days	Mon 12/13/21	Fri 12/17/21	No
1603	1603	4.20.3	4.20.3.2	5.25.14.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Training Management Plan	0 days	Fri 12/17/21	Fri 12/17/21	Yes
1604	1604	4.20.2	4.20.3.2	5.25.14.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Training Management Plan	3 days	Mon 12/20/21	Wed 12/22/21	No
1605	1605	4.38.2	4.20.3.2	5.25.14.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Training Management Plan	0 days	Wed 12/22/21	Wed 12/22/21	Yes
1606	1606	4.20.3	4.20.3.2	5.25.14.9 Review and Verify Feedback	3 days	Thu 12/23/21	Tue 12/28/21	No
1607	1607	4.20.3	4.20.3.2	5.25.14.10 Approve Deliverable Expectation Document for Successful Execution of Training Management Plan	0 days	Tue 12/28/21	Tue 12/28/21	Yes
1608	1608	4.20.1	4.20.3.2	5.25.14.11 Develop Successful Execution of Training Management Plan	5 days	Wed 12/29/21	Wed 1/5/22	No
1609	1609	4.20.2	4.20.3.2	5.25.14.12 QA Deliverable	2 days	Thu 1/6/22	Fri 1/7/22	No
1610	1610	4.38.2	4.20.3.2	5.25.14.13 Submit Successful Execution of Training Management Plan	0 days	Fri 1/7/22	Fri 1/7/22	Yes
1611	1611	4.38.1	4.20.3.2	5.25.14.14 Conduct Walk-through for Successful Execution of Training Management Plan	2 days	Mon 1/10/22	Tue 1/11/22	No
1612	1612	4.20.3	4.20.3.2	5.25.14.15 Review Successful Execution of Training Management Plan	10 days	Mon 1/10/22	Mon 1/24/22	No
1613	1613	4.20.3	4.20.3.2	5.25.14.16 Provide Feedback on Successful Execution of Training Management Plan	0 days	Mon 1/24/22	Mon 1/24/22	Yes
1614	1614	4.20.2	4.20.3.2	5.25.14.17 Incorporate Feedback on Successful Execution of Training Management Plan	5 days	Tue 1/25/22	Mon 1/31/22	No
1615	1615	4.38.2	4.20.3.2	5.25.14.18 Submit Final Version of Successful Execution of Training Management Plan	0 days	Mon 1/31/22	Mon 1/31/22	Yes
1616	1616	4.20.3	4.20.3.2	5.25.14.19 Review and Verify Feedback on Successful Execution of Training Management Plan	2 days	Tue 2/1/22	Wed 2/2/22	No
1617	1617	4.20.3	4.20.3.2	5.25.14.20 Approve Successful Execution of Training Management Plan	0 days	Wed 2/2/22	Wed 2/2/22	Yes
1618	**1618**	**4.35**	**4.35.3.5**	**5.25.15 DELIVERABLE: Operations Plan**	**47 days**	**Mon 1/3/22**	**Thu 3/10/22**	**No**
1619	1619	4.35.1	4.35.3.5	5.25.15.1 Develop Deliverable Expectation Document for Operations Plan	5 days	Mon 1/3/22	Fri 1/7/22	No
1620	1620	4.35.2	4.35.3.5	5.25.15.2 QA Deliverable Expectation Document	5 days	Mon 1/10/22	Fri 1/14/22	No
1621	1621	4.38.2	4.35.3.5	5.25.15.3 Submit Deliverable Expectation Document for Operations Plan	0 days	Fri 1/14/22	Fri 1/14/22	No
1622	1622	4.38.1	4.35.3.5	5.25.15.4 Conduct Walk-through for Deliverable Expectation Document for Operations Plan	2 days	Tue 1/18/22	Wed 1/19/22	No
1623	1623	4.35.3	4.35.3.5	5.25.15.5 Review Deliverable Expectation Document for Operations Plan	5 days	Tue 1/18/22	Mon 1/24/22	No
1624	1624	4.35.3	4.35.3.5	5.25.15.6 Provide Feedback on Deliverable Expectation Document for Operations Plan	0 days	Mon 1/24/22	Mon 1/24/22	No
1625	1625	4.35.2	4.35.3.5	5.25.15.7 Incorporate Feedback on Deliverable Expectation Document for Operations Plan	3 days	Tue 1/25/22	Thu 1/27/22	No
1626	1626	4.38.2	4.35.3.5	5.25.15.8 Submit Final Version of Deliverable Expectation Document for Operations Plan	0 days	Thu 1/27/22	Thu 1/27/22	No
1627	1627	4.35.3	4.35.3.5	5.25.15.9 Review and Verify Feedback	3 days	Fri 1/28/22	Tue 2/1/22	No
1628	1628	4.35.3	4.35.3.5	5.25.15.10 Approve Deliverable Expectation Document for Operations Plan	0 days	Tue 2/1/22	Tue 2/1/22	No
1629	1629	4.35.1	4.35.3.5	5.25.15.11 Develop Operations Plan	5 days	Wed 2/2/22	Tue 2/8/22	No
1630	1630	4.35.2	4.35.3.5	5.25.15.12 QA Deliverable	3 days	Wed 2/9/22	Fri 2/11/22	No
1631	1631	4.38.2	4.35.3.5	5.25.15.13 Submit Operations Plan	0 days	Fri 2/11/22	Fri 2/11/22	No
1632	1632	4.38.1	4.35.3.5	5.25.15.14 Conduct Walk-through for Operations Plan	2 days	Mon 2/14/22	Tue 2/15/22	No
1633	1633	4.35.3	4.35.3.5	5.25.15.15 Review Operations Plan	10 days	Mon 2/14/22	Mon 2/28/22	No
1634	1634	4.35.3	4.35.3.5	5.25.15.16 Provide Feedback on Operations Plan	0 days	Mon 2/28/22	Mon 2/28/22	No
1635	1635	4.35.2	4.35.3.5	5.25.15.17 Incorporate Feedback on Operations Plan	5 days	Tue 3/1/22	Mon 3/7/22	No
1636	1636	4.38.2	4.35.3.5	5.25.15.18 Submit Final Version of Operations Plan	0 days	Mon 3/7/22	Mon 3/7/22	No
1637	1637	4.35.3	4.35.3.5	5.25.15.19 Review and Verify Operations Plan	3 days	Tue 3/8/22	Thu 3/10/22	No
1638	1638	4.35.1	4.35.3.5	5.25.15.20 Approve Operations Plan	0 days	Thu 3/10/22	Thu 3/10/22	No
1639	**1639**	**4.35**	**4.35.3.11**	**5.25.16 DELIVERABLE: Help Desk Management Plan**	**42 days**	**Thu 8/5/21**	**Mon 10/4/21**	**No**
1640	1640	4.35.1	4.35.3.11	5.25.16.1 Develop Deliverable Expectation Document for Help Desk Management Plan	5 days	Thu 8/5/21	Wed 8/11/21	No
1641	1641	4.35.2	4.35.3.11	5.25.16.2 QA Deliverable Expectation Document	1 day	Thu 8/12/21	Thu 8/12/21	No



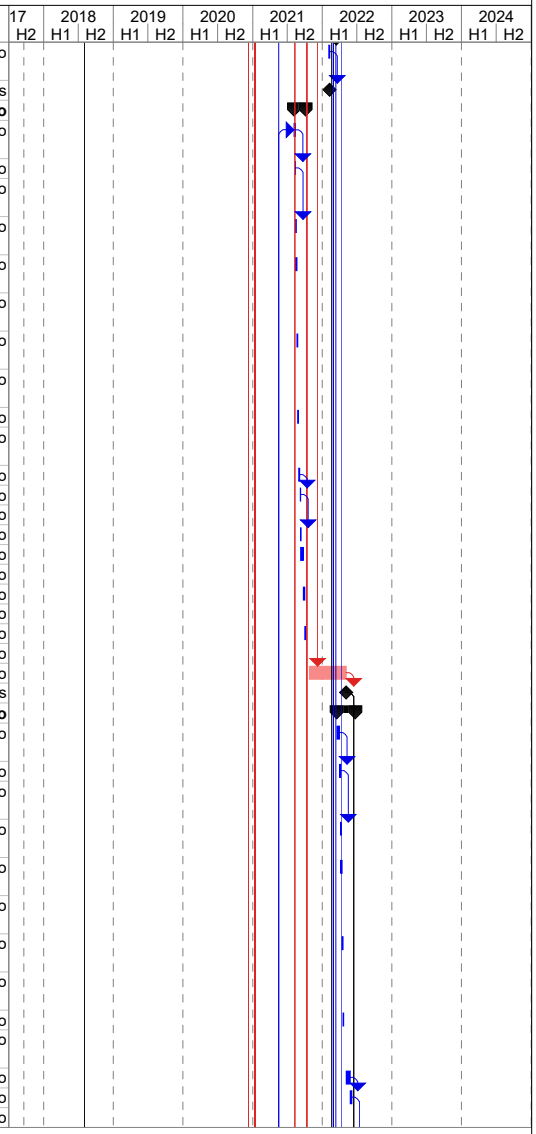
Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Critical
Milestone	Inactive Task	Manual Summary Rollup	Critical Split
Summary	Inactive Milestone	Manual Summary	Progress
Project Summary	Inactive Summary	Start-only	Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1642	1642	4.38.2	4.35.3.11	5.25.16.3 Submit Deliverable Expectation Document for Help Desk Management Plan	0 days	Thu 8/12/21	Thu 8/12/21	No
1643	1643	4.38.1	4.35.3.11	5.25.16.4 Conduct Walk-through for Deliverable Expectation Document for Help Desk Management Plan	2 days	Fri 8/13/21	Mon 8/16/21	No
1644	1644	4.35.3	4.35.3.11	5.25.16.5 Review Deliverable Expectation Document for Help Desk Management Plan	5 days	Fri 8/13/21	Thu 8/19/21	No
1645	1645	4.35.3	4.35.3.11	5.25.16.6 Provide Feedback on Deliverable Expectation Document for Help Desk Management Plan	0 days	Thu 8/19/21	Thu 8/19/21	No
1646	1646	4.35.2	4.35.3.11	5.25.16.7 Incorporate Feedback on Deliverable Expectation Document for Help Desk Management Plan	3 days	Fri 8/20/21	Tue 8/24/21	No
1647	1647	4.38.2	4.35.3.11	5.25.16.8 Submit Final Version of Deliverable Expectation Document for Help Desk Management Plan	0 days	Tue 8/24/21	Tue 8/24/21	No
1648	1648	4.35.3	4.35.3.11	5.25.16.9 Review and Verify Feedback	3 days	Wed 8/25/21	Fri 8/27/21	No
1649	1649	4.35.3	4.35.3.11	5.25.16.10 Approve Deliverable Expectation Document for Help Desk Management Plan	0 days	Fri 8/27/21	Fri 8/27/21	No
1650	1650	4.35.1	4.35.3.11	5.25.16.11 Develop Help Desk Management Plan	5 days	Mon 8/30/21	Fri 9/3/21	No
1651	1651	4.35.2	4.35.3.11	5.25.16.12 QA Deliverable	2 days	Tue 9/7/21	Wed 9/8/21	No
1652	1652	4.38.2	4.35.3.11	5.25.16.13 Submit Help Desk Management Plan	0 days	Wed 9/8/21	Wed 9/8/21	No
1653	1653	4.38.1	4.35.3.11	5.25.16.14 Conduct Walk-through for Help Desk Management Plan	2 days	Thu 9/9/21	Fri 9/10/21	No
1654	1654	4.35.3	4.35.3.11	5.25.16.15 Review Help Desk Management Plan	10 days	Thu 9/9/21	Wed 9/22/21	No
1655	1655	4.35.3	4.35.3.11	5.25.16.16 Provide Feedback on Help Desk Management Plan	0 days	Wed 9/22/21	Wed 9/22/21	No
1656	1656	4.35.2	4.35.3.11	5.25.16.17 Incorporate Feedback on Help Desk Management Plan	5 days	Thu 9/23/21	Wed 9/29/21	No
1657	1657	4.38.2	4.35.3.11	5.25.16.18 Submit Final Version of Help Desk Management Plan	0 days	Wed 9/29/21	Wed 9/29/21	No
1658	1658	4.35.3	4.35.3.11	5.25.16.19 Review and Verify Help Desk Management Plan	3 days	Thu 9/30/21	Mon 10/4/21	No
1659	1659	4.35.1	4.35.3.11	5.25.16.20 Approve Help Desk Management Plan	0 days	Mon 10/4/21	Mon 10/4/21	No
1660	**1660**	**4.35**	**4.35.3.12**	**5.25.17 DELIVERABLE: Successful Execution of the Helpdesk Management Plan**	**46 days**	**Wed 12/1/21**	**Mon 2/7/22**	**No**
1661	1661	4.35.1	4.35.3.12	5.25.17.1 Develop Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	5 days	Wed 12/1/21	Tue 12/7/21	No
1662	1662	4.35.2	4.35.3.12	5.25.17.2 QA Deliverable Expectation Document	3 days	Wed 12/8/21	Fri 12/10/21	No
1663	1663	4.38.2	4.35.3.12	5.25.17.3 Submit Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	0 days	Fri 12/10/21	Fri 12/10/21	Yes
1664	1664	4.38.1	4.35.3.12	5.25.17.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	2 days	Mon 12/13/21	Tue 12/14/21	No
1665	1665	4.35.3	4.35.3.12	5.25.17.5 Review Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	5 days	Mon 12/13/21	Fri 12/17/21	No
1666	1666	4.35.3	4.35.3.12	5.25.17.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	0 days	Fri 12/17/21	Fri 12/17/21	Yes
1667	1667	4.35.2	4.35.3.12	5.25.17.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	3 days	Mon 12/20/21	Wed 12/22/21	No
1668	1668	4.38.2	4.35.3.12	5.25.17.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	0 days	Wed 12/22/21	Wed 12/22/21	Yes
1669	1669	4.35.3	4.35.3.12	5.25.17.9 Review and Verify Feedback	3 days	Thu 12/23/21	Tue 12/28/21	No
1670	1670	4.35.3	4.35.3.12	5.25.17.10 Approve Deliverable Expectation Document for Successful Execution of Helpdesk Management Plan	0 days	Tue 12/28/21	Tue 12/28/21	Yes
1671	1671	4.35.1	4.35.3.12	5.25.17.11 Develop Successful Execution of Helpdesk Management Plan	5 days	Wed 12/29/21	Wed 1/5/22	No
1672	1672	4.35.2	4.35.3.12	5.25.17.12 QA Deliverable	4 days	Thu 1/6/22	Tue 1/11/22	No
1673	1673	4.38.2	4.35.3.12	5.25.17.13 Submit Successful Execution of Helpdesk Management Plan	0 days	Tue 1/11/22	Tue 1/11/22	Yes
1674	1674	4.38.1	4.35.3.12	5.25.17.14 Conduct Walk-through for Successful Execution of Helpdesk Management Plan	2 days	Wed 1/12/22	Thu 1/13/22	No
1675	1675	4.35.3	4.35.3.12	5.25.17.15 Review Successful Execution of Helpdesk Management Plan	10 days	Wed 1/12/22	Wed 1/26/22	No
1676	1676	4.35.3	4.35.3.12	5.25.17.16 Provide Feedback on Successful Execution of Helpdesk Management Plan	0 days	Wed 1/26/22	Wed 1/26/22	Yes
1677	1677	4.35.2	4.35.3.12	5.25.17.17 Incorporate Feedback on Successful Execution of Helpdesk Management Plan	5 days	Thu 1/27/22	Wed 2/2/22	No
1678	1678	4.38.2	4.35.3.12	5.25.17.18 Submit Final Version of Successful Execution of Helpdesk Management Plan	0 days	Wed 2/2/22	Wed 2/2/22	Yes



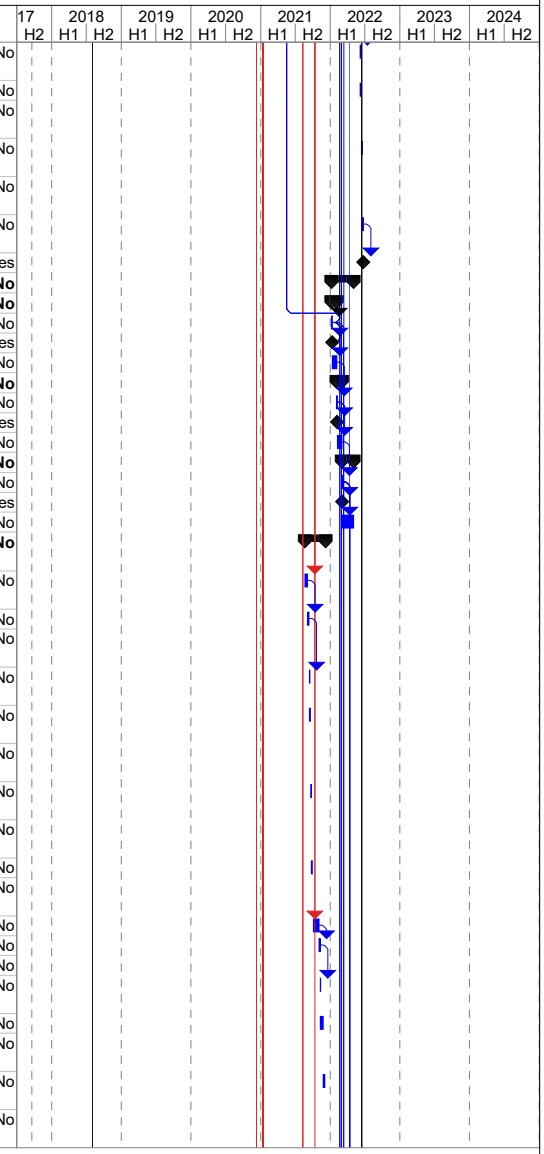
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1679	1679	4.35.3	4.35.3.12	5.25.17.19 Review and Verify Feedback on Successful Execution of Helpdesk Management Plan	3 days	Thu 2/3/22	Mon 2/7/22	No
1680	1680	4.35.3	4.35.3.12	5.25.17.20 Approve Successful Execution of Helpdesk Management Plan	0 days	Mon 2/7/22	Mon 2/7/22	Yes
1681	**1681**	**4.35**	**4.35.3.10**	**5.25.18 DELIVERABLE: Customer Support Procedures**	**42 days**	**Thu 8/5/21**	**Mon 10/4/21**	**No**
1682	1682	4.35.1	4.35.3.10	5.25.18.1 Develop Deliverable Expectation Document for Customer Support Procedures	5 days	Thu 8/5/21	Wed 8/11/21	No
1683	1683	4.35.2	4.35.3.10	5.25.18.2 QA Deliverable Expectation Document	1 day	Thu 8/12/21	Thu 8/12/21	No
1684	1684	4.38.2	4.35.3.10	5.25.18.3 Submit Deliverable Expectation Document for Customer Support Procedures	0 days	Thu 8/12/21	Thu 8/12/21	No
1685	1685	4.38.1	4.35.3.10	5.25.18.4 Conduct Walk-through for Deliverable Expectation Document for Customer Support Procedures	2 days	Fri 8/13/21	Mon 8/16/21	No
1686	1686	4.35.3	4.35.3.10	5.25.18.5 Review Deliverable Expectation Document for Customer Support Procedures	5 days	Fri 8/13/21	Thu 8/19/21	No
1687	1687	4.35.3	4.35.3.10	5.25.18.6 Provide Feedback on Deliverable Expectation Document for Customer Support Procedures	0 days	Thu 8/19/21	Thu 8/19/21	No
1688	1688	4.35.2	4.35.3.10	5.25.18.7 Incorporate Feedback on Deliverable Expectation Document for Customer Support Procedures	3 days	Fri 8/20/21	Tue 8/24/21	No
1689	1689	4.38.2	4.35.3.10	5.25.18.8 Submit Final Version of Deliverable Expectation Document for Customer Support Procedures	0 days	Tue 8/24/21	Tue 8/24/21	No
1690	1690	4.35.3	4.35.3.10	5.25.18.9 Review and Verify Feedback	3 days	Wed 8/25/21	Fri 8/27/21	No
1691	1691	4.35.3	4.35.3.10	5.25.18.10 Approve Deliverable Expectation Document for Customer Support Procedures	0 days	Fri 8/27/21	Fri 8/27/21	No
1692	1692	4.35.1	4.35.3.10	5.25.18.11 Develop Customer Support Procedures	5 days	Mon 8/30/21	Fri 9/3/21	No
1693	1693	4.35.2	4.35.3.10	5.25.18.12 QA Deliverable	2 days	Tue 9/7/21	Wed 9/8/21	No
1694	1694	4.38.2	4.35.3.10	5.25.18.13 Submit Customer Support Procedures	0 days	Wed 9/8/21	Wed 9/8/21	No
1695	1695	4.38.1	4.35.3.10	5.25.18.14 Conduct Walk-through for Customer Support Procedures	2 days	Thu 9/9/21	Fri 9/10/21	No
1696	1696	4.35.3	4.35.3.10	5.25.18.15 Review Customer Support Procedures	10 days	Thu 9/9/21	Wed 9/22/21	No
1697	1697	4.35.3	4.35.3.10	5.25.18.16 Provide Feedback on Customer Support Procedures	0 days	Wed 9/22/21	Wed 9/22/21	No
1698	1698	4.35.2	4.35.3.10	5.25.18.17 Incorporate Feedback on Customer Support Procedures	5 days	Thu 9/23/21	Wed 9/29/21	No
1699	1699	4.38.2	4.35.3.10	5.25.18.18 Submit Final Version of Customer Support Procedures	0 days	Wed 9/29/21	Wed 9/29/21	No
1700	1700	4.35.3	4.35.3.10	5.25.18.19 Review and Verify Customer Support Procedures	3 days	Thu 9/30/21	Mon 10/4/21	No
1701	1701	4.35.1	4.35.3.10	5.25.18.20 Approve Customer Support Procedures	0 days	Mon 10/4/21	Mon 10/4/21	No
1702	1702	4.25		5.25.19 Warranty Period	131 days	Mon 10/25/21	Thu 5/5/22	No
1703	1703	4.25		5.25.20 Warranty Period Complete	0 days	Thu 5/5/22	Thu 5/5/22	Yes
1704	**1704**	**4.33**	**4.33.3.1**	**5.25.21 DELIVERABLE: Initial Maintenance and System Operation**	**68 days**	**Fri 3/18/22**	**Wed 6/22/22**	**No**
1705	1705	4.33.1	4.33.3.1	5.25.21.1 Develop Deliverable Expectation Document for Initial Maintenance and System Operation	10 days	Fri 3/18/22	Thu 3/31/22	No
1706	1706	4.33.2	4.33.3.1	5.25.21.2 QA Deliverable Expectation Document	4 days	Fri 4/1/22	Wed 4/6/22	No
1707	1707	4.38.2	4.33.3.1	5.25.21.3 Submit Deliverable Expectation Document for Initial Maintenance and System Operation	0 days	Wed 4/6/22	Wed 4/6/22	No
1708	1708	4.38.1	4.33.3.1	5.25.21.4 Conduct Walk-through for Deliverable Expectation Document for Initial Maintenance and System Operation	2 days	Thu 4/7/22	Fri 4/8/22	No
1709	1709	4.33.3	4.33.3.1	5.25.21.5 Review Deliverable Expectation Document for Initial Maintenance and System Operation	5 days	Thu 4/7/22	Wed 4/13/22	No
1710	1710	4.33.3	4.33.3.1	5.25.21.6 Provide Feedback on Deliverable Expectation Document for Initial Maintenance and System Operation	0 days	Wed 4/13/22	Wed 4/13/22	No
1711	1711	4.33.2	4.33.3.1	5.25.21.7 Incorporate Feedback on Deliverable Expectation Document for Initial Maintenance and System Operation	3 days	Thu 4/14/22	Mon 4/18/22	No
1712	1712	4.38.2	4.33.3.1	5.25.21.8 Submit Final Version of Deliverable Expectation Document for Initial Maintenance and System Operation	0 days	Mon 4/18/22	Mon 4/18/22	No
1713	1713	4.33.3	4.33.3.1	5.25.21.9 Review and Verify Feedback	3 days	Tue 4/19/22	Thu 4/21/22	No
1714	1714	4.33.3	4.33.3.1	5.25.21.10 Approve Deliverable Expectation Document for Initial Maintenance and System Operation	0 days	Thu 4/21/22	Thu 4/21/22	No
1715	1715	4.33.1	4.33.3.1	5.25.21.11 Develop Initial Maintenance and System Operation Deliverable	15 days	Fri 5/6/22	Thu 5/26/22	No
1716	1716	4.33.2	4.33.3.1	5.25.21.12 QA Deliverable	5 days	Fri 5/27/22	Fri 6/3/22	No
1717	1717	4.38.2	4.33.3.1	5.25.21.13 Submit Initial Maintenance and System Operation Deliverable	0 days	Fri 6/3/22	Fri 6/3/22	No



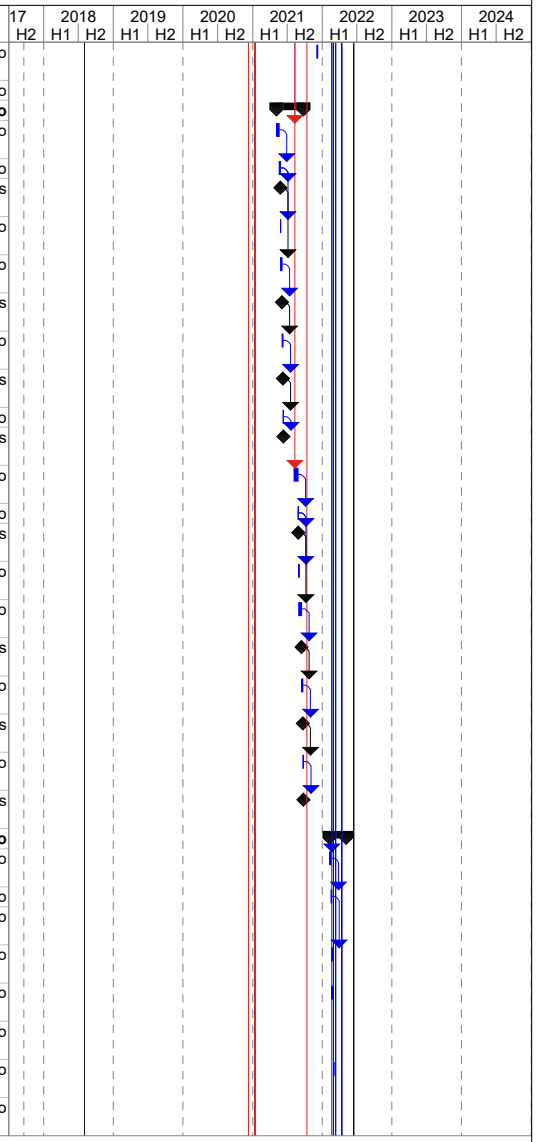
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1718	1718	4.38.1	4.33.3.1	5.25.21.14 Conduct Walk-through for Initial Maintenance and System Operation Deliverable	2 days	Mon 6/6/22	Tue 6/7/22	No
1719	1719	4.33.3	4.33.3.1	5.25.21.15 Review Initial Maintenance and System Operation Deliverable	5 days	Mon 6/6/22	Fri 6/10/22	No
1720	1720	4.33.3	4.33.3.1	5.25.21.16 Provide Feedback on Initial Maintenance and System Operation Deliverable	0 days	Fri 6/10/22	Fri 6/10/22	No
1721	1721	4.33.2	4.33.3.1	5.25.21.17 Incorporate Feedback on Initial Maintenance and System Operation Deliverable	5 days	Mon 6/13/22	Fri 6/17/22	No
1722	1722	4.38.2	4.33.3.1	5.25.21.18 Submit Final Version of Initial Maintenance and System Operation Deliverable	0 days	Fri 6/17/22	Fri 6/17/22	No
1723	1723	4.33.3	4.33.3.1	5.25.21.19 Review and Verify Initial Maintenance and System Operation Deliverable	3 days	Mon 6/20/22	Wed 6/22/22	No
1724	1724	4.33.1	4.33.3.1	5.25.21.20 Approve Initial Maintenance and System Operation Deliverable	0 days	Wed 6/22/22	Wed 6/22/22	Yes
1725	**1725**	**4.32**		**5.25.22 Rollouts**	**80 days**	**Fri 1/7/22**	**Mon 5/2/22**	**No**
1726	**1726**	**4.32**		**5.25.22.1 Rollout 1**	**18 days**	**Fri 1/7/22**	**Wed 2/2/22**	**No**
1727	1727	4.32		5.25.22.1.1 Rollout 1 Activities	2 days	Fri 1/7/22	Mon 1/10/22	No
1728	1728	4.32		5.25.22.1.2 Rollout 1 System Available	0 days	Mon 1/10/22	Mon 1/10/22	Yes
1729	1729	4.32		5.25.22.1.3 Stabilize Rollout 1	16 days	Tue 1/11/22	Wed 2/2/22	No
1730	**1730**	**4.32**		**5.25.22.2 Rollout 2**	**18 days**	**Thu 2/3/22**	**Tue 3/1/22**	**No**
1731	1731	4.32		5.25.22.2.1 Rollout 2 Activities	2 days	Thu 2/3/22	Fri 2/4/22	No
1732	1732	4.32		5.25.22.2.2 Rollout 2 System Available	0 days	Fri 2/4/22	Fri 2/4/22	Yes
1733	1733	4.32		5.25.22.2.3 Stabilize Rollout 2	16 days	Mon 2/7/22	Tue 3/1/22	No
1734	**1734**	**4.32**		**5.25.22.3 Rollout 3**	**44 days**	**Wed 3/2/22**	**Mon 5/2/22**	**No**
1735	1735	4.32		5.25.22.3.1 Rollout 3 Activities	2 days	Wed 3/2/22	Thu 3/3/22	No
1736	1736	4.32		5.25.22.3.2 Rollout 3 System Available	0 days	Thu 3/3/22	Thu 3/3/22	Yes
1737	1737	4.32		5.25.22.3.3 Stabilize Rollout 3	42 days	Fri 3/4/22	Mon 5/2/22	No
1738	**1738**	**4.32**	**4.32.3.2**	**5.25.23 DELIVERABLE: Implementation and Initialization Plan and Report**	**72 days**	**Fri 8/20/21**	**Mon 12/6/21**	**No**
1739	1739	4.32.1	4.32.3.2	5.25.23.1 Develop Deliverable Expectation Document for Implementation and Initialization Plan and Report	10 days	Fri 8/20/21	Thu 9/2/21	No
1740	1740	4.32.2	4.32.3.2	5.25.23.2 QA Deliverable Expectation Document	5 days	Fri 9/3/21	Fri 9/10/21	No
1741	1741	4.38.2	4.32.3.2	5.25.23.3 Submit Deliverable Expectation Document for Implementation and Initialization Plan and Report	0 days	Fri 9/10/21	Fri 9/10/21	No
1742	1742	4.38.1	4.32.3.2	5.25.23.4 Conduct Walk-through for Deliverable Expectation Document for Implementation and Initialization Plan and Report	2 days	Mon 9/13/21	Tue 9/14/21	No
1743	1743	4.32.3	4.32.3.2	5.25.23.5 Review Deliverable Expectation Document for Implementation and Initialization Plan and Report	5 days	Mon 9/13/21	Fri 9/17/21	No
1744	1744	4.32.3	4.32.3.2	5.25.23.6 Provide Feedback on Deliverable Expectation Document for Implementation and Initialization Plan and Report	0 days	Fri 9/17/21	Fri 9/17/21	No
1745	1745	4.32.2	4.32.3.2	5.25.23.7 Incorporate Feedback on Deliverable Expectation Document for Implementation and Initialization Plan and Report	3 days	Mon 9/20/21	Wed 9/22/21	No
1746	1746	4.38.2	4.32.3.2	5.25.23.8 Submit Final Version of Deliverable Expectation Document for Implementation and Initialization Plan and Report	0 days	Wed 9/22/21	Wed 9/22/21	No
1747	1747	4.32.3	4.32.3.2	5.25.23.9 Review and Verify Feedback	3 days	Thu 9/23/21	Mon 9/27/21	No
1748	1748	4.32.3	4.32.3.2	5.25.23.10 Approve Deliverable Expectation Document for Implementation and Initialization Plan and Report	0 days	Mon 9/27/21	Mon 9/27/21	No
1749	1749	4.32.1	4.32.3.2	5.25.23.11 Develop Implementation and Initialization Plan and Report	20 days	Mon 10/4/21	Mon 11/1/21	No
1750	1750	4.32.2	4.32.3.2	5.25.23.12 QA Deliverable	5 days	Tue 11/2/21	Mon 11/8/21	No
1751	1751	4.38.2	4.32.3.2	5.25.23.13 Submit Implementation and Initialization Plan and Report	0 days	Mon 11/8/21	Mon 11/8/21	No
1752	1752	4.38.1	4.32.3.2	5.25.23.14 Conduct Walk-through for Implementation and Initialization Plan and Report	2 days	Tue 11/9/21	Wed 11/10/21	No
1753	1753	4.32.3	4.32.3.2	5.25.23.15 Review Implementation and Initialization Plan and Report	10 days	Tue 11/9/21	Tue 11/23/21	No
1754	1754	4.32.3	4.32.3.2	5.25.23.16 Provide Feedback on Implementation and Initialization Plan and Report	0 days	Tue 11/23/21	Tue 11/23/21	No
1755	1755	4.32.2	4.32.3.2	5.25.23.17 Incorporate Feedback on Implementation and Initialization Plan and Report	4 days	Wed 11/24/21	Wed 12/1/21	No
1756	1756	4.38.2	4.32.3.2	5.25.23.18 Submit Final Version of Implementation and Initialization Plan and Report	0 days	Wed 12/1/21	Wed 12/1/21	No



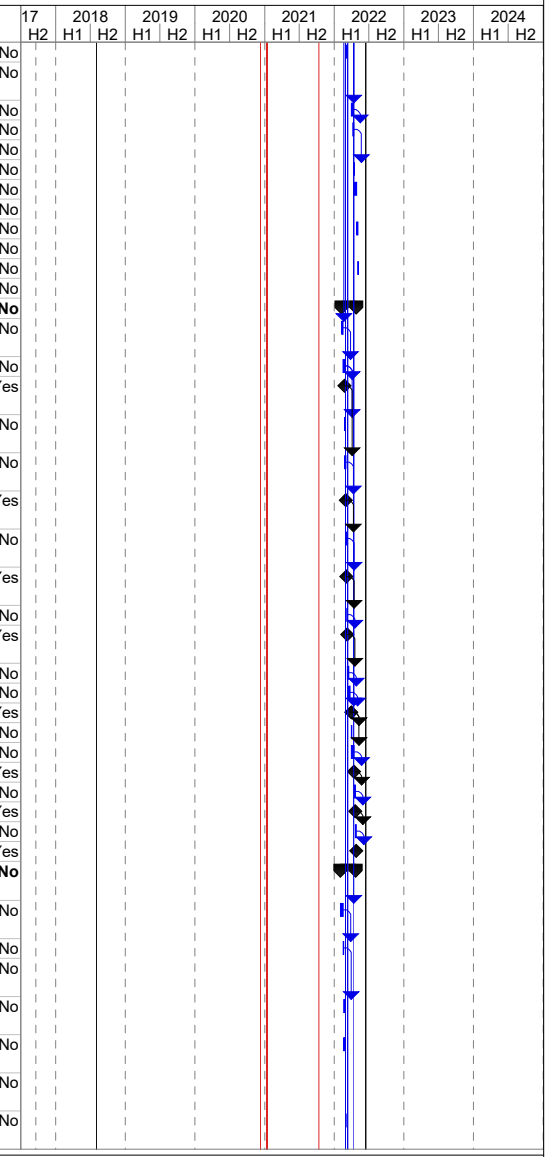
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1757	1757	4.32.3	4.32.3.2	5.25.23.19 Review and Verify Implementation and Initialization Plan and Report	3 days	Thu 12/2/21	Mon 12/6/21	No
1758	1758	4.32.1	4.32.3.2	5.25.23.20 Approve Implementation and Initialization Plan and Report	0 days	Mon 12/6/21	Mon 12/6/21	No
1759	**1759**	**4.31**	**4.31.3.1**	**5.25.24 DELIVERABLE: Training Management and Development**	**100 days**	**Wed 5/5/21**	**Thu 9/23/21**	**No**
1760	1760	4.31.1	4.31.3.1	5.25.24.1 Develop Deliverable Expectation Document for System Training Management and Development Deliverable	10 days	Wed 5/5/21	Tue 5/18/21	No
1761	1761	4.31.2	4.31.3.1	5.25.24.2 QA Deliverable Expectation Document	5 days	Wed 5/19/21	Tue 5/25/21	No
1762	1762	4.38.2	4.31.3.1	5.25.24.3 Submit Deliverable Expectation Document for System Training Management and Development Deliverable	0 days	Tue 5/25/21	Tue 5/25/21	Yes
1763	1763	4.38.1	4.31.3.1	5.25.24.4 Conduct Walk-through for Deliverable Expectation Document for System Training Management and Development Deliverable	2 days	Wed 5/26/21	Thu 5/27/21	No
1764	1764	4.31.3	4.31.3.1	5.25.24.5 Review Deliverable Expectation Document for System Training Management and Development Deliverable	5 days	Wed 5/26/21	Wed 6/2/21	No
1765	1765	4.31.3	4.31.3.1	5.25.24.6 Provide Feedback on Deliverable Expectation Document for System Training Management and Development Deliverable	0 days	Wed 6/2/21	Wed 6/2/21	Yes
1766	1766	4.31.2	4.31.3.1	5.25.24.7 Incorporate Feedback on Deliverable Expectation Document for System Training Management and Development Deliverable	3 days	Thu 6/3/21	Mon 6/7/21	No
1767	1767	4.38.2	4.31.3.1	5.25.24.8 Submit Final Version of Deliverable Expectation Document for System Training Management and Development Deliverable	0 days	Mon 6/7/21	Mon 6/7/21	Yes
1768	1768	4.31.3	4.31.3.1	5.25.24.9 Review and Verify Feedback	3 days	Tue 6/8/21	Thu 6/10/21	No
1769	1769	4.31.3	4.31.3.1	5.25.24.10 Approve Deliverable Expectation Document for System Training Management and Development Deliverable	0 days	Thu 6/10/21	Thu 6/10/21	Yes
1770	1770	4.31.1	4.31.3.1	5.25.24.11 Develop System Training Management and Development Deliverable	15 days	Thu 8/5/21	Wed 8/25/21	No
1771	1771	4.31.2	4.31.3.1	5.25.24.12 QA Deliverable	2 days	Thu 8/26/21	Fri 8/27/21	No
1772	1772	4.38.2	4.31.3.1	5.25.24.13 Submit System Training Management and Development Deliverable	0 days	Fri 8/27/21	Fri 8/27/21	Yes
1773	1773	4.38.1	4.31.3.1	5.25.24.14 Conduct Walk-through for System Training Management and Development Deliverable	2 days	Mon 8/30/21	Tue 8/31/21	No
1774	1774	4.31.3	4.31.3.1	5.25.24.15 Review System Training Management and Development Deliverable	10 days	Mon 8/30/21	Mon 9/13/21	No
1775	1775	4.31.3	4.31.3.1	5.25.24.16 Provide Feedback on System Training Management and Development Deliverable	0 days	Mon 9/13/21	Mon 9/13/21	Yes
1776	1776	4.31.2	4.31.3.1	5.25.24.17 Incorporate Feedback on System Training Management and Development Deliverable	5 days	Tue 9/14/21	Mon 9/20/21	No
1777	1777	4.38.2	4.31.3.1	5.25.24.18 Submit Final Version of System Training Management and Development Deliverable	0 days	Mon 9/20/21	Mon 9/20/21	Yes
1778	1778	4.31.3	4.31.3.1	5.25.24.19 Review and Verify System Training Management and Development Deliverable	3 days	Tue 9/21/21	Thu 9/23/21	No
1779	1779	4.31.1	4.31.3.1	5.25.24.20 Approve System Training Management and Development Deliverable	0 days	Thu 9/23/21	Thu 9/23/21	Yes
1780	**1780**	**4.32**	**4.32.3.3**	**5.25.25 DELIVERABLE: Implementation Rollout Reports**	**62 days**	**Tue 2/8/22**	**Thu 5/5/22**	**No**
1781	1781	4.32.1	4.32.3.3	5.25.25.1 Develop Deliverable Expectation Document for Implementation Rollout Reports	5 days	Tue 2/8/22	Mon 2/14/22	No
1782	1782	4.32.2	4.32.3.3	5.25.25.2 QA Deliverable Expectation Document	3 days	Tue 2/15/22	Thu 2/17/22	No
1783	1783	4.38.2	4.32.3.3	5.25.25.3 Submit Deliverable Expectation Document for Implementation Rollout Reports	0 days	Thu 2/17/22	Thu 2/17/22	No
1784	1784	4.38.1	4.32.3.3	5.25.25.4 Conduct Walk-through for Deliverable Expectation Document for Implementation Rollout Reports	2 days	Fri 2/18/22	Tue 2/22/22	No
1785	1785	4.32.3	4.32.3.3	5.25.25.5 Review Deliverable Expectation Document for Implementation Rollout Reports	5 days	Fri 2/18/22	Fri 2/25/22	No
1786	1786	4.32.3	4.32.3.3	5.25.25.6 Provide Feedback on Deliverable Expectation Document for Implementation Rollout Reports	0 days	Fri 2/25/22	Fri 2/25/22	No
1787	1787	4.32.2	4.32.3.3	5.25.25.7 Incorporate Feedback on Deliverable Expectation Document for Implementation Rollout Reports	3 days	Mon 2/28/22	Wed 3/2/22	No
1788	1788	4.38.2	4.32.3.3	5.25.25.8 Submit Final Version of Deliverable Expectation Document for Implementation Rollout Reports	0 days	Wed 3/2/22	Wed 3/2/22	No



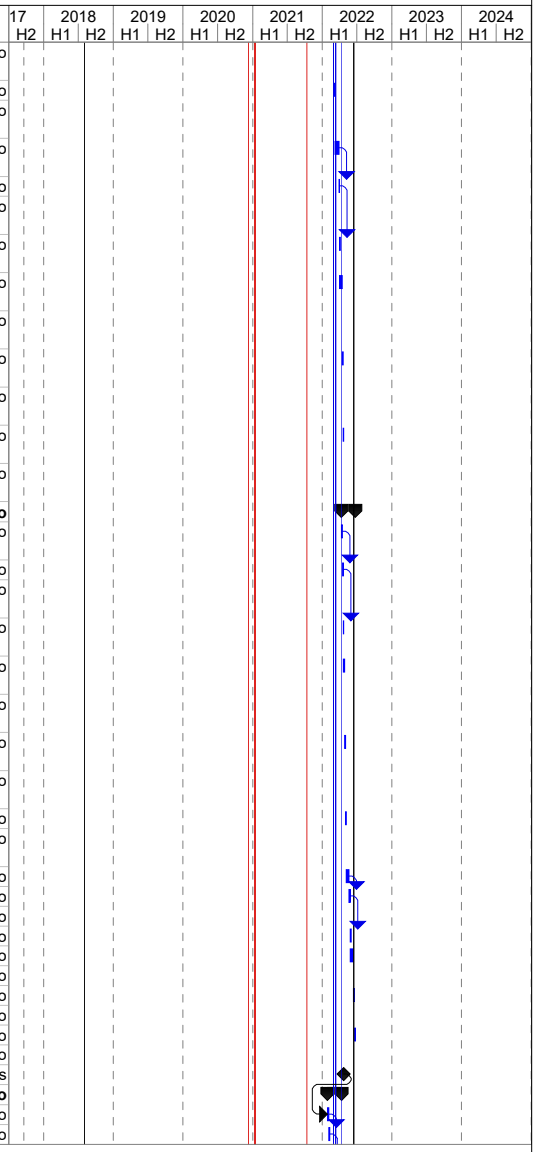
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1789	1789	4.32.3	4.32.3.3	5.25.25.9 Review and Verify Feedback	3 days	Thu 3/3/22	Mon 3/7/22	No
1790	1790	4.32.3	4.32.3.3	5.25.25.10 Approve Deliverable Expectation Document for Implementation Rollout Reports	0 days	Mon 3/7/22	Mon 3/7/22	No
1791	1791	4.32.1	4.32.3.3	5.25.25.11 Develop Implementation Rollout Reports	5 days	Thu 3/31/22	Wed 4/6/22	No
1792	1792	4.32.2	4.32.3.3	5.25.25.12 QA Deliverable	4 days	Thu 4/7/22	Tue 4/12/22	No
1793	1793	4.38.2	4.32.3.3	5.25.25.13 Submit Implementation Rollout Reports	0 days	Tue 4/12/22	Tue 4/12/22	No
1794	1794	4.38.1	4.32.3.3	5.25.25.14 Conduct Walk-through for Implementation Rollout Reports	2 days	Wed 4/13/22	Thu 4/14/22	No
1795	1795	4.32.3	4.32.3.3	5.25.25.15 Review Implementation Rollout Reports	10 days	Wed 4/13/22	Tue 4/26/22	No
1796	1796	4.32.3	4.32.3.3	5.25.25.16 Provide Feedback on Implementation Rollout Reports	0 days	Tue 4/26/22	Tue 4/26/22	No
1797	1797	4.32.2	4.32.3.3	5.25.25.17 Incorporate Feedback on Implementation Rollout Reports	5 days	Wed 4/27/22	Tue 5/3/22	No
1798	1798	4.38.2	4.32.3.3	5.25.25.18 Submit Final Version of Implementation Rollout Reports	0 days	Tue 5/3/22	Tue 5/3/22	No
1799	1799	4.32.3	4.32.3.3	5.25.25.19 Review and Verify Implementation Rollout Reports	2 days	Wed 5/4/22	Thu 5/5/22	No
1800	1800	4.32.1	4.32.3.3	5.25.25.20 Approve Implementation Rollout Reports	0 days	Thu 5/5/22	Thu 5/5/22	No
1801	**1801**	**4.32**	**4.32.3.1**	**5.25.26 DELIVERABLE: System Implementation and Support**	**54 days**	**Tue 2/8/22**	**Mon 4/25/22**	**No**
1802	1802	4.32.1	4.32.3.1	5.25.26.1 Develop Deliverable Expectation Document for System Training Reports	5 days	Tue 2/8/22	Mon 2/14/22	No
1803	1803	4.32.2	4.32.3.1	5.25.26.2 QA Deliverable Expectation Document	5 days	Tue 2/15/22	Tue 2/22/22	No
1804	1804	4.38.2	4.32.3.1	5.25.26.3 Submit Deliverable Expectation Document for System Training Reports	0 days	Tue 2/22/22	Tue 2/22/22	Yes
1805	1805	4.38.1	4.32.3.1	5.25.26.4 Conduct Walk-through for Deliverable Expectation Document for System Training Reports	2 days	Wed 2/23/22	Thu 2/24/22	No
1806	1806	4.32.3	4.32.3.1	5.25.26.5 Review Deliverable Expectation Document for System Training Reports	5 days	Wed 2/23/22	Tue 3/1/22	No
1807	1807	4.32.3	4.32.3.1	5.25.26.6 Provide Feedback on Deliverable Expectation Document for System Training Reports	0 days	Tue 3/1/22	Tue 3/1/22	Yes
1808	1808	4.32.2	4.32.3.1	5.25.26.7 Incorporate Feedback on Deliverable Expectation Document for System Training Reports	3 days	Wed 3/2/22	Fri 3/4/22	No
1809	1809	4.38.2	4.32.3.1	5.25.26.8 Submit Final Version of Deliverable Expectation Document for System Training Reports	0 days	Fri 3/4/22	Fri 3/4/22	Yes
1810	1810	4.32.3	4.32.3.1	5.25.26.9 Review and Verify Feedback	3 days	Mon 3/7/22	Wed 3/9/22	No
1811	1811	4.32.3	4.32.3.1	5.25.26.10 Approve Deliverable Expectation Document for System Training Reports	0 days	Wed 3/9/22	Wed 3/9/22	Yes
1812	1812	4.32.1	4.32.3.1	5.25.26.11 Develop System Training Reports	5 days	Thu 3/10/22	Wed 3/16/22	No
1813	1813	4.32.2	4.32.3.1	5.25.26.12 QA Deliverable	5 days	Thu 3/17/22	Wed 3/23/22	No
1814	1814	4.38.2	4.32.3.1	5.25.26.13 Submit System Training Reports	0 days	Wed 3/30/22	Wed 3/30/22	Yes
1815	1815	4.38.1	4.32.3.1	5.25.26.14 Conduct Walk-through for System Training Reports	2 days	Thu 3/31/22	Fri 4/1/22	No
1816	1816	4.32.3	4.32.3.1	5.25.26.15 Review System Training Reports	10 days	Thu 3/31/22	Wed 4/13/22	No
1817	1817	4.32.3	4.32.3.1	5.25.26.16 Provide Feedback on System Training Reports	0 days	Wed 4/13/22	Wed 4/13/22	Yes
1818	1818	4.32.2	4.32.3.1	5.25.26.17 Incorporate Feedback on System Training Reports	5 days	Thu 4/14/22	Wed 4/20/22	No
1819	1819	4.38.2	4.32.3.1	5.25.26.18 Submit Final Version of System Training Reports	0 days	Wed 4/20/22	Wed 4/20/22	Yes
1820	1820	4.32.3	4.32.3.1	5.25.26.19 Review and Verify System Training Reports	3 days	Thu 4/21/22	Mon 4/25/22	No
1821	1821	4.32.1	4.32.3.1	5.25.26.20 Approve System Training Reports	0 days	Mon 4/25/22	Mon 4/25/22	Yes
1822	**1822**	**4.32**	**4.32.3.4**	**5.25.27 DELIVERABLE: Fully Implemented, Functional and Operational Statewide System**	**57 days**	**Wed 2/2/22**	**Fri 4/22/22**	**No**
1823	1823	4.32.1	4.32.3.4	5.25.27.1 Develop Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	10 days	Wed 2/2/22	Tue 2/15/22	No
1824	1824	4.32.2	4.32.3.4	5.25.27.2 QA Deliverable Expectation Document	2 days	Wed 2/16/22	Thu 2/17/22	No
1825	1825	4.38.2	4.32.3.4	5.25.27.3 Submit Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	0 days	Thu 2/17/22	Thu 2/17/22	No
1826	1826	4.38.1	4.32.3.4	5.25.27.4 Conduct Walk-through for Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	2 days	Fri 2/18/22	Tue 2/22/22	No
1827	1827	4.32.3	4.32.3.4	5.25.27.5 Review Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	5 days	Fri 2/18/22	Fri 2/25/22	No
1828	1828	4.32.3	4.32.3.4	5.25.27.6 Provide Feedback on Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	0 days	Fri 2/25/22	Fri 2/25/22	No
1829	1829	4.32.2	4.32.3.4	5.25.27.7 Incorporate Feedback on Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	3 days	Mon 2/28/22	Wed 3/2/22	No



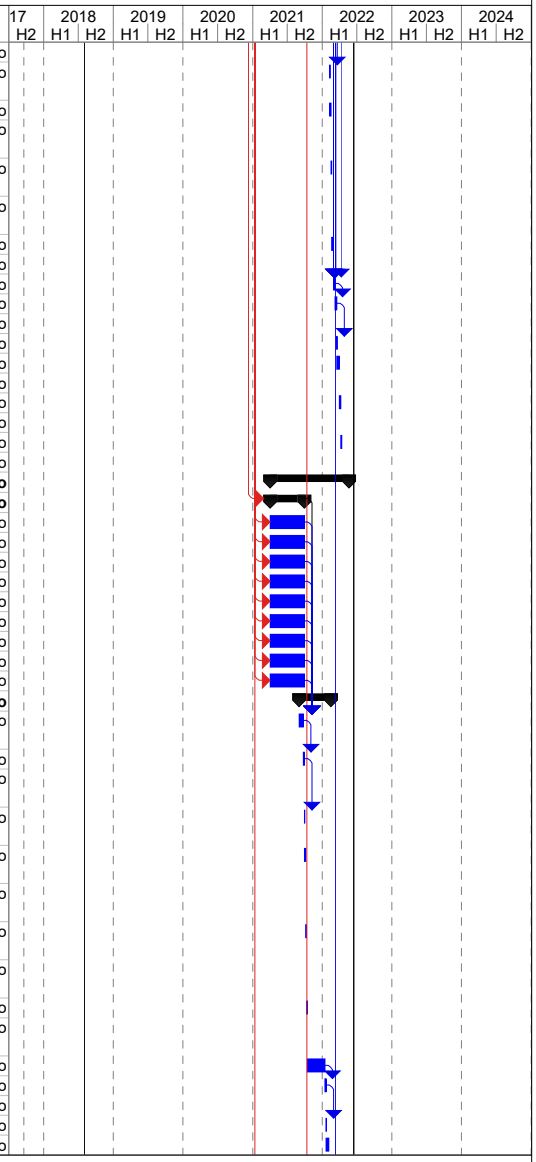
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1830	1830	4.38.2	4.32.3.4	5.25.27.8 Submit Final Version of Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	0 days	Wed 3/2/22	Wed 3/2/22	No
1831	1831	4.32.3	4.32.3.4	5.25.27.9 Review and Verify Feedback	3 days	Thu 3/3/22	Mon 3/7/22	No
1832	1832	4.32.3	4.32.3.4	5.25.27.10 Approve Deliverable Expectation Document for Fully Implemented, Functional and Operational Statewide System	0 days	Mon 3/7/22	Mon 3/7/22	No
1833	1833	4.32.1	4.32.3.4	5.25.27.11 Develop Fully Implemented, Functional and Operational Statewide System	15 days	Tue 3/8/22	Mon 3/28/22	No
1834	1834	4.32.2	4.32.3.4	5.25.27.12 QA Deliverable	3 days	Tue 3/29/22	Thu 3/31/22	No
1835	1835	4.38.2	4.32.3.4	5.25.27.13 Submit Fully Implemented, Functional and Operational Statewide System	0 days	Thu 3/31/22	Thu 3/31/22	No
1836	1836	4.38.1	4.32.3.4	5.25.27.14 Conduct Walk-through for Fully Implemented, Functional and Operational Statewide System	2 days	Fri 4/1/22	Mon 4/4/22	No
1837	1837	4.32.3	4.32.3.4	5.25.27.15 Review Fully Implemented, Functional and Operational Statewide System	10 days	Fri 4/1/22	Thu 4/14/22	No
1838	1838	4.32.3	4.32.3.4	5.25.27.16 Provide Feedback on Fully Implemented, Functional and Operational Statewide System	0 days	Thu 4/14/22	Thu 4/14/22	No
1839	1839	4.32.2	4.32.3.4	5.25.27.17 Incorporate Feedback on Fully Implemented, Functional and Operational Statewide System	3 days	Fri 4/15/22	Tue 4/19/22	No
1840	1840	4.38.2	4.32.3.4	5.25.27.18 Submit Final Version of Fully Implemented, Functional and Operational Statewide System	0 days	Tue 4/19/22	Tue 4/19/22	No
1841	1841	4.32.3	4.32.3.4	5.25.27.19 Review and Verify Fully Implemented, Functional and Operational Statewide System	3 days	Wed 4/20/22	Fri 4/22/22	No
1842	1842	4.32.1	4.32.3.4	5.25.27.20 Approve Fully Implemented, Functional and Operational Statewide System	0 days	Fri 4/22/22	Fri 4/22/22	No
1843	**1843**	**4.35**	**4.35.3.7**	**5.25.28 DELIVERABLE: Operations Transition Plan**	**52 days**	**Mon 4/11/22**	**Wed 6/22/22**	**No**
1844	1844	4.35.1	4.35.3.7	5.25.28.1 Develop Deliverable Expectation Document for Operations Transition Plan	5 days	Mon 4/11/22	Fri 4/15/22	No
1845	1845	4.35.2	4.35.3.7	5.25.28.2 QA Deliverable Expectation Document	3 days	Mon 4/18/22	Wed 4/20/22	No
1846	1846	4.38.2	4.35.3.7	5.25.28.3 Submit Deliverable Expectation Document for Operations Transition Plan	0 days	Wed 4/20/22	Wed 4/20/22	No
1847	1847	4.38.1	4.35.3.7	5.25.28.4 Conduct Walk-through for Deliverable Expectation Document for Operations Transition Plan	2 days	Thu 4/21/22	Fri 4/22/22	No
1848	1848	4.35.3	4.35.3.7	5.25.28.5 Review Deliverable Expectation Document for Operations Transition Plan	5 days	Thu 4/21/22	Wed 4/27/22	No
1849	1849	4.35.3	4.35.3.7	5.25.28.6 Provide Feedback on Deliverable Expectation Document for Operations Transition Plan	0 days	Wed 4/27/22	Wed 4/27/22	No
1850	1850	4.35.2	4.35.3.7	5.25.28.7 Incorporate Feedback on Deliverable Expectation Document for Operations Transition Plan	3 days	Thu 4/28/22	Mon 5/2/22	No
1851	1851	4.38.2	4.35.3.7	5.25.28.8 Submit Final Version of Deliverable Expectation Document for Operations Transition Plan	0 days	Mon 5/2/22	Mon 5/2/22	No
1852	1852	4.35.3	4.35.3.7	5.25.28.9 Review and Verify Feedback	3 days	Tue 5/3/22	Thu 5/5/22	No
1853	1853	4.35.3	4.35.3.7	5.25.28.10 Approve Deliverable Expectation Document for Operations Transition Plan	0 days	Thu 5/5/22	Thu 5/5/22	No
1854	1854	4.35.1	4.35.3.7	5.25.28.11 Develop Operations Transition Plan	10 days	Fri 5/6/22	Thu 5/19/22	No
1855	1855	4.35.2	4.35.3.7	5.25.28.12 QA Deliverable	5 days	Fri 5/20/22	Thu 5/26/22	No
1856	1856	4.38.2	4.35.3.7	5.25.28.13 Submit Operations Transition Plan	0 days	Thu 5/26/22	Thu 5/26/22	No
1857	1857	4.38.1	4.35.3.7	5.25.28.14 Conduct Walk-through for Operations Transition Plan	2 days	Fri 5/27/22	Tue 5/31/22	No
1858	1858	4.35.3	4.35.3.7	5.25.28.15 Review Operations Transition Plan	10 days	Fri 5/27/22	Fri 6/10/22	No
1859	1859	4.35.3	4.35.3.7	5.25.28.16 Provide Feedback on Operations Transition Plan	0 days	Fri 6/10/22	Fri 6/10/22	No
1860	1860	4.35.2	4.35.3.7	5.25.28.17 Incorporate Feedback on Operations Transition Plan	5 days	Mon 6/13/22	Fri 6/17/22	No
1861	1861	4.38.2	4.35.3.7	5.25.28.18 Submit Final Version of Operations Transition Plan	0 days	Fri 6/17/22	Fri 6/17/22	No
1862	1862	4.35.3	4.35.3.7	5.25.28.19 Review and Verify Operations Transition Plan	3 days	Mon 6/20/22	Wed 6/22/22	No
1863	1863	4.35.1	4.35.3.7	5.25.28.20 Approve Operations Transition Plan	0 days	Wed 6/22/22	Wed 6/22/22	No
1864	1864	4.32		5.25.29 System Fully Implemented	0 days	Fri 4/22/22	Fri 4/22/22	Yes
1865	**1865**	**4.31**	**4.31.3.4**	**5.25.30 DELIVERABLE: Conduct Training**	**51 days**	**Fri 1/28/22**	**Mon 4/11/22**	**No**
1866	1866	4.31.1	4.31.3.4	5.25.30.1 Develop Deliverable Expectation Document for Conduct Training	5 days	Fri 1/28/22	Thu 2/3/22	No
1867	1867	4.31.2	4.31.3.4	5.25.30.2 QA Deliverable Expectation Document	2 days	Fri 2/4/22	Mon 2/7/22	No



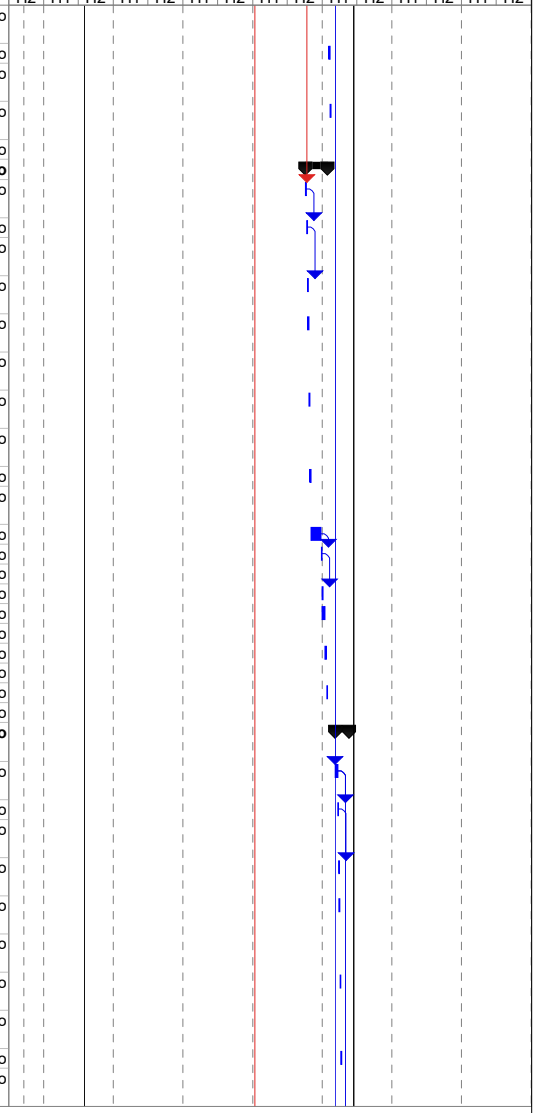
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1868	1868	4.38.2	4.31.3.4	5.25.30.3 Submit Deliverable Expectation Document for Conduct Training	0 days	Mon 2/7/22	Mon 2/7/22	No
1869	1869	4.38.1	4.31.3.4	5.25.30.4 Conduct Walk-through for Deliverable Expectation Document for Conduct Training	2 days	Tue 2/8/22	Wed 2/9/22	No
1870	1870	4.31.3	4.31.3.4	5.25.30.5 Review Deliverable Expectation Document for Conduct Training	5 days	Tue 2/8/22	Mon 2/14/22	No
1871	1871	4.31.3	4.31.3.4	5.25.30.6 Provide Feedback on Deliverable Expectation Document for Conduct Training	0 days	Mon 2/14/22	Mon 2/14/22	No
1872	1872	4.31.2	4.31.3.4	5.25.30.7 Incorporate Feedback on Deliverable Expectation Document for Conduct Training	3 days	Tue 2/15/22	Thu 2/17/22	No
1873	1873	4.38.2	4.31.3.4	5.25.30.8 Submit Final Version of Deliverable Expectation Document for Conduct Training	0 days	Thu 2/17/22	Thu 2/17/22	No
1874	1874	4.31.3	4.31.3.4	5.25.30.9 Review and Verify Feedback	3 days	Fri 2/18/22	Wed 2/23/22	No
1875	1875	4.31.3	4.31.3.4	5.25.30.10 Approve Deliverable Expectation Document for Conduct Training	0 days	Wed 2/23/22	Wed 2/23/22	No
1876	1876	4.31.1	4.31.3.4	5.25.30.11 Develop Conduct Training Deliverable	5 days	Tue 3/1/22	Mon 3/7/22	No
1877	1877	4.31.2	4.31.3.4	5.25.30.12 QA Deliverable	7 days	Tue 3/8/22	Wed 3/16/22	No
1878	1878	4.38.2	4.31.3.4	5.25.30.13 Submit Conduct Training	0 days	Wed 3/16/22	Wed 3/16/22	No
1879	1879	4.38.1	4.31.3.4	5.25.30.14 Conduct Walk-through for Conduct Training	2 days	Thu 3/17/22	Fri 3/18/22	No
1880	1880	4.31.3	4.31.3.4	5.25.30.15 Review Conduct Training	10 days	Thu 3/17/22	Wed 3/30/22	No
1881	1881	4.31.3	4.31.3.4	5.25.30.16 Provide Feedback on Conduct Training	0 days	Wed 3/30/22	Wed 3/30/22	No
1882	1882	4.31.2	4.31.3.4	5.25.30.17 Incorporate Feedback on Conduct Training	5 days	Thu 3/31/22	Wed 4/6/22	No
1883	1883	4.38.2	4.31.3.4	5.25.30.18 Submit Final Version of Conduct Training	0 days	Wed 4/6/22	Wed 4/6/22	No
1884	1884	4.31.3	4.31.3.4	5.25.30.19 Review and Verify Conduct Training	3 days	Thu 4/7/22	Mon 4/11/22	No
1885	1885	4.31.1	4.31.3.4	5.25.30.20 Approve Conduct Training	0 days	Mon 4/11/22	Mon 4/11/22	No
1886	**1886**	**4.34**		**5.25.31 Federal Certification**	**285 days**	**Fri 4/2/21**	**Fri 5/20/22**	**No**
1887	**1887**	**4.34**		**5.25.31.1 Begin Gathering Federal Certification Documentation**	**125 days**	**Fri 4/2/21**	**Tue 9/28/21**	**No**
1888	1888	4.34		5.25.31.1.1 Case Initiation Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1889	1889	4.34		5.25.31.1.2 Locate Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1890	1890	4.34		5.25.31.1.3 Establishment Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1891	1891	4.34		5.25.31.1.4 Case Management Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1892	1892	4.34		5.25.31.1.5 Enforcement Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1893	1893	4.34		5.25.31.1.6 Financial Management Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1894	1894	4.34		5.25.31.1.7 Reporting Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1895	1895	4.34		5.25.31.1.8 Customer Service Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1896	1896	4.34		5.25.31.1.9 Ease of Use Federal Certification Documentation	125 days	Fri 4/2/21	Tue 9/28/21	No
1897	**1897**	**4.34**	**4.34.3.2**	**5.25.31.2 DELIVERABLE: Federal Certification Compliance Narrative**	**111 days**	**Wed 9/1/21**	**Mon 2/14/22**	**No**
1898	1898	4.34.1	4.34.3.2	5.25.31.2.1 Develop Deliverable Expectation Document for Federal Certification Compliance Narrative	15 days	Wed 9/1/21	Wed 9/22/21	No
1899	1899	4.34.2	4.34.3.2	5.25.31.2.2 QA Deliverable Expectation Document	4 days	Thu 9/23/21	Tue 9/28/21	No
1900	1900	4.38.2	4.34.3.2	5.25.31.2.3 Submit Deliverable Expectation Document for Federal Certification Compliance Narrative	0 days	Tue 9/28/21	Tue 9/28/21	No
1901	1901	4.38.1	4.34.3.2	5.25.31.2.4 Conduct Walk-through for Deliverable Expectation Document for Federal Certification Compliance Narrative	2 days	Wed 9/29/21	Thu 9/30/21	No
1902	1902	4.34.3	4.34.3.2	5.25.31.2.5 Review Deliverable Expectation Document for Federal Certification Compliance Narrative	5 days	Wed 9/29/21	Tue 10/5/21	No
1903	1903	4.34.3	4.34.3.2	5.25.31.2.6 Provide Feedback on Deliverable Expectation Document for Federal Certification Compliance Narrative	0 days	Tue 10/5/21	Tue 10/5/21	No
1904	1904	4.34.2	4.34.3.2	5.25.31.2.7 Incorporate Feedback on Deliverable Expectation Document for Federal Certification Compliance Narrative	3 days	Wed 10/6/21	Fri 10/8/21	No
1905	1905	4.38.2	4.34.3.2	5.25.31.2.8 Submit Final Version of Deliverable Expectation Document for Federal Certification Compliance Narrative	0 days	Fri 10/8/21	Fri 10/8/21	No
1906	1906	4.34.3	4.34.3.2	5.25.31.2.9 Review and Verify Feedback	3 days	Mon 10/11/21	Wed 10/13/21	No
1907	1907	4.34.3	4.34.3.2	5.25.31.2.10 Approve Deliverable Expectation Document for Federal Certification Compliance Narrative	0 days	Wed 10/13/21	Wed 10/13/21	No
1908	1908	4.34.1	4.34.3.2	5.25.31.2.11 Develop Federal Certification Compliance Narrative	60 days	Thu 10/14/21	Thu 1/13/22	No
1909	1909	4.34.2	4.34.3.2	5.25.31.2.12 QA Deliverable	3 days	Fri 1/14/22	Wed 1/19/22	No
1910	1910	4.38.2	4.34.3.2	5.25.31.2.13 Submit Federal Certification Compliance Narrative	0 days	Wed 1/19/22	Wed 1/19/22	No
1911	1911	4.38.1	4.34.3.2	5.25.31.2.14 Conduct Walk-through for Federal Certification Compliance N	2 days	Thu 1/20/22	Fri 1/21/22	No
1912	1912	4.34.3	4.34.3.2	5.25.31.2.15 Review Federal Certification Compliance Narrative	10 days	Thu 1/20/22	Wed 2/2/22	No



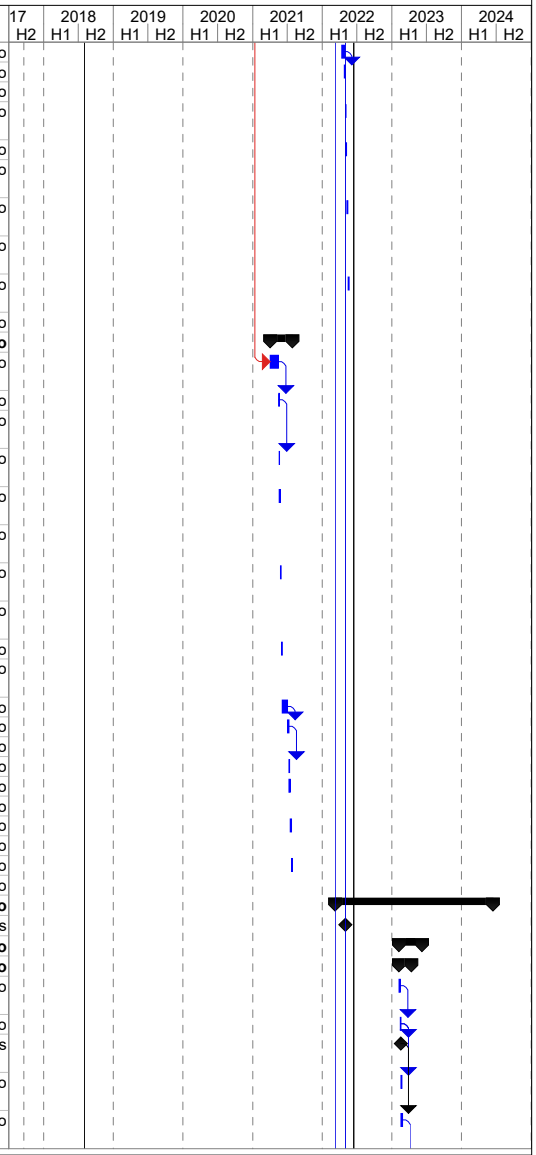
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1913	1913	4.34.3	4.34.3.2	5.25.31.2.16 Provide Feedback on Federal Certification Compliance Narrative	0 days	Wed 2/2/22	Wed 2/2/22	No
1914	1914	4.34.2	4.34.3.2	5.25.31.2.17 Incorporate Feedback on Federal Compliance Narrative	5 days	Thu 2/3/22	Wed 2/9/22	No
1915	1915	4.38.2	4.34.3.2	5.25.31.2.18 Submit Final Version of Federal Certification Compliance Narrative	0 days	Wed 2/9/22	Wed 2/9/22	No
1916	1916	4.34.3	4.34.3.2	5.25.31.2.19 Review and Verify Federal Certification Compliance Narrative	3 days	Thu 2/10/22	Mon 2/14/22	No
1917	1917	4.34.1	4.34.3.2	5.25.31.2.20 Approve Federal Certification Compliance Narrative	0 days	Mon 2/14/22	Mon 2/14/22	No
1918	**1918**	**4.34**	**4.34.3.3**	**5.25.31.3 DELIVERABLE: PRWORA Test Documentation**	**77 days**	**Mon 10/4/21**	**Thu 1/27/22**	**No**
1919	1919	4.34.1	4.34.3.3	5.25.31.3.1 Develop Deliverable Expectation Document for PRWORA Test Documentation	5 days	Mon 10/4/21	Fri 10/8/21	No
1920	1920	4.34.2	4.34.3.3	5.25.31.3.2 QA Deliverable Expectation Document	4 days	Mon 10/11/21	Thu 10/14/21	No
1921	1921	4.38.2	4.34.3.3	5.25.31.3.3 Submit Deliverable Expectation Document for PRWORA Test Documentation	0 days	Thu 10/14/21	Thu 10/14/21	No
1922	1922	4.38.1	4.34.3.3	5.25.31.3.4 Conduct Walk-through for Deliverable Expectation Document for PRWORA Test Documentation	2 days	Fri 10/15/21	Mon 10/18/21	No
1923	1923	4.34.3	4.34.3.3	5.25.31.3.5 Review Deliverable Expectation Document for PRWORA Test Documentation	5 days	Fri 10/15/21	Thu 10/21/21	No
1924	1924	4.34.3	4.34.3.3	5.25.31.3.6 Provide Feedback on Deliverable Expectation Document for PRWORA Test Documentation	0 days	Thu 10/21/21	Thu 10/21/21	No
1925	1925	4.34.2	4.34.3.3	5.25.31.3.7 Incorporate Feedback on Deliverable Expectation Document for PRWORA Test Documentation	3 days	Fri 10/22/21	Tue 10/26/21	No
1926	1926	4.38.2	4.34.3.3	5.25.31.3.8 Submit Final Version of Deliverable Expectation Document for PRWORA Test Documentation	0 days	Tue 10/26/21	Tue 10/26/21	No
1927	1927	4.34.3	4.34.3.3	5.25.31.3.9 Review and Verify Feedback	3 days	Wed 10/27/21	Mon 11/1/21	No
1928	1928	4.34.3	4.34.3.3	5.25.31.3.10 Approve Deliverable Expectation Document for PRWORA Test Documentation	0 days	Mon 11/1/21	Mon 11/1/21	No
1929	1929	4.34.1	4.34.3.3	5.25.31.3.11 Develop PRWORA Test Documentation	35 days	Tue 11/2/21	Thu 12/23/21	No
1930	1930	4.34.2	4.34.3.3	5.25.31.3.12 QA Deliverable	3 days	Mon 12/27/21	Wed 12/29/21	No
1931	1931	4.38.2	4.34.3.3	5.25.31.3.13 Submit PRWORA Test Documentation	0 days	Wed 12/29/21	Wed 12/29/21	No
1932	1932	4.38.1	4.34.3.3	5.25.31.3.14 Conduct Walk-through for PRWORA Test Documentation	2 days	Thu 12/30/21	Mon 1/3/22	No
1933	1933	4.34.3	4.34.3.3	5.25.31.3.15 Review PRWORA Test Documentation	10 days	Thu 12/30/21	Thu 1/13/22	No
1934	1934	4.34.3	4.34.3.3	5.25.31.3.16 Provide Feedback on PRWORA Test Documentation	0 days	Thu 1/13/22	Thu 1/13/22	No
1935	1935	4.34.2	4.34.3.3	5.25.31.3.17 Incorporate Feedback on PRWORA Test Documentation	5 days	Fri 1/14/22	Fri 1/21/22	No
1936	1936	4.38.2	4.34.3.3	5.25.31.3.18 Submit Final Version of PRWORA Test Documentation	0 days	Fri 1/21/22	Fri 1/21/22	No
1937	1937	4.34.3	4.34.3.3	5.25.31.3.19 Review and Verify PRWORA Test Documentation	4 days	Mon 1/24/22	Thu 1/27/22	No
1938	1938	4.34.1	4.34.3.3	5.25.31.3.20 Approve PRWORA Test Documentation	0 days	Thu 1/27/22	Thu 1/27/22	No
1939	**1939**	**4.34**	**4.34.3.4**	**5.25.31.4 DELIVERABLE: Federal Certification Compliance Demonstration**	**53 days**	**Wed 3/9/22**	**Fri 5/20/22**	**No**
1940	1940	4.34.1	4.34.3.4	5.25.31.4.1 Develop Deliverable Expectation Document for Federal Certification Compliance Demonstration	10 days	Wed 3/9/22	Tue 3/22/22	No
1941	1941	4.34.2	4.34.3.4	5.25.31.4.2 QA Deliverable Expectation Document	3 days	Wed 3/23/22	Fri 3/25/22	No
1942	1942	4.38.2	4.34.3.4	5.25.31.4.3 Submit Deliverable Expectation Document for Federal Certification Compliance Demonstration	0 days	Fri 3/25/22	Fri 3/25/22	No
1943	1943	4.38.1	4.34.3.4	5.25.31.4.4 Conduct Walk-through for Deliverable Expectation Document for Federal Certification Compliance Demonstration	2 days	Mon 3/28/22	Tue 3/29/22	No
1944	1944	4.34.3	4.34.3.4	5.25.31.4.5 Review Deliverable Expectation Document for Federal Certification Compliance Demonstration	5 days	Mon 3/28/22	Fri 4/1/22	No
1945	1945	4.34.3	4.34.3.4	5.25.31.4.6 Provide Feedback on Deliverable Expectation Document for Federal Certification Compliance Demonstration	0 days	Fri 4/1/22	Fri 4/1/22	No
1946	1946	4.34.2	4.34.3.4	5.25.31.4.7 Incorporate Feedback on Deliverable Expectation Document for Federal Certification Compliance Demonstration	3 days	Mon 4/4/22	Wed 4/6/22	No
1947	1947	4.38.2	4.34.3.4	5.25.31.4.8 Submit Final Version of Deliverable Expectation Document for Federal Certification Compliance Demonstration	0 days	Wed 4/6/22	Wed 4/6/22	No
1948	1948	4.34.3	4.34.3.4	5.25.31.4.9 Review and Verify Feedback	3 days	Thu 4/7/22	Mon 4/11/22	No
1949	1949	4.34.3	4.34.3.4	5.25.31.4.10 Approve Deliverable Expectation Document for Federal Certification Compliance Demonstration	0 days	Mon 4/11/22	Mon 4/11/22	No



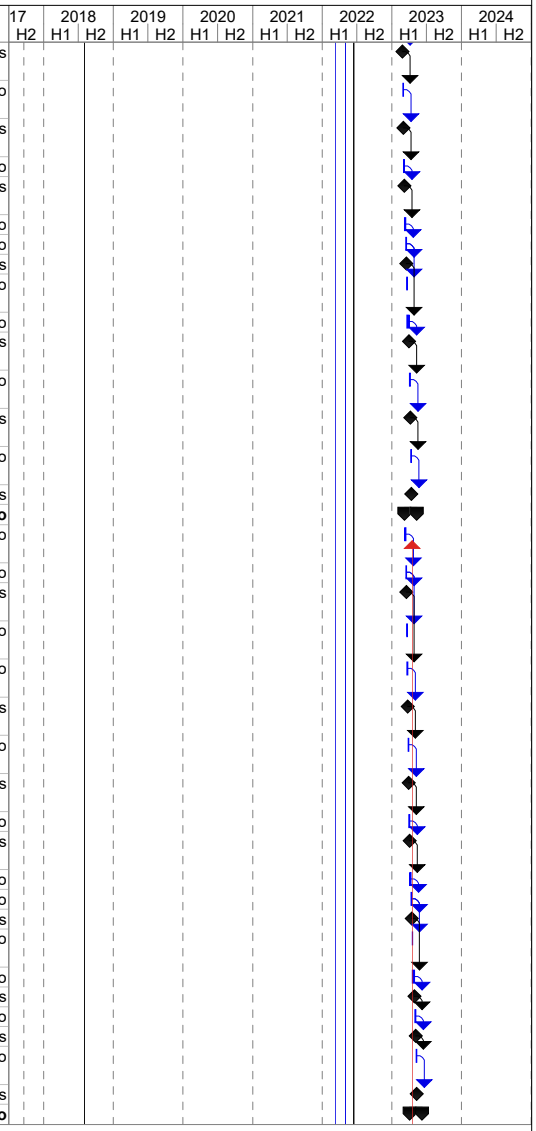
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1950	1950	4.34.1	4.34.3.4	5.25.31.4.11 Develop Federal Certification Compliance Demonstration	10 days	Tue 4/12/22	Mon 4/25/22	No
1951	1951	4.34.2	4.34.3.4	5.25.31.4.12 QA Deliverable	4 days	Tue 4/26/22	Fri 4/29/22	No
1952	1952	4.38.2	4.34.3.4	5.25.31.4.13 Submit Federal Certification Compliance Demonstration	0 days	Fri 4/29/22	Fri 4/29/22	No
1953	1953	4.38.1	4.34.3.4	5.25.31.4.14 Conduct Walk-through for Federal Certification Compliance Demonstration	2 days	Mon 5/2/22	Tue 5/3/22	No
1954	1954	4.34.3	4.34.3.4	5.25.31.4.15 Review Federal Certification Compliance Demonstration	5 days	Mon 5/2/22	Fri 5/6/22	No
1955	1955	4.34.3	4.34.3.4	5.25.31.4.16 Provide Feedback on Federal Certification Compliance Demonstration	0 days	Fri 5/6/22	Fri 5/6/22	No
1956	1956	4.34.2	4.34.3.4	5.25.31.4.17 Incorporate Feedback on Federal Certification Compliance Demonstration	5 days	Mon 5/9/22	Fri 5/13/22	No
1957	1957	4.38.2	4.34.3.4	5.25.31.4.18 Submit Final Version of Federal Certification Compliance Demonstration	0 days	Fri 5/13/22	Fri 5/13/22	No
1958	1958	4.34.3	4.34.3.4	5.25.31.4.19 Review and Verify Federal Certification Compliance Demonstration	5 days	Mon 5/16/22	Fri 5/20/22	No
1959	1959	4.34.1	4.34.3.4	5.25.31.4.20 Approve Federal Certification Compliance Demonstration	0 days	Fri 5/20/22	Fri 5/20/22	No
1960	**1960**	**4.35**	**4.35.3.3**	**5.25.31.5 DELIVERABLE: Maintenance Training Plan**	**81 days**	**Fri 4/2/21**	**Tue 7/27/21**	**No**
1961	1961	4.35.1	4.35.3.3	5.25.31.5.1 Develop Deliverable Expectation Document for Maintenance Training Plan	30 days	Fri 4/2/21	Fri 5/14/21	No
1962	1962	4.35.2	4.35.3.3	5.25.31.5.2 QA Deliverable Expectation Document	2 days	Mon 5/17/21	Tue 5/18/21	No
1963	1963	4.38.2	4.35.3.3	5.25.31.5.3 Submit Deliverable Expectation Document for Maintenance Training Plan	0 days	Tue 5/18/21	Tue 5/18/21	No
1964	1964	4.38.1	4.35.3.3	5.25.31.5.4 Conduct Walk-through for Deliverable Expectation Document for Maintenance Training Plan	2 days	Wed 5/19/21	Thu 5/20/21	No
1965	1965	4.35.3	4.35.3.3	5.25.31.5.5 Review Deliverable Expectation Document for Maintenance Training Plan	5 days	Wed 5/19/21	Tue 5/25/21	No
1966	1966	4.35.3	4.35.3.3	5.25.31.5.6 Provide Feedback on Deliverable Expectation Document for Maintenance Training Plan	0 days	Tue 5/25/21	Tue 5/25/21	No
1967	1967	4.35.2	4.35.3.3	5.25.31.5.7 Incorporate Feedback on Deliverable Expectation Document for Maintenance Training Plan	3 days	Wed 5/26/21	Fri 5/28/21	No
1968	1968	4.38.2	4.35.3.3	5.25.31.5.8 Submit Final Version of Deliverable Expectation Document for Maintenance Training Plan	0 days	Fri 5/28/21	Fri 5/28/21	No
1969	1969	4.35.3	4.35.3.3	5.25.31.5.9 Review and Verify Feedback	3 days	Tue 6/1/21	Thu 6/3/21	No
1970	1970	4.35.3	4.35.3.3	5.25.31.5.10 Approve Deliverable Expectation Document for Maintenance Training Plan	0 days	Thu 6/3/21	Thu 6/3/21	No
1971	1971	4.35.1	4.35.3.3	5.25.31.5.11 Develop Maintenance Training Plan	20 days	Fri 6/4/21	Thu 7/1/21	No
1972	1972	4.35.2	4.35.3.3	5.25.31.5.12 QA Deliverable	5 days	Fri 7/2/21	Thu 7/8/21	No
1973	1973	4.38.2	4.35.3.3	5.25.31.5.13 Submit Maintenance Training Plan	0 days	Thu 7/8/21	Thu 7/8/21	No
1974	1974	4.38.1	4.35.3.3	5.25.31.5.14 Conduct Walk-through for Maintenance Training Plan	2 days	Fri 7/9/21	Mon 7/12/21	No
1975	1975	4.35.3	4.35.3.3	5.25.31.5.15 Review Maintenance Training Plan	5 days	Fri 7/9/21	Thu 7/15/21	No
1976	1976	4.35.3	4.35.3.3	5.25.31.5.16 Provide Feedback on Maintenance Training Plan	0 days	Thu 7/15/21	Thu 7/15/21	No
1977	1977	4.35.2	4.35.3.3	5.25.31.5.17 Incorporate Feedback on Maintenance Training Plan	5 days	Fri 7/16/21	Thu 7/22/21	No
1978	1978	4.38.2	4.35.3.3	5.25.31.5.18 Submit Final Version of Maintenance Training Plan	0 days	Thu 7/22/21	Thu 7/22/21	No
1979	1979	4.35.3	4.35.3.3	5.25.31.5.19 Review and Verify Maintenance Training Plan	3 days	Fri 7/23/21	Tue 7/27/21	No
1980	1980	4.35.1	4.35.3.3	5.25.31.5.20 Approve Maintenance Training Plan	0 days	Tue 7/27/21	Tue 7/27/21	No
1981	**1981**	**1.2.1.4**		**6 Operation**	**568 days**	**Wed 3/9/22**	**Thu 6/13/24**	**No**
1982	1982	**1.2.1.4**		6.1 Operation Start	0 days	Mon 5/2/22	Mon 5/2/22	Yes
1983	**1983**	**1.2.1.4**		**6.2 Execution Deliverables from the Transition Phase**	**85 days**	**Tue 2/7/23**	**Wed 6/7/23**	**No**
1984	**1984**	**4.35**	**4.35.3.4**	**6.2.1 DELIVERABLE: Successful Execution of the Maintenance Training Plan**	**46 days**	**Tue 2/7/23**	**Wed 4/12/23**	**No**
1985	1985	4.35.1	4.35.3.4	6.2.1.1 Develop Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	5 days	Tue 2/7/23	Mon 2/13/23	No
1986	1986	4.35.2	4.35.3.4	6.2.1.2 QA Deliverable Expectation Document	3 days	Tue 2/14/23	Thu 2/16/23	No
1987	1987	4.38.2	4.35.3.4	6.2.1.3 Submit Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	0 days	Thu 2/16/23	Thu 2/16/23	Yes
1988	1988	4.38.1	4.35.3.4	6.2.1.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	2 days	Fri 2/17/23	Tue 2/21/23	No
1989	1989	4.35.3	4.35.3.4	6.2.1.5 Review Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	5 days	Fri 2/17/23	Fri 2/24/23	No



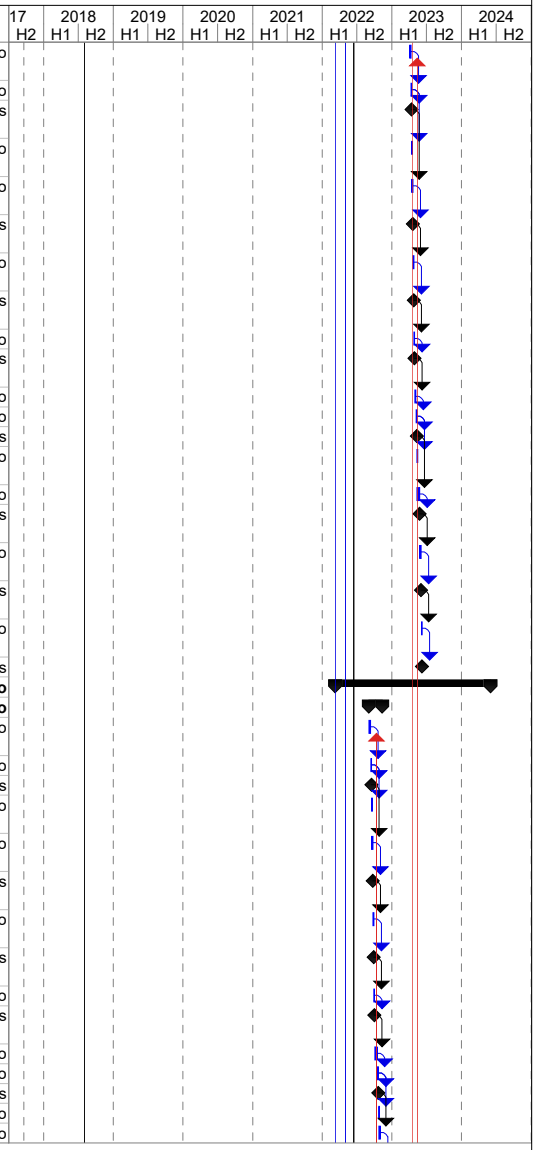
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
1990	1990	4.35.3	4.35.3.4	6.2.1.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	0 days	Fri 2/24/23	Fri 2/24/23	Yes
1991	1991	4.35.2	4.35.3.4	6.2.1.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	3 days	Mon 2/27/23	Wed 3/1/23	No
1992	1992	4.38.2	4.35.3.4	6.2.1.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	0 days	Wed 3/1/23	Wed 3/1/23	Yes
1993	1993	4.35.3	4.35.3.4	6.2.1.9 Review and Verify Feedback	3 days	Thu 3/2/23	Mon 3/6/23	No
1994	1994	4.35.3	4.35.3.4	6.2.1.10 Approve Deliverable Expectation Document for Successful Execution of Maintenance Training Plan	0 days	Mon 3/6/23	Mon 3/6/23	Yes
1995	1995	4.35.1	4.35.3.4	6.2.1.11 Develop Successful Execution of Maintenance Training Plan	5 days	Tue 3/7/23	Mon 3/13/23	No
1996	1996	4.35.2	4.35.3.4	6.2.1.12 QA Deliverable	4 days	Tue 3/14/23	Fri 3/17/23	No
1997	1997	4.38.2	4.35.3.4	6.2.1.13 Submit Successful Execution of Maintenance Training Plan	0 days	Fri 3/17/23	Fri 3/17/23	Yes
1998	1998	4.38.1	4.35.3.4	6.2.1.14 Conduct Walk-through for Successful Execution of Maintenance Training Plan	2 days	Mon 3/20/23	Tue 3/21/23	No
1999	1999	4.35.3	4.35.3.4	6.2.1.15 Review Successful Execution of Maintenance Training Plan	10 days	Mon 3/20/23	Fri 3/31/23	No
2000	2000	4.35.3	4.35.3.4	6.2.1.16 Provide Feedback on Successful Execution of Maintenance Training Plan	0 days	Fri 3/31/23	Fri 3/31/23	Yes
2001	2001	4.35.2	4.35.3.4	6.2.1.17 Incorporate Feedback on Successful Execution of Maintenance Training Plan	5 days	Mon 4/3/23	Fri 4/7/23	No
2002	2002	4.38.2	4.35.3.4	6.2.1.18 Submit Final Version of Successful Execution of Maintenance Training Plan	0 days	Fri 4/7/23	Fri 4/7/23	Yes
2003	2003	4.35.3	4.35.3.4	6.2.1.19 Review and Verify Feedback on Successful Execution of Maintenance Training Plan	3 days	Mon 4/10/23	Wed 4/12/23	No
2004	2004	4.35.3	4.35.3.4	6.2.1.20 Approve Successful Execution of Maintenance Training Plan	0 days	Wed 4/12/23	Wed 4/12/23	Yes
2005	**2005**	**4.35**	**4.35.3.6**	**6.2.2 DELIVERABLE: Successful Execution of the Operations Plan**	**46 days**	**Wed 3/8/23**	**Wed 5/10/23**	**No**
2006	2006	4.35.1	4.35.3.6	6.2.2.1 Develop Deliverable Expectation Document for Successful Execution of Operations Plan	5 days	Wed 3/8/23	Tue 3/14/23	No
2007	2007	4.35.2	4.35.3.6	6.2.2.2 QA Deliverable Expectation Document	3 days	Wed 3/15/23	Fri 3/17/23	No
2008	2008	4.38.2	4.35.3.6	6.2.2.3 Submit Deliverable Expectation Document for Successful Execution of Operations Plan	0 days	Fri 3/17/23	Fri 3/17/23	Yes
2009	2009	4.38.1	4.35.3.6	6.2.2.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Operations Plan	2 days	Mon 3/20/23	Tue 3/21/23	No
2010	2010	4.35.3	4.35.3.6	6.2.2.5 Review Deliverable Expectation Document for Successful Execution of Operations Plan	5 days	Mon 3/20/23	Fri 3/24/23	No
2011	2011	4.35.3	4.35.3.6	6.2.2.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Operations Plan	0 days	Fri 3/24/23	Fri 3/24/23	Yes
2012	2012	4.35.2	4.35.3.6	6.2.2.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Operations Plan	3 days	Mon 3/27/23	Wed 3/29/23	No
2013	2013	4.38.2	4.35.3.6	6.2.2.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Operations Plan	0 days	Wed 3/29/23	Wed 3/29/23	Yes
2014	2014	4.35.3	4.35.3.6	6.2.2.9 Review and Verify Feedback	3 days	Thu 3/30/23	Mon 4/3/23	No
2015	2015	4.35.3	4.35.3.6	6.2.2.10 Approve Deliverable Expectation Document for Successful Execution of Operations Plan	0 days	Mon 4/3/23	Mon 4/3/23	Yes
2016	2016	4.35.1	4.35.3.6	6.2.2.11 Develop Successful Execution of Operations Plan	5 days	Tue 4/4/23	Mon 4/10/23	No
2017	2017	4.35.2	4.35.3.6	6.2.2.12 QA Deliverable	4 days	Tue 4/11/23	Fri 4/14/23	No
2018	2018	4.38.2	4.35.3.6	6.2.2.13 Submit Successful Execution of Operations Plan	0 days	Fri 4/14/23	Fri 4/14/23	Yes
2019	2019	4.38.1	4.35.3.6	6.2.2.14 Conduct Walk-through for Successful Execution of Operations Plan	2 days	Mon 4/17/23	Tue 4/18/23	No
2020	2020	4.35.3	4.35.3.6	6.2.2.15 Review Successful Execution of Operations Plan	10 days	Mon 4/17/23	Fri 4/28/23	No
2021	2021	4.35.3	4.35.3.6	6.2.2.16 Provide Feedback on Successful Execution of Operations Plan	0 days	Fri 4/28/23	Fri 4/28/23	Yes
2022	2022	4.35.2	4.35.3.6	6.2.2.17 Incorporate Feedback on Successful Execution of Operations Plan	5 days	Mon 5/1/23	Fri 5/5/23	No
2023	2023	4.38.2	4.35.3.6	6.2.2.18 Submit Final Version of Successful Execution of Operations Plan	0 days	Fri 5/5/23	Fri 5/5/23	Yes
2024	2024	4.35.3	4.35.3.6	6.2.2.19 Review and Verify Feedback on Successful Execution of Operations Plan	3 days	Mon 5/8/23	Wed 5/10/23	No
2025	2025	4.35.3	4.35.3.6	6.2.2.20 Approve Successful Execution of Operations Plan	0 days	Wed 5/10/23	Wed 5/10/23	Yes
2026	**2026**	**4.35**	**4.35.3.8**	**6.2.3 DELIVERABLE: Successful Execution of the Operations Transition Pla**	**46 days**	**Tue 4/4/23**	**Wed 6/7/23**	**No**



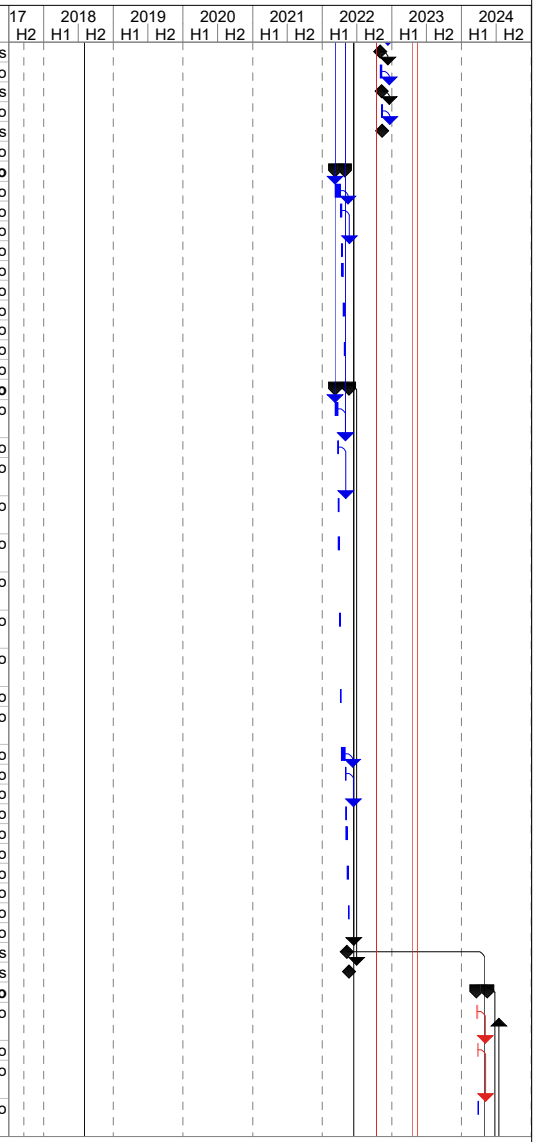
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2027	2027	4.35.1	4.35.3.8	6.2.3.1 Develop Deliverable Expectation Document for Successful Execution of Operations Transition Plan	5 days	Tue 4/4/23	Mon 4/10/23	No
2028	2028	4.35.2	4.35.3.8	6.2.3.2 QA Deliverable Expectation Document	3 days	Tue 4/11/23	Thu 4/13/23	No
2029	2029	4.38.2	4.35.3.8	6.2.3.3 Submit Deliverable Expectation Document for Successful Execution of Operations Transition Plan	0 days	Thu 4/13/23	Thu 4/13/23	Yes
2030	2030	4.38.1	4.35.3.8	6.2.3.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Operations Transition Plan	2 days	Fri 4/14/23	Mon 4/17/23	No
2031	2031	4.35.3	4.35.3.8	6.2.3.5 Review Deliverable Expectation Document for Successful Execution of Operations Transition Plan	5 days	Fri 4/14/23	Thu 4/20/23	No
2032	2032	4.35.3	4.35.3.8	6.2.3.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Operations Transition Plan	0 days	Thu 4/20/23	Thu 4/20/23	Yes
2033	2033	4.35.2	4.35.3.8	6.2.3.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Operations Transition Plan	3 days	Fri 4/21/23	Tue 4/25/23	No
2034	2034	4.38.2	4.35.3.8	6.2.3.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Operations Transition Plan	0 days	Tue 4/25/23	Tue 4/25/23	Yes
2035	2035	4.35.3	4.35.3.8	6.2.3.9 Review and Verify Feedback	3 days	Wed 4/26/23	Fri 4/28/23	No
2036	2036	4.35.3	4.35.3.8	6.2.3.10 Approve Deliverable Expectation Document for Successful Execution of Operations Transition Plan	0 days	Fri 4/28/23	Fri 4/28/23	Yes
2037	2037	4.35.1	4.35.3.8	6.2.3.11 Develop Successful Execution of Operations Transition Plan	5 days	Mon 5/1/23	Fri 5/5/23	No
2038	2038	4.35.2	4.35.3.8	6.2.3.12 QA Deliverable	4 days	Mon 5/8/23	Thu 5/11/23	No
2039	2039	4.38.2	4.35.3.8	6.2.3.13 Submit Successful Execution of Operations Transition Plan	0 days	Thu 5/11/23	Thu 5/11/23	Yes
2040	2040	4.38.1	4.35.3.8	6.2.3.14 Conduct Walk-through for Successful Execution of Operations Transition Plan	2 days	Fri 5/12/23	Mon 5/15/23	No
2041	2041	4.35.3	4.35.3.8	6.2.3.15 Review Successful Execution of Operations Transition Plan	10 days	Fri 5/12/23	Thu 5/25/23	No
2042	2042	4.35.3	4.35.3.8	6.2.3.16 Provide Feedback on Successful Execution of Operations Transition Plan	0 days	Thu 5/25/23	Thu 5/25/23	Yes
2043	2043	4.35.2	4.35.3.8	6.2.3.17 Incorporate Feedback on Successful Execution of Operations Transition Plan	5 days	Fri 5/26/23	Fri 6/2/23	No
2044	2044	4.38.2	4.35.3.8	6.2.3.18 Submit Final Version of Successful Execution of Operations Transition Plan	0 days	Fri 6/2/23	Fri 6/2/23	Yes
2045	2045	4.35.3	4.35.3.8	6.2.3.19 Review and Verify Feedback on Successful Execution of Operations Transition Plan	3 days	Mon 6/5/23	Wed 6/7/23	No
2046	2046	4.35.3	4.35.3.8	6.2.3.20 Approve Successful Execution of Operations Transition Plan	0 days	Wed 6/7/23	Wed 6/7/23	Yes
2047	**2047**	**4.33**		**6.3 Maintain and Operate**	**559 days**	**Wed 3/9/22**	**Fri 5/31/24**	**No**
2048	**2048**	**4.25**	**4.25.3.2**	**6.3.1 DELIVERABLE: Successful Execution of Warranty Support Plan**	**48 days**	**Fri 9/2/22**	**Thu 11/10/22**	**No**
2049	2049	4.25.1	4.25.3.2	6.3.1.1 Develop Deliverable Expectation Document for Warranty Support Plan	5 days	Fri 9/2/22	Fri 9/9/22	No
2050	2050	4.25.2	4.25.3.2	6.3.1.2 QA Deliverable Expectation Document	4 days	Mon 9/12/22	Thu 9/15/22	No
2051	2051	4.38.2	4.25.3.2	6.3.1.3 Submit Deliverable Expectation Document for Warranty Support Plan	0 days	Thu 9/15/22	Thu 9/15/22	Yes
2052	2052	4.38.1	4.25.3.2	6.3.1.4 Conduct Walk-through for Deliverable Expectation Document for Warranty Support Plan	2 days	Fri 9/16/22	Mon 9/19/22	No
2053	2053	4.25.3	4.25.3.2	6.3.1.5 Review Deliverable Expectation Document for Warranty Support Plan	5 days	Fri 9/16/22	Thu 9/22/22	No
2054	2054	4.25.3	4.25.3.2	6.3.1.6 Provide Feedback on Deliverable Expectation Document for Warranty Support Plan	0 days	Thu 9/22/22	Thu 9/22/22	Yes
2055	2055	4.25.2	4.25.3.2	6.3.1.7 Incorporate Feedback on Deliverable Expectation Document for Warranty Support Plan	3 days	Fri 9/23/22	Tue 9/27/22	No
2056	2056	4.38.2	4.25.3.2	6.3.1.8 Submit Final Version of Deliverable Expectation Document for Warranty Support Plan	0 days	Tue 9/27/22	Tue 9/27/22	Yes
2057	2057	4.25.3	4.25.3.2	6.3.1.9 Review and Verify Feedback	3 days	Wed 9/28/22	Fri 9/30/22	No
2058	2058	4.25.3	4.25.3.2	6.3.1.10 Approve Deliverable Expectation Document for Warranty Support Plan	0 days	Fri 9/30/22	Fri 9/30/22	Yes
2059	2059	4.25.1	4.25.3.2	6.3.1.11 Develop Warranty Support Plan	10 days	Mon 10/3/22	Fri 10/14/22	No
2060	2060	4.25.2	4.25.3.2	6.3.1.12 QA Deliverable	5 days	Mon 10/17/22	Fri 10/21/22	No
2061	2061	4.38.2	4.25.3.2	6.3.1.13 Submit Warranty Support Plan	0 days	Fri 10/21/22	Fri 10/21/22	Yes
2062	2062	4.38.1	4.25.3.2	6.3.1.14 Conduct Walk-through for Warranty Support Plan	2 days	Mon 10/24/22	Tue 10/25/22	No
2063	2063	4.25.3	4.25.3.2	6.3.1.15 Review Warranty Support Plan	5 days	Mon 10/24/22	Mon 10/31/22	No



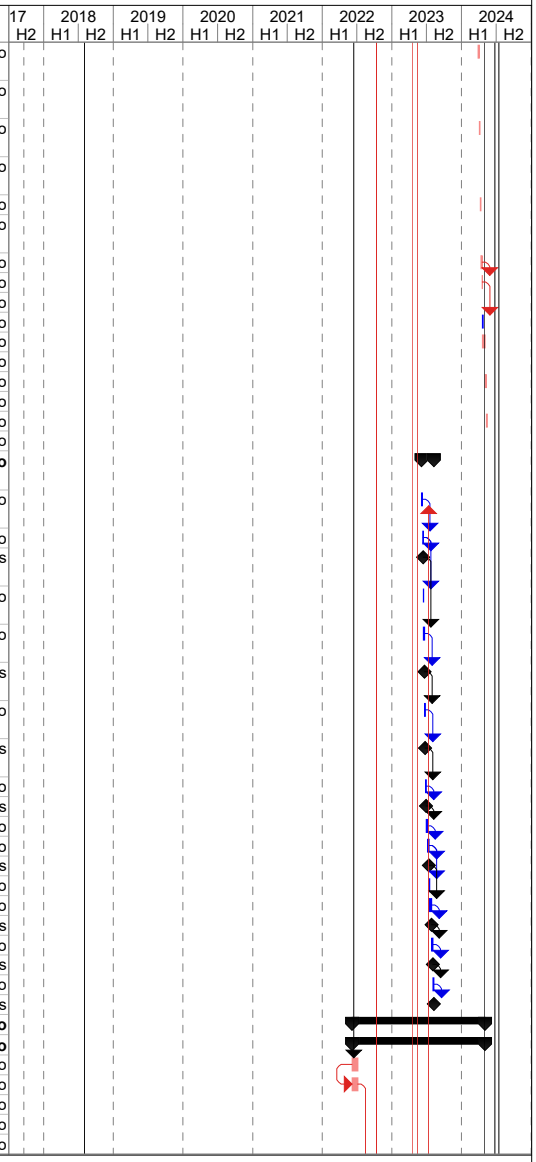
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2064	2064	4.25.3	4.25.3.2	6.3.1.16 Provide Feedback on Warranty Support Plan	0 days	Mon 10/31/22	Mon 10/31/22	Yes
2065	2065	4.25.2	4.25.3.2	6.3.1.17 Incorporate Feedback on Warranty Support Plan	5 days	Tue 11/1/22	Mon 11/7/22	No
2066	2066	4.38.2	4.25.3.2	6.3.1.18 Submit Final Version of Warranty Support Plan	0 days	Mon 11/7/22	Mon 11/7/22	Yes
2067	2067	4.25.3	4.25.3.2	6.3.1.19 Review and Verify Warranty Support Plan	3 days	Tue 11/8/22	Thu 11/10/22	No
2068	2068	4.25.1	4.25.3.2	6.3.1.20 Approve Warranty Support Plan	0 days	Thu 11/10/22	Thu 11/10/22	Yes
2069	2069	4.33		6.3.2 Federal Certification Visit	0 days	Thu 4/14/22	Thu 4/14/22	No
2070	**2070**	**4.34**	**4.34.3.5**	**6.3.3 DELIVERABLE: Federal Certification Compliance**	**37 days**	**Wed 3/9/22**	**Thu 4/28/22**	**No**
2071	2071	4.34.1	4.34.3.5	6.3.3.1 Develop Federal Certification Compliance	20 days	Wed 3/9/22	Tue 4/5/22	No
2072	2072	4.34.2	4.34.3.5	6.3.3.2 QA Deliverable	5 days	Wed 4/6/22	Tue 4/12/22	No
2073	2073	4.38.2	4.34.3.5	6.3.3.3 Submit Federal Certification Compliance	0 days	Tue 4/12/22	Tue 4/12/22	No
2074	2074	4.38.1	4.34.3.5	6.3.3.4 Conduct Walk-through for Federal Certification Compliance	2 days	Wed 4/13/22	Thu 4/14/22	No
2075	2075	4.34.3	4.34.3.5	6.3.3.5 Review Federal Certification Compliance	5 days	Wed 4/13/22	Tue 4/19/22	No
2076	2076	4.34.3	4.34.3.5	6.3.3.6 Provide Feedback on Federal Certification Compliance	0 days	Tue 4/19/22	Tue 4/19/22	No
2077	2077	4.34.2	4.34.3.5	6.3.3.7 Incorporate Feedback on Federal Certification Compliance	4 days	Wed 4/20/22	Mon 4/25/22	No
2078	2078	4.38.2	4.34.3.5	6.3.3.8 Submit Federal Certification Compliance	0 days	Mon 4/25/22	Mon 4/25/22	No
2079	2079	4.34.3	4.34.3.5	6.3.3.9 Review and Verify Federal Certification Compliance	3 days	Tue 4/26/22	Thu 4/28/22	No
2080	2080	4.34.1	4.34.3.5	6.3.3.10 Approve Federal Certification Compliance	0 days	Thu 4/28/22	Thu 4/28/22	No
2081	**2081**	**4.34**	**4.34.3.1**	**6.3.4 DELIVERABLE: Federal Certification Support**	**53 days**	**Wed 3/9/22**	**Fri 5/20/22**	**No**
2082	2082	4.34.1	4.34.3.1	6.3.4.1 Develop Deliverable Expectation Document for Federal Certification Support	10 days	Wed 3/9/22	Tue 3/22/22	No
2083	2083	4.34.2	4.34.3.1	6.3.4.2 QA Deliverable Expectation Document	2 days	Wed 3/23/22	Thu 3/24/22	No
2084	2084	4.38.2	4.34.3.1	6.3.4.3 Submit Deliverable Expectation Document for Federal Certification Support	0 days	Thu 3/24/22	Thu 3/24/22	No
2085	2085	4.38.1	4.34.3.1	6.3.4.4 Conduct Walk-through for Deliverable Expectation Document for Federal Certification Support	2 days	Fri 3/25/22	Mon 3/28/22	No
2086	2086	4.34.3	4.34.3.1	6.3.4.5 Review Deliverable Expectation Document for Federal Certification Support	5 days	Fri 3/25/22	Thu 3/31/22	No
2087	2087	4.34.3	4.34.3.1	6.3.4.6 Provide Feedback on Deliverable Expectation Document for Federal Certification Support	0 days	Thu 3/31/22	Thu 3/31/22	No
2088	2088	4.34.2	4.34.3.1	6.3.4.7 Incorporate Feedback on Deliverable Expectation Document for Federal Certification Support	3 days	Fri 4/1/22	Tue 4/5/22	No
2089	2089	4.38.2	4.34.3.1	6.3.4.8 Submit Final Version of Deliverable Expectation Document for Federal Certification Support	0 days	Tue 4/5/22	Tue 4/5/22	No
2090	2090	4.34.3	4.34.3.1	6.3.4.9 Review and Verify Feedback	3 days	Wed 4/6/22	Fri 4/8/22	No
2091	2091	4.34.3	4.34.3.1	6.3.4.10 Approve Deliverable Expectation Document for Federal Certification Support	0 days	Fri 4/8/22	Fri 4/8/22	No
2092	2092	4.34.1	4.34.3.1	6.3.4.11 Develop Federal Certification Support	15 days	Mon 4/11/22	Fri 4/29/22	No
2093	2093	4.34.2	4.34.3.1	6.3.4.12 QA Deliverable	2 days	Mon 5/2/22	Tue 5/3/22	No
2094	2094	4.38.2	4.34.3.1	6.3.4.13 Submit Federal Certification Support	0 days	Tue 5/3/22	Tue 5/3/22	No
2095	2095	4.38.1	4.34.3.1	6.3.4.14 Conduct Walk-through for Federal Certification Support	2 days	Wed 5/4/22	Thu 5/5/22	No
2096	2096	4.34.3	4.34.3.1	6.3.4.15 Review Federal Certification Support	5 days	Wed 5/4/22	Tue 5/10/22	No
2097	2097	4.34.3	4.34.3.1	6.3.4.16 Provide Feedback on Federal Certification Support	0 days	Tue 5/10/22	Tue 5/10/22	No
2098	2098	4.34.2	4.34.3.1	6.3.4.17 Incorporate Feedback on Federal Certification Support	5 days	Wed 5/11/22	Tue 5/17/22	No
2099	2099	4.38.2	4.34.3.1	6.3.4.18 Submit Final Version of Federal Certification Support	0 days	Tue 5/17/22	Tue 5/17/22	No
2100	2100	4.34.3	4.34.3.1	6.3.4.19 Review and Verify Federal Certification Support	3 days	Wed 5/18/22	Fri 5/20/22	No
2101	2101	4.34.1	4.34.3.1	6.3.4.20 Approve Federal Certification Support	0 days	Fri 5/20/22	Fri 5/20/22	No
2102	2102	4.33		6.3.5 Maintain and Operate Start	0 days	Mon 5/9/22	Mon 5/9/22	Yes
2103	2103	4.33		6.3.6 System Certified - Certification Complete	0 days	Fri 5/20/22	Fri 5/20/22	Yes
2104	**2104**	**4.36**	**4.36.3.1**	**6.3.7 DELIVERABLE: Project Completion Report**	**41 days**	**Tue 3/19/24**	**Tue 5/14/24**	**No**
2105	2105	4.36.1	4.36.3.1	6.3.7.1 Develop Deliverable Expectation Document for Project Completion Report	5 days	Tue 3/19/24	Mon 3/25/24	No
2106	2106	4.36.2	4.36.3.1	6.3.7.2 QA Deliverable Expectation Document	1 day	Tue 3/26/24	Tue 3/26/24	No
2107	2107	4.38.2	4.36.3.1	6.3.7.3 Submit Deliverable Expectation Document for Project Completion Report	0 days	Tue 3/26/24	Tue 3/26/24	No
2108	2108	4.38.1	4.36.3.1	6.3.7.4 Conduct Walk-through for Deliverable Expectation Document for Project Completion Report	2 days	Wed 3/27/24	Thu 3/28/24	No



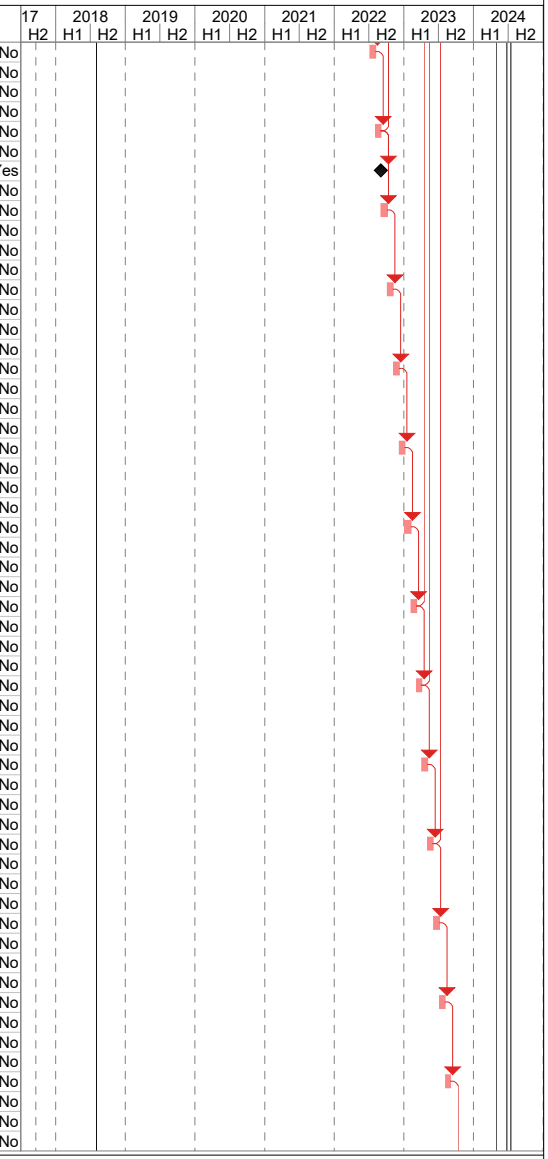
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2109	2109	4.36.3	4.36.3.1	6.3.7.5 Review Deliverable Expectation Document for Project Completion Report	5 days	Wed 3/27/24	Tue 4/2/24	No
2110	2110	4.36.3	4.36.3.1	6.3.7.6 Provide Feedback on Deliverable Expectation Document for Project Completion Report	0 days	Tue 4/2/24	Tue 4/2/24	No
2111	2111	4.36.2	4.36.3.1	6.3.7.7 Incorporate Feedback on Deliverable Expectation Document for Project Completion Report	3 days	Wed 4/3/24	Fri 4/5/24	No
2112	2112	4.38.2	4.36.3.1	6.3.7.8 Submit Final Version of Deliverable Expectation Document for Project Completion Report	0 days	Fri 4/5/24	Fri 4/5/24	No
2113	2113	4.36.3	4.36.3.1	6.3.7.9 Review and Verify Feedback	3 days	Mon 4/8/24	Wed 4/10/24	No
2114	2114	4.36.3	4.36.3.1	6.3.7.10 Approve Deliverable Expectation Document for Project Completion Report	0 days	Wed 4/10/24	Wed 4/10/24	No
2115	2115	4.36.1	4.36.3.1	6.3.7.11 Develop Project Completion Report	5 days	Thu 4/11/24	Wed 4/17/24	No
2116	2116	4.36.2	4.36.3.1	6.3.7.12 QA Deliverable	1 day	Thu 4/18/24	Thu 4/18/24	No
2117	2117	4.38.2	4.36.3.1	6.3.7.13 Submit Project Completion Report	0 days	Thu 4/18/24	Thu 4/18/24	No
2118	2118	4.38.1	4.36.3.1	6.3.7.14 Conduct Walk-through for Project Completion Report	2 days	Fri 4/19/24	Mon 4/22/24	No
2119	2119	4.36.3	4.36.3.1	6.3.7.15 Review Project Completion Report	10 days	Fri 4/19/24	Thu 5/2/24	No
2120	2120	4.36.3	4.36.3.1	6.3.7.16 Provide Feedback on Project Completion Report	0 days	Thu 5/2/24	Thu 5/2/24	No
2121	2121	4.36.2	4.36.3.1	6.3.7.17 Incorporate Feedback no Project Completion Report	5 days	Fri 5/3/24	Thu 5/9/24	No
2122	2122	4.38.2	4.36.3.1	6.3.7.18 Submit Final Version of Project Completion Report	0 days	Thu 5/9/24	Thu 5/9/24	No
2123	2123	4.36.3	4.36.3.1	6.3.7.19 Review and Verify Project Completion Report	3 days	Fri 5/10/24	Tue 5/14/24	No
2124	2124	4.36.1	4.36.3.1	6.3.7.20 Approve Project Completion Report	0 days	Tue 5/14/24	Tue 5/14/24	No
2125	**2125**	**4.23**	**4.23.3.2**	**6.3.8 DELIVERABLE: Successful Execution of the Operations Support Plan**	**46 days**	**Mon 6/5/23**	**Tue 8/8/23**	**No**
2126	2126	4.23.1	4.23.3.2	6.3.8.1 Develop Deliverable Expectation Document for Operations Support Plan	5 days	Mon 6/5/23	Fri 6/9/23	No
2127	2127	4.23.2	4.23.3.2	6.3.8.2 QA Deliverable Expectation Document	2 days	Mon 6/12/23	Tue 6/13/23	No
2128	2128	4.38.2	4.23.3.2	6.3.8.3 Submit Deliverable Expectation Document for Operations Support Plan	0 days	Tue 6/13/23	Tue 6/13/23	Yes
2129	2129	4.38.1	4.23.3.2	6.3.8.4 Conduct Walk-through for Deliverable Expectation Document for Operations Support Plan	2 days	Wed 6/14/23	Thu 6/15/23	No
2130	2130	4.23.3	4.23.3.2	6.3.8.5 Review Deliverable Expectation Document for Operations Support Plan	5 days	Wed 6/14/23	Tue 6/20/23	No
2131	2131	4.23.3	4.23.3.2	6.3.8.6 Provide Feedback on Deliverable Expectation Document for Operations Support Plan	0 days	Tue 6/20/23	Tue 6/20/23	Yes
2132	2132	4.23.2	4.23.3.2	6.3.8.7 Incorporate Feedback on Deliverable Expectation Document for Operations Support Plan	3 days	Wed 6/21/23	Fri 6/23/23	No
2133	2133	4.38.2	4.23.3.2	6.3.8.8 Submit Final Version of Deliverable Expectation Document for Operations Support Plan	0 days	Fri 6/23/23	Fri 6/23/23	Yes
2134	2134	4.23.3	4.23.3.2	6.3.8.9 Review and Verify Feedback	3 days	Mon 6/26/23	Wed 6/28/23	No
2135	2135	4.23.3	4.23.3.2	6.3.8.10 Approve Deliverable Expectation Document for Operations Support P	0 days	Wed 6/28/23	Wed 6/28/23	Yes
2136	2136	4.23.1	4.23.3.2	6.3.8.11 Develop Operations Support Plan	5 days	Thu 6/29/23	Thu 7/6/23	No
2137	2137	4.23.2	4.23.3.2	6.3.8.12 QA Deliverable	5 days	Fri 7/7/23	Thu 7/13/23	No
2138	2138	4.38.2	4.23.3.2	6.3.8.13 Submit Operations Support Plan	0 days	Thu 7/13/23	Thu 7/13/23	Yes
2139	2139	4.38.1	4.23.3.2	6.3.8.14 Conduct Walk-through for Operations Support Plan	2 days	Fri 7/14/23	Mon 7/17/23	No
2140	2140	4.23.3	4.23.3.2	6.3.8.15 Review Operations Support Plan	10 days	Fri 7/14/23	Thu 7/27/23	No
2141	2141	4.23.3	4.23.3.2	6.3.8.16 Provide Feedback on Operations Support Plan	0 days	Thu 7/27/23	Thu 7/27/23	Yes
2142	2142	4.23.2	4.23.3.2	6.3.8.17 Incorporate Feedback on Operations Support Plan	5 days	Fri 7/28/23	Thu 8/3/23	No
2143	2143	4.38.2	4.23.3.2	6.3.8.18 Submit Final Version of Operations Support Plan	0 days	Thu 8/3/23	Thu 8/3/23	Yes
2144	2144	4.23.3	4.23.3.2	6.3.8.19 Review and Verify Operations Support Plan	3 days	Fri 8/4/23	Tue 8/8/23	No
2145	2145	4.23.1	4.23.3.2	6.3.8.20 Approve Operations Support Plan	0 days	Tue 8/8/23	Tue 8/8/23	Yes
2146	**2146**	**4.33**		**6.3.9 Maintain and Support**	**477 days**	**Mon 6/6/22**	**Thu 5/2/24**	**No**
2147	**2147**	**4.33**		**6.3.9.1 Maintain and Support Started**	**477 days**	**Mon 6/6/22**	**Thu 5/2/24**	**No**
2148	2148	4.33		6.3.9.1.1 Month 1 Maintenance Period	21 days	Mon 6/6/22	Tue 7/5/22	No
2149	2149	4.33		6.3.9.1.2 Maintain and Support Month 1	21 days	Mon 6/6/22	Tue 7/5/22	No
2150	2150	4.33	4.33.3.2	6.3.9.1.3 Month 1 -- Submit Periodic Help Desk Report	0 days	Tue 7/5/22	Tue 7/5/22	No
2151	2151	4.33	4.33.3.3	6.3.9.1.4 Month 1 -- Submit Warranty Support Report	0 days	Tue 7/5/22	Tue 7/5/22	No
2152	2152	4.33	4.33.3.4	6.3.9.1.5 Month 1 -- Submit Periodic Operation Report	0 days	Tue 7/5/22	Tue 7/5/22	No



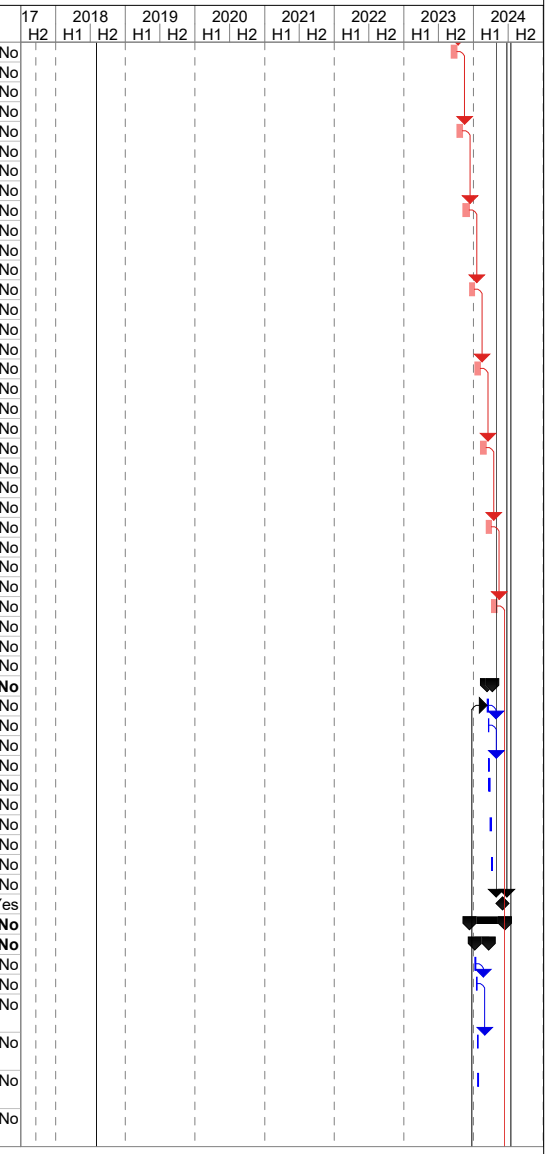
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2153	2153	4.33		6.3.9.1.6 Maintain and Support Month 2	22 days	Wed 7/6/22	Thu 8/4/22	No
2154	2154	4.33	4.33.3.2	6.3.9.1.7 Month 2 -- Submit Periodic Help Desk Report	0 days	Thu 8/4/22	Thu 8/4/22	No
2155	2155	4.33	4.33.3.3	6.3.9.1.8 Month 2 -- Submit Warranty Support Report	0 days	Thu 8/4/22	Thu 8/4/22	No
2156	2156	4.33	4.33.3.4	6.3.9.1.9 Month 2 -- Submit Periodic Operation Report	0 days	Thu 8/4/22	Thu 8/4/22	No
2157	2157	4.33		6.3.9.1.10 Maintain and Support Month 3	20 days	Fri 8/5/22	Thu 9/1/22	No
2158	2158	4.33	4.33.3.2	6.3.9.1.11 Month 3 -- Submit Periodic Help Desk Report	0 days	Thu 9/1/22	Thu 9/1/22	No
2159	2159	4.33	4.33.3.3	6.3.9.1.12 Month 3 -- Submit Warranty Support Report	0 days	Thu 9/1/22	Thu 9/1/22	Yes
2160	2160	4.33	4.33.3.4	6.3.9.1.13 Month 3 -- Submit Periodic Operation Report	0 days	Thu 9/1/22	Thu 9/1/22	No
2161	2161	4.33		6.3.9.1.14 Maintain and Support Month 4	23 days	Fri 9/2/22	Wed 10/5/22	No
2162	2162	4.33	4.33.3.2	6.3.9.1.15 Month 4 -- Submit Periodic Help Desk Report	0 days	Wed 10/5/22	Wed 10/5/22	No
2163	2163	4.33	4.33.3.3	6.3.9.1.16 Month 4 -- Submit Warranty Support Report	0 days	Wed 10/5/22	Wed 10/5/22	No
2164	2164	4.33	4.33.3.4	6.3.9.1.17 Month 4 -- Submit Periodic Operation Report	0 days	Wed 10/5/22	Wed 10/5/22	No
2165	2165	4.33		6.3.9.1.18 Maintain and Support Month 5	21 days	Thu 10/6/22	Fri 11/4/22	No
2166	2166	4.33	4.33.3.2	6.3.9.1.19 Month 5 -- Submit Periodic Help Desk Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2167	2167	4.33	4.33.3.3	6.3.9.1.20 Month 5 -- Submit Warranty Support Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2168	2168	4.33	4.33.3.4	6.3.9.1.21 Month 5 -- Submit Periodic Operation Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2169	2169	4.33		6.3.9.1.22 Maintain and Support Month 6	20 days	Mon 11/7/22	Wed 12/7/22	No
2170	2170	4.33	4.33.3.2	6.3.9.1.23 Month 6 -- Submit Periodic Help Desk Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2171	2171	4.33	4.33.3.3	6.3.9.1.24 Month 6 -- Submit Warranty Support Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2172	2172	4.33	4.33.3.4	6.3.9.1.25 Month 6 -- Submit Periodic Operation Report	0 days	Fri 11/4/22	Fri 11/4/22	No
2173	2173	4.33		6.3.9.1.26 Maintain and Support Month 7	19 days	Thu 12/8/22	Thu 1/5/23	No
2174	2174	4.33	4.33.3.2	6.3.9.1.27 Month 7 -- Submit Periodic Help Desk Report	0 days	Thu 1/5/23	Thu 1/5/23	No
2175	2175	4.33	4.33.3.3	6.3.9.1.28 Month 7 -- Submit Warranty Support Report	0 days	Thu 1/5/23	Thu 1/5/23	No
2176	2176	4.33	4.33.3.4	6.3.9.1.29 Month 7 -- Submit Periodic Operation Report	0 days	Thu 1/5/23	Thu 1/5/23	No
2177	2177	4.33		6.3.9.1.30 Maintain and Support Month 8	21 days	Fri 1/6/23	Mon 2/6/23	No
2178	2178	4.33	4.33.3.2	6.3.9.1.31 Month 8 -- Submit Periodic Help Desk Report	0 days	Mon 2/6/23	Mon 2/6/23	No
2179	2179	4.33	4.33.3.3	6.3.9.1.32 Month 8 -- Submit Warranty Support Report	0 days	Mon 2/6/23	Mon 2/6/23	No
2180	2180	4.33	4.33.3.4	6.3.9.1.33 Month 8 -- Submit Periodic Operation Report	0 days	Mon 2/6/23	Mon 2/6/23	No
2181	2181	4.33		6.3.9.1.34 Maintain and Support Month 9	20 days	Tue 2/7/23	Tue 3/7/23	No
2182	2182	4.33	4.33.3.2	6.3.9.1.35 Month 9 -- Submit Periodic Help Desk Report	0 days	Tue 3/7/23	Tue 3/7/23	No
2183	2183	4.33	4.33.3.3	6.3.9.1.36 Month 9 -- Submit Warranty Support Report	0 days	Tue 3/7/23	Tue 3/7/23	No
2184	2184	4.33	4.33.3.4	6.3.9.1.37 Month 9 -- Submit Periodic Operation Report	0 days	Tue 3/7/23	Tue 3/7/23	No
2185	2185	4.33		6.3.9.1.38 Maintain and Support Month 10	19 days	Wed 3/8/23	Mon 4/3/23	No
2186	2186	4.33	4.33.3.2	6.3.9.1.39 Month 10 -- Submit Periodic Help Desk Report	0 days	Mon 4/3/23	Mon 4/3/23	No
2187	2187	4.33	4.33.3.3	6.3.9.1.40 Month 10 -- Submit Warranty Support Report	0 days	Mon 4/3/23	Mon 4/3/23	No
2188	2188	4.33	4.33.3.4	6.3.9.1.41 Month 10 -- Submit Periodic Operation Report	0 days	Mon 4/3/23	Mon 4/3/23	No
2189	2189	4.33		6.3.9.1.42 Maintain and Support Month 11	23 days	Tue 4/4/23	Thu 5/4/23	No
2190	2190	4.33	4.33.3.2	6.3.9.1.43 Month 11 -- Submit Periodic Help Desk Report	0 days	Thu 5/4/23	Thu 5/4/23	No
2191	2191	4.33	4.33.3.3	6.3.9.1.44 Month 11 -- Submit Warranty Support Report	0 days	Thu 5/4/23	Thu 5/4/23	No
2192	2192	4.33	4.33.3.4	6.3.9.1.45 Month 11 -- Submit Periodic Operation Report	0 days	Thu 5/4/23	Thu 5/4/23	No
2193	2193	4.33		6.3.9.1.46 Maintain and Support Month 12	20 days	Fri 5/5/23	Fri 6/2/23	No
2194	2194	4.33	4.33.3.2	6.3.9.1.47 Month 12 -- Submit Periodic Help Desk Report	0 days	Fri 6/2/23	Fri 6/2/23	No
2195	2195	4.33	4.33.3.3	6.3.9.1.48 Month 12 -- Submit Warranty Support Report	0 days	Fri 6/2/23	Fri 6/2/23	No
2196	2196	4.33	4.33.3.4	6.3.9.1.49 Month 12 -- Submit Periodic Operation Report	0 days	Fri 6/2/23	Fri 6/2/23	No
2197	2197	4.33		6.3.9.1.50 Maintain and Support Month 13	22 days	Mon 6/5/23	Wed 7/5/23	No
2198	2198	4.33	4.33.3.2	6.3.9.1.51 Month 13 -- Submit Periodic Help Desk Report	0 days	Wed 7/5/23	Wed 7/5/23	No
2199	2199	4.33	4.33.3.3	6.3.9.1.52 Month 13 -- Submit Warranty Support Report	0 days	Wed 7/5/23	Wed 7/5/23	No
2200	2200	4.33	4.33.3.4	6.3.9.1.53 Month 13 -- Submit Periodic Operation Report	0 days	Wed 7/5/23	Wed 7/5/23	No
2201	2201	4.33		6.3.9.1.54 Maintain and Support Month 14	22 days	Thu 7/6/23	Fri 8/4/23	No
2202	2202	4.33	4.33.3.2	6.3.9.1.55 Month 14 -- Submit Periodic Help Desk Report	0 days	Fri 8/4/23	Fri 8/4/23	No
2203	2203	4.33	4.33.3.3	6.3.9.1.56 Month 14 -- Submit Warranty Support Report	0 days	Fri 8/4/23	Fri 8/4/23	No
2204	2204	4.33	4.33.3.4	6.3.9.1.57 Month 14 -- Submit Periodic Operation Report	0 days	Fri 8/4/23	Fri 8/4/23	No
2205	2205	4.33		6.3.9.1.58 Maintain and Support Month 15	20 days	Mon 8/7/23	Fri 9/1/23	No
2206	2206	4.33	4.33.3.2	6.3.9.1.59 Month 15 -- Submit Periodic Help Desk Report	0 days	Fri 9/1/23	Fri 9/1/23	No
2207	2207	4.33	4.33.3.3	6.3.9.1.60 Month 15 -- Submit Warranty Support Report	0 days	Fri 9/1/23	Fri 9/1/23	No
2208	2208	4.33	4.33.3.4	6.3.9.1.61 Month 15 -- Submit Periodic Operation Report	0 days	Fri 9/1/23	Fri 9/1/23	No



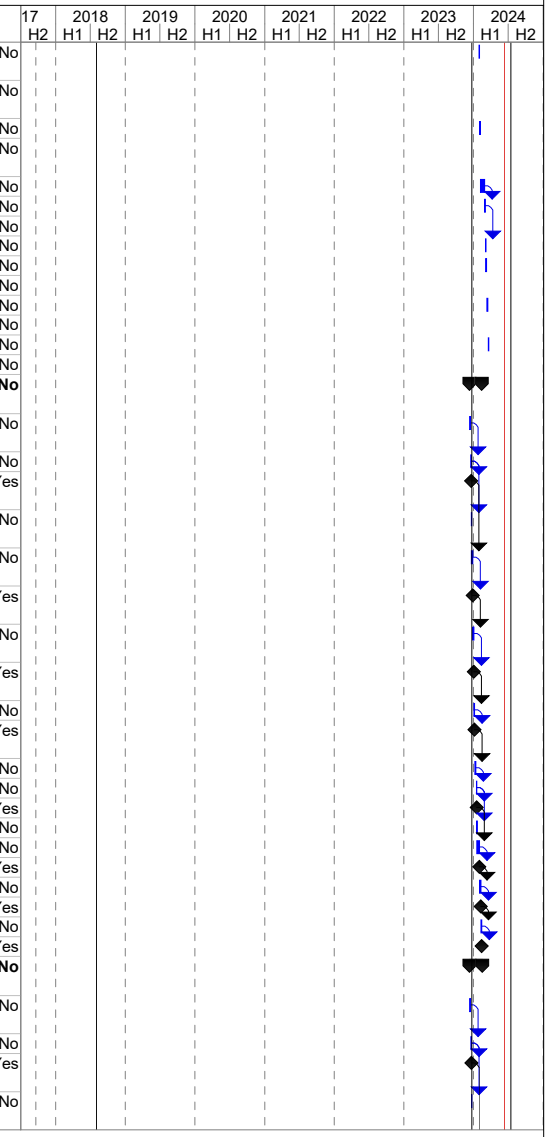
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2209	2209	4.33		6.3.9.1.62 Maintain and Support Month 16	23 days	Tue 9/5/23	Thu 10/5/23	No
2210	2210	4.33	4.33.3.2	6.3.9.1.63 Month 16 -- Submit Periodic Help Desk Report	0 days	Thu 10/5/23	Thu 10/5/23	No
2211	2211	4.33	4.33.3.3	6.3.9.1.64 Month 16 -- Submit Warranty Support Report	0 days	Thu 10/5/23	Thu 10/5/23	No
2212	2212	4.33	4.33.3.4	6.3.9.1.65 Month 16 -- Submit Periodic Operation Report	0 days	Thu 10/5/23	Thu 10/5/23	No
2213	2213	4.33		6.3.9.1.66 Maintain and Support Month 17	20 days	Fri 10/6/23	Fri 11/3/23	No
2214	2214	4.33	4.33.3.2	6.3.9.1.67 Month 17 -- Submit Periodic Help Desk Report	0 days	Fri 11/3/23	Fri 11/3/23	No
2215	2215	4.33	4.33.3.3	6.3.9.1.68 Month 17 -- Submit Warranty Support Report	0 days	Fri 11/3/23	Fri 11/3/23	No
2216	2216	4.33	4.33.3.4	6.3.9.1.69 Month 17 -- Submit Periodic Operation Report	0 days	Fri 11/3/23	Fri 11/3/23	No
2217	2217	4.33		6.3.9.1.70 Maintain and Support Month 18	21 days	Mon 11/6/23	Fri 12/8/23	No
2218	2218	4.33	4.33.3.2	6.3.9.1.71 Month 18 -- Submit Periodic Help Desk Report	0 days	Fri 12/8/23	Fri 12/8/23	No
2219	2219	4.33	4.33.3.3	6.3.9.1.72 Month 18 -- Submit Warranty Support Report	0 days	Fri 12/8/23	Fri 12/8/23	No
2220	2220	4.33	4.33.3.4	6.3.9.1.73 Month 18 -- Submit Periodic Operation Report	0 days	Fri 12/8/23	Fri 12/8/23	No
2221	2221	4.33		6.3.9.1.74 Maintain and Support Month 19	18 days	Mon 12/11/23	Fri 1/5/24	No
2222	2222	4.33	4.33.3.2	6.3.9.1.75 Month 19 -- Submit Periodic Help Desk Report	0 days	Fri 1/5/24	Fri 1/5/24	No
2223	2223	4.33	4.33.3.3	6.3.9.1.76 Month 19 -- Submit Warranty Support Report	0 days	Fri 1/5/24	Fri 1/5/24	No
2224	2224	4.33	4.33.3.4	6.3.9.1.77 Month 19 -- Submit Periodic Operation Report	0 days	Fri 1/5/24	Fri 1/5/24	No
2225	2225	4.33		6.3.9.1.78 Maintain and Support Month 20	20 days	Mon 1/8/24	Mon 2/5/24	No
2226	2226	4.33	4.33.3.2	6.3.9.1.79 Month 20 -- Submit Periodic Help Desk Report	0 days	Mon 2/5/24	Mon 2/5/24	No
2227	2227	4.33	4.33.3.3	6.3.9.1.80 Month 20 -- Submit Warranty Support Report	0 days	Mon 2/5/24	Mon 2/5/24	No
2228	2228	4.33	4.33.3.4	6.3.9.1.81 Month 20 -- Submit Periodic Operation Report	0 days	Mon 2/5/24	Mon 2/5/24	No
2229	2229	4.33		6.3.9.1.82 Maintain and Support Month 21	21 days	Tue 2/6/24	Wed 3/6/24	No
2230	2230	4.33	4.33.3.2	6.3.9.1.83 Month 21 -- Submit Periodic Help Desk Report	0 days	Wed 3/6/24	Wed 3/6/24	No
2231	2231	4.33	4.33.3.3	6.3.9.1.84 Month 21 -- Submit Warranty Support Report	0 days	Wed 3/6/24	Wed 3/6/24	No
2232	2232	4.33	4.33.3.4	6.3.9.1.85 Month 21 -- Submit Periodic Operation Report	0 days	Wed 3/6/24	Wed 3/6/24	No
2233	2233	4.33		6.3.9.1.86 Maintain and Support Month 22	20 days	Thu 3/7/24	Wed 4/3/24	No
2234	2234	4.33	4.33.3.2	6.3.9.1.87 Month 22 -- Submit Periodic Help Desk Report	0 days	Wed 4/3/24	Wed 4/3/24	No
2235	2235	4.33	4.33.3.3	6.3.9.1.88 Month 22 -- Submit Warranty Support Report	0 days	Wed 4/3/24	Wed 4/3/24	No
2236	2236	4.33	4.33.3.4	6.3.9.1.89 Month 22 -- Submit Periodic Operation Report	0 days	Wed 4/3/24	Wed 4/3/24	No
2237	2237	4.33		6.3.9.1.90 Maintain and Support Month 23	21 days	Thu 4/4/24	Thu 5/2/24	No
2238	2238	4.33	4.33.3.2	6.3.9.1.91 Month 23 -- Submit Periodic Help Desk Report	0 days	Thu 5/2/24	Thu 5/2/24	No
2239	2239	4.33	4.33.3.3	6.3.9.1.92 Month 23 -- Submit Warranty Support Report	0 days	Thu 5/2/24	Thu 5/2/24	No
2240	2240	4.33	4.33.3.4	6.3.9.1.93 Month 23 -- Submit Periodic Operation Report	0 days	Thu 5/2/24	Thu 5/2/24	No
2241	**2241**	**4.33**	**4.33.3.5**	**6.3.9.2 DELIVERABLE: Maintenance Transition Report**	**20 days**	**Tue 3/12/24**	**Mon 4/8/24**	**No**
2242	2242	4.33.1	4.33.3.5	6.3.9.2.1 Develop Maintenance Transition Report	5 days	Tue 3/12/24	Mon 3/18/24	No
2243	2243	4.33.2	4.33.3.5	6.3.9.2.2 QA Deliverable	2 days	Tue 3/19/24	Wed 3/20/24	No
2244	2244	4.38.2	4.33.3.5	6.3.9.2.3 Submit Maintenance Transition Report	0 days	Wed 3/20/24	Wed 3/20/24	No
2245	2245	4.38.1	4.33.3.5	6.3.9.2.4 Conduct Walk-through for Maintenance Transition Report	2 days	Thu 3/21/24	Fri 3/22/24	No
2246	2246	4.33.3	4.33.3.5	6.3.9.2.5 Review Maintenance Transition Report	5 days	Thu 3/21/24	Wed 3/27/24	No
2247	2247	4.33.3	4.33.3.5	6.3.9.2.6 Provide Feedback on Maintenance Transition Report	0 days	Wed 3/27/24	Wed 3/27/24	No
2248	2248	4.33.2	4.33.3.5	6.3.9.2.7 Incorporate Feedback on Maintenance Transition Report	5 days	Thu 3/28/24	Wed 4/3/24	No
2249	2249	4.38.2	4.33.3.5	6.3.9.2.8 Submit Final Maintenance Transition Report	0 days	Wed 4/3/24	Wed 4/3/24	No
2250	2250	4.33.3	4.33.3.5	6.3.9.2.9 Review and Verify Maintenance Transition Report	3 days	Thu 4/4/24	Mon 4/8/24	No
2251	2251	4.33.1	4.33.3.5	6.3.9.2.10 Approve Maintenance Transition Report	0 days	Mon 4/8/24	Mon 4/8/24	No
2252	2252	4.33		6.3.10 Maintain and Operate Complete	0 days	Fri 5/31/24	Fri 5/31/24	Yes
2253	**2253**	**1.2.1.4**		**6.4 Close Out**	**129 days**	**Mon 12/11/23**	**Thu 6/13/24**	**No**
2254	**2254**	**4.33**	**4.33.3.6**	**6.4.1 DELIVERABLE: Warranty Completion Report**	**51 days**	**Mon 1/8/24**	**Wed 3/20/24**	**No**
2255	2255	4.33.1	4.33.3.6	6.4.1.1 Develop Deliverable Expectation Document for Warranty Completion F	5 days	Mon 1/8/24	Fri 1/12/24	No
2256	2256	4.33.2	4.33.3.6	6.4.1.2 QA Deliverable Expectation Document	4 days	Tue 1/16/24	Fri 1/19/24	No
2257	2257	4.38.2	4.33.3.6	6.4.1.3 Submit Deliverable Expectation Document for Warranty Completion Report	0 days	Fri 1/19/24	Fri 1/19/24	No
2258	2258	4.38.1	4.33.3.6	6.4.1.4 Conduct Walk-through for Deliverable Expectation Document for Warranty Completion Report	2 days	Mon 1/22/24	Tue 1/23/24	No
2259	2259	4.33.3	4.33.3.6	6.4.1.5 Review Deliverable Expectation Document for Warranty Completion Report	5 days	Mon 1/22/24	Fri 1/26/24	No
2260	2260	4.33.3	4.33.3.6	6.4.1.6 Provide Feedback on Deliverable Expectation Document for Warranty Completion Report	0 days	Fri 1/26/24	Fri 1/26/24	No



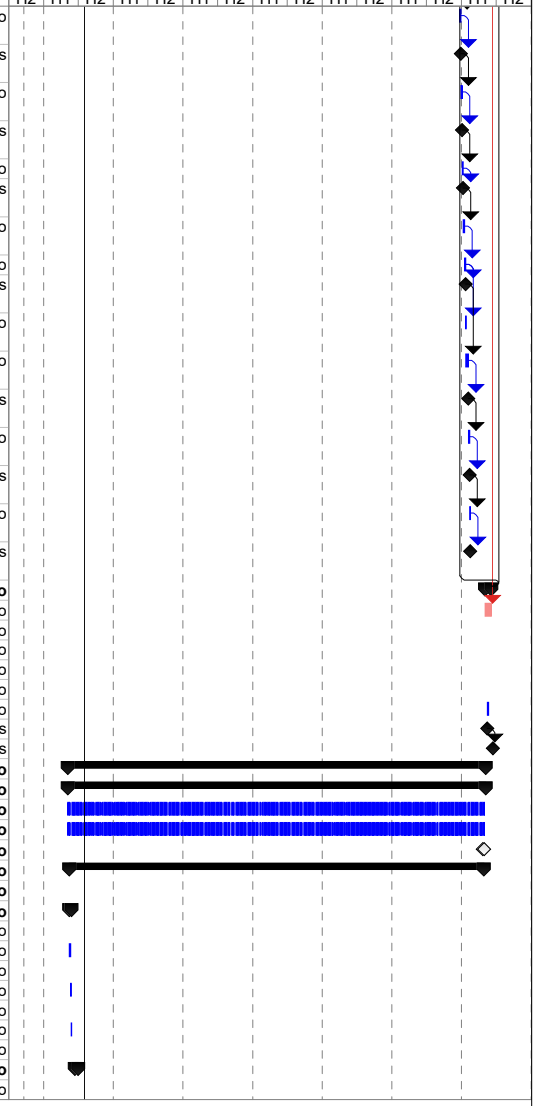
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2261	2261	4.33.2	4.33.3.6	6.4.1.7 Incorporate Feedback on Deliverable Expectation Document for Warranty Completion Report	3 days	Mon 1/29/24	Wed 1/31/24	No
2262	2262	4.38.2	4.33.3.6	6.4.1.8 Submit Final Version of Deliverable Expectation Document for Warranty Completion Report	0 days	Wed 1/31/24	Wed 1/31/24	No
2263	2263	4.33.3	4.33.3.6	6.4.1.9 Review and Verify Feedback	3 days	Thu 2/1/24	Mon 2/5/24	No
2264	2264	4.33.3	4.33.3.6	6.4.1.10 Approve Deliverable Expectation Document for Warranty Completion Report	0 days	Mon 2/5/24	Mon 2/5/24	No
2265	2265	4.33.1	4.33.3.6	6.4.1.11 Develop Warranty Completion Report	15 days	Tue 2/6/24	Tue 2/27/24	No
2266	2266	4.33.2	4.33.3.6	6.4.1.12 QA Deliverable	3 days	Wed 2/28/24	Fri 3/1/24	No
2267	2267	4.38.2	4.33.3.6	6.4.1.13 Submit Warranty Completion Report	0 days	Fri 3/1/24	Fri 3/1/24	No
2268	2268	4.38.1	4.33.3.6	6.4.1.14 Conduct Walk-through for Warranty Completion Report	2 days	Mon 3/4/24	Tue 3/5/24	No
2269	2269	4.33.3	4.33.3.6	6.4.1.15 Review Warranty Completion Report	5 days	Mon 3/4/24	Fri 3/8/24	No
2270	2270	4.33.3	4.33.3.6	6.4.1.16 Provide Feedback on Warranty Completion Report	0 days	Fri 3/8/24	Fri 3/8/24	No
2271	2271	4.33.2	4.33.3.6	6.4.1.17 Incorporate Feedback on Warranty Completion Report	5 days	Mon 3/11/24	Fri 3/15/24	No
2272	2272	4.38.2	4.33.3.6	6.4.1.18 Submit Final Warranty Completion Report	0 days	Fri 3/15/24	Fri 3/15/24	No
2273	2273	4.33.3	4.33.3.6	6.4.1.19 Review and Verify Warranty Completion Report	3 days	Mon 3/18/24	Wed 3/20/24	No
2274	2274	4.33.1	4.33.3.6	6.4.1.20 Approve Warranty Completion Report	0 days	Wed 3/20/24	Wed 3/20/24	No
2275	**2275**	**4.24**	**4.24.3.2**	**6.4.2 DELIVERABLE: Successful Execution of the Maintenance Transition Plan**	**43 days**	**Mon 12/11/23**	**Mon 2/12/24**	**No**
2276	2276	4.24.1	4.24.3.2	6.4.2.1 Develop Deliverable Expectation Document for Maintenance Transition Plan	5 days	Mon 12/11/23	Fri 12/15/23	No
2277	2277	4.24.2	4.24.3.2	6.4.2.2 QA Deliverable Expectation Document	2 days	Mon 12/18/23	Tue 12/19/23	No
2278	2278	4.38.2	4.24.3.2	6.4.2.3 Submit Deliverable Expectation Document for Maintenance Transition Plan	0 days	Tue 12/19/23	Tue 12/19/23	Yes
2279	2279	4.38.1	4.24.3.2	6.4.2.4 Conduct Walk-through for Deliverable Expectation Document for Maintenance Transition Plan	2 days	Wed 12/20/23	Thu 12/21/23	No
2280	2280	4.24.3	4.24.3.2	6.4.2.5 Review Deliverable Expectation Document for Maintenance Transition Plan	5 days	Wed 12/20/23	Wed 12/27/23	No
2281	2281	4.24.3	4.24.3.2	6.4.2.6 Provide Feedback on Deliverable Expectation Document for Maintenance Transition Plan	0 days	Wed 12/27/23	Wed 12/27/23	Yes
2282	2282	4.24.2	4.24.3.2	6.4.2.7 Incorporate Feedback on Deliverable Expectation Document for Maintenance Transition Plan	3 days	Thu 12/28/23	Tue 1/2/24	No
2283	2283	4.38.2	4.24.3.2	6.4.2.8 Submit Final Version of Deliverable Expectation Document for Maintenance Transition Plan	0 days	Tue 1/2/24	Tue 1/2/24	Yes
2284	2284	4.24.3	4.24.3.2	6.4.2.9 Review and Verify Feedback	3 days	Wed 1/3/24	Fri 1/5/24	No
2285	2285	4.24.3	4.24.3.2	6.4.2.10 Approve Deliverable Expectation Document for Maintenance Transition Plan	0 days	Fri 1/5/24	Fri 1/5/24	Yes
2286	2286	4.24.1	4.24.3.2	6.4.2.11 Develop Maintenance Transition Plan	5 days	Mon 1/8/24	Fri 1/12/24	No
2287	2287	4.24.2	4.24.3.2	6.4.2.12 QA Deliverable	2 days	Tue 1/16/24	Wed 1/17/24	No
2288	2288	4.38.2	4.24.3.2	6.4.2.13 Submit Maintenance Transition Plan	0 days	Wed 1/17/24	Wed 1/17/24	Yes
2289	2289	4.38.1	4.24.3.2	6.4.2.14 Conduct Walk-through for Maintenance Transition Plan	2 days	Thu 1/18/24	Fri 1/19/24	No
2290	2290	4.24.3	4.24.3.2	6.4.2.15 Review Maintenance Transition Plan	10 days	Thu 1/18/24	Wed 1/31/24	No
2291	2291	4.24.3	4.24.3.2	6.4.2.16 Provide Feedback on Maintenance Transition Plan	0 days	Wed 1/31/24	Wed 1/31/24	Yes
2292	2292	4.24.2	4.24.3.2	6.4.2.17 Incorporate Feedback on Maintenance Transition Plan	5 days	Thu 2/1/24	Wed 2/7/24	No
2293	2293	4.38.2	4.24.3.2	6.4.2.18 Submit Final Version of Maintenance Transition Plan	0 days	Wed 2/7/24	Wed 2/7/24	Yes
2294	2294	4.24.3	4.24.3.2	6.4.2.19 Review and Verify Maintenance Transition Plan	3 days	Thu 2/8/24	Mon 2/12/24	No
2295	2295	4.24.1	4.24.3.2	6.4.2.20 Approve Maintenance Transition Plan	0 days	Mon 2/12/24	Mon 2/12/24	Yes
2296	**2296**	**4.35**	**4.35.3.2**	**6.4.3 DELIVERABLE: Successful Execution of the Knowledge Transfer Plan and Procedures**	**46 days**	**Mon 12/11/23**	**Thu 2/15/24**	**No**
2297	2297	4.35.1	4.35.3.2	6.4.3.1 Develop Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	5 days	Mon 12/11/23	Fri 12/15/23	No
2298	2298	4.35.2	4.35.3.2	6.4.3.2 QA Deliverable Expectation Document	3 days	Mon 12/18/23	Wed 12/20/23	No
2299	2299	4.38.2	4.35.3.2	6.4.3.3 Submit Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Wed 12/20/23	Wed 12/20/23	Yes
2300	2300	4.38.1	4.35.3.2	6.4.3.4 Conduct Walk-through for Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	2 days	Thu 12/21/23	Fri 12/22/23	No



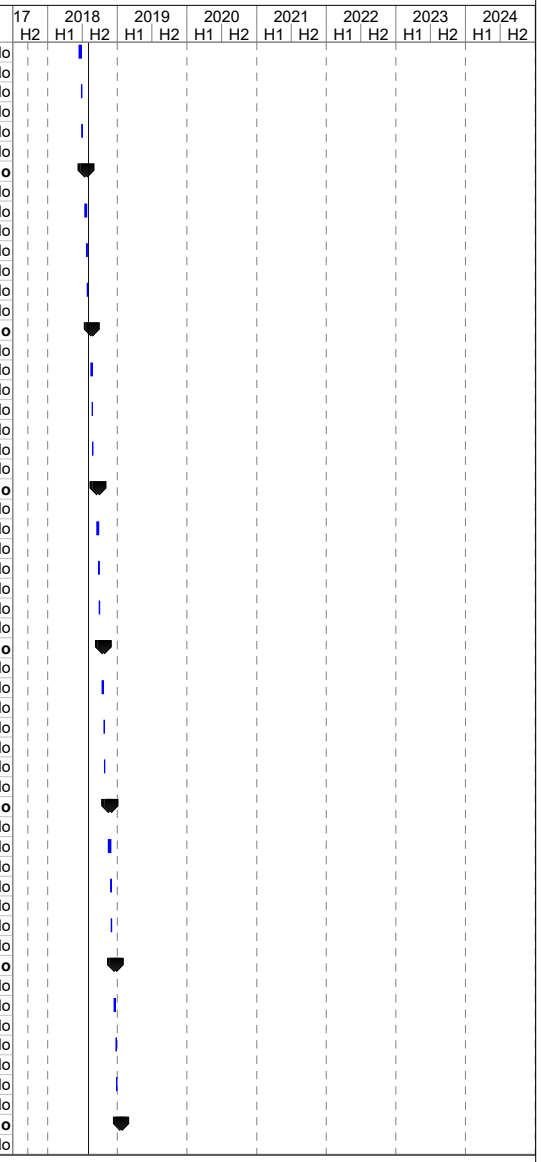
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
2301	2301	4.35.3	4.35.3.2	6.4.3.5 Review Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	5 days	Thu 12/21/23	Thu 12/28/23	No
2302	2302	4.35.3	4.35.3.2	6.4.3.6 Provide Feedback on Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Thu 12/28/23	Thu 12/28/23	Yes
2303	2303	4.35.2	4.35.3.2	6.4.3.7 Incorporate Feedback on Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	3 days	Fri 12/29/23	Wed 1/3/24	No
2304	2304	4.38.2	4.35.3.2	6.4.3.8 Submit Final Version of Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Wed 1/3/24	Wed 1/3/24	Yes
2305	2305	4.35.3	4.35.3.2	6.4.3.9 Review and Verify Feedback	3 days	Thu 1/4/24	Mon 1/8/24	No
2306	2306	4.35.3	4.35.3.2	6.4.3.10 Approve Deliverable Expectation Document for Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Mon 1/8/24	Mon 1/8/24	Yes
2307	2307	4.35.1	4.35.3.2	6.4.3.11 Develop Successful Execution of Knowledge Transfer Plan and Procedures	5 days	Tue 1/9/24	Tue 1/16/24	No
2308	2308	4.35.2	4.35.3.2	6.4.3.12 QA Deliverable	4 days	Wed 1/17/24	Mon 1/22/24	No
2309	2309	4.38.2	4.35.3.2	6.4.3.13 Submit Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Mon 1/22/24	Mon 1/22/24	Yes
2310	2310	4.38.1	4.35.3.2	6.4.3.14 Conduct Walk-through for Successful Execution of Knowledge Transfer Plan and Procedures	2 days	Tue 1/23/24	Wed 1/24/24	No
2311	2311	4.35.3	4.35.3.2	6.4.3.15 Review Successful Execution of Knowledge Transfer Plan and Procedures	10 days	Tue 1/23/24	Mon 2/5/24	No
2312	2312	4.35.3	4.35.3.2	6.4.3.16 Provide Feedback on Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Mon 2/5/24	Mon 2/5/24	Yes
2313	2313	4.35.2	4.35.3.2	6.4.3.17 Incorporate Feedback on Successful Execution of Knowledge Transfer Plan and Procedures	5 days	Tue 2/6/24	Mon 2/12/24	No
2314	2314	4.38.2	4.35.3.2	6.4.3.18 Submit Final Version of Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Mon 2/12/24	Mon 2/12/24	Yes
2315	2315	4.35.3	4.35.3.2	6.4.3.19 Review and Verify Feedback on Successful Execution of Knowledge Transfer Plan and Procedures	3 days	Tue 2/13/24	Thu 2/15/24	No
2316	2316	4.35.3	4.35.3.2	6.4.3.20 Approve Successful Execution of Knowledge Transfer Plan and Procedures	0 days	Thu 2/15/24	Thu 2/15/24	Yes
2317	**2317**	**4.3**		**6.4.4 Other Close Out Activities**	**22 days**	**Fri 5/3/24**	**Tue 6/4/24**	**No**
2318	2318	4.3		6.4.4.1 Maintain and Support Month 24	22 days	Fri 5/3/24	Tue 6/4/24	No
2319	2319	4.33	4.33.3.2	6.4.4.2 Month 24 -- Submit Periodic Help Desk Report	0 days	Tue 6/4/24	Tue 6/4/24	No
2320	2320	4.33	4.33.3.3	6.4.4.3 Month 24 -- Submit Warranty Support Report	0 days	Tue 6/4/24	Tue 6/4/24	No
2321	2321	4.33	4.33.3.4	6.4.4.4 Month 24 -- Submit Periodic Operation Report	0 days	Tue 6/4/24	Tue 6/4/24	No
2322	2322	4.3		6.4.5 Close Work Plan	0 days	Tue 5/14/24	Tue 5/14/24	No
2323	2323	4.3		6.4.6 Close Project	5 days	Wed 5/15/24	Tue 5/21/24	No
2324	2324	4.3		6.4.7 Project Completed	0 days	Tue 5/14/24	Tue 5/14/24	Yes
2325	2325	4.3		6.4.8 Deloitte Internal Project Close	0 days	Thu 6/13/24	Thu 6/13/24	Yes
2326	**2326**	**1.2.1.4**		**7 Ongoing Project Management Activities**	**1499 days**	**Mon 5/7/18**	**Mon 5/6/24**	**No**
2327	**2327**	**4.6.2.2**		**7.1 Weekly Activities**	**1499 days**	**Mon 5/7/18**	**Mon 5/6/24**	**No**
2328	**2328**	**4.6.2.2**	**4.6.3.2**	**7.1.1 Submit Weekly Status Report**	**1499 days**	**Mon 5/7/18**	**Mon 5/6/24**	**No**
3268	**3268**	**4.5**		**7.1.2 Weekly Schedule Review**	**1494 days**	**Mon 5/7/18**	**Mon 4/29/24**	**No**
3582	**3582**	**4.6.2.1**		**7.1.3 Weekly Meetings and Minutes**	**1493 days**	**Mon 5/7/18**	**Mon 4/29/24**	**No**
3895	**3895**	**4.6.2.3**		**7.2 Monthly Activities**	**1488 days**	**Mon 5/14/18**	**Fri 4/26/24**	**No**
3896	**3896**	**4.6.2.3**	**4.6.3.3**	**7.2.1 Monthly Status Reports**	**1488 days**	**Mon 5/14/18**	**Fri 4/26/24**	**No**
3897	**3897**	**4.6.2.3**	**4.6.3.3**	**7.2.1.1 Monthly Status Reports 1**	**10 days**	**Mon 5/14/18**	**Fri 5/25/18**	**No**
3898	3898	4.6.3	4.6.3.3	7.2.1.1.1 Submit Monthly Status Report	0 days	Mon 5/14/18	Mon 5/14/18	No
3899	3899	4.6.3	4.6.3.3	7.2.1.1.2 Review Monthly Status Report	6 days	Mon 5/14/18	Mon 5/21/18	No
3900	3900	4.6.3	4.6.3.3	7.2.1.1.3 Provide Feedback on Monthly Status Report	0 days	Mon 5/21/18	Mon 5/21/18	No
3901	3901	4.6.2.3	4.6.3.3	7.2.1.1.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 5/22/18	Wed 5/23/18	No
3902	3902	4.6.3	4.6.3.3	7.2.1.1.5 Submit Final Version of Monthly Status Report	0 days	Wed 5/23/18	Wed 5/23/18	No
3903	3903	4.6.2.3	4.6.3.3	7.2.1.1.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 5/24/18	Fri 5/25/18	No
3904	3904	4.6.2.3	4.6.3.3	7.2.1.1.7 Approve Monthly Status Report	0 days	Fri 5/25/18	Fri 5/25/18	No
3905	**3905**	**4.6.2.3**	**4.6.3.3**	**7.2.1.2 Monthly Status Reports 2**	**13 days**	**Wed 6/13/18**	**Fri 6/29/18**	**No**
3906	3906	4.6.3	4.6.3.3	7.2.1.2.1 Submit Monthly Status Report	0 days	Wed 6/13/18	Wed 6/13/18	No



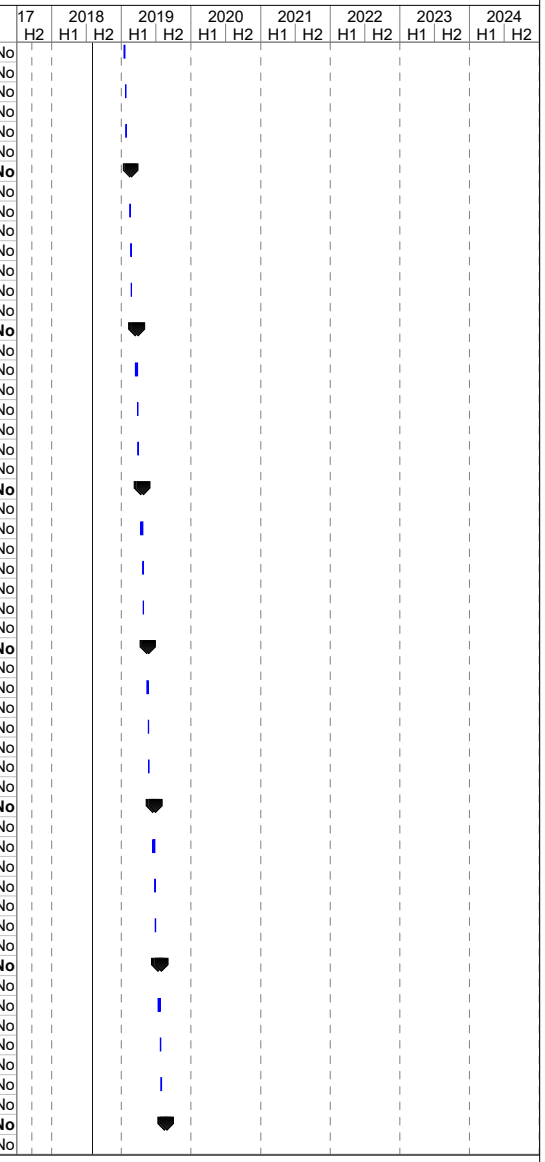
Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
3907	3907	4.6.3	4.6.3.3	7.2.1.2.2 Review Monthly Status Report	9 days	Wed 6/13/18	Mon 6/25/18	No
3908	3908	4.6.3	4.6.3.3	7.2.1.2.3 Provide Feedback on Monthly Status Report	0 days	Mon 6/25/18	Mon 6/25/18	No
3909	3909	4.6.2.3	4.6.3.3	7.2.1.2.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 6/26/18	Wed 6/27/18	No
3910	3910	4.6.3	4.6.3.3	7.2.1.2.5 Submit Final Version of Monthly Status Report	0 days	Wed 6/27/18	Wed 6/27/18	No
3911	3911	4.6.2.3	4.6.3.3	7.2.1.2.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 6/28/18	Fri 6/29/18	No
3912	3912	4.6.2.3	4.6.3.3	7.2.1.2.7 Approve Monthly Status Report	0 days	Fri 6/29/18	Fri 6/29/18	No
3913	**3913**	**4.6.2.3**	**4.6.3.3**	**7.2.1.3 Monthly Status Reports 3**	**11 days**	**Fri 7/13/18**	**Fri 7/27/18**	**No**
3914	3914	4.6.3	4.6.3.3	7.2.1.3.1 Submit Monthly Status Report	0 days	Fri 7/13/18	Fri 7/13/18	No
3915	3915	4.6.3	4.6.3.3	7.2.1.3.2 Review Monthly Status Report	7 days	Fri 7/13/18	Mon 7/23/18	No
3916	3916	4.6.3	4.6.3.3	7.2.1.3.3 Provide Feedback on Monthly Status Report	0 days	Mon 7/23/18	Mon 7/23/18	No
3917	3917	4.6.2.3	4.6.3.3	7.2.1.3.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 7/24/18	Wed 7/25/18	No
3918	3918	4.6.3	4.6.3.3	7.2.1.3.5 Submit Final Version of Monthly Status Report	0 days	Wed 7/25/18	Wed 7/25/18	No
3919	3919	4.6.2.3	4.6.3.3	7.2.1.3.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 7/26/18	Fri 7/27/18	No
3920	3920	4.6.2.3	4.6.3.3	7.2.1.3.7 Approve Monthly Status Report	0 days	Fri 7/27/18	Fri 7/27/18	No
3921	**3921**	**4.6.2.3**	**4.6.3.3**	**7.2.1.4 Monthly Status Reports 4**	**9 days**	**Tue 8/14/18**	**Fri 8/24/18**	**No**
3922	3922	4.6.3	4.6.3.3	7.2.1.4.1 Submit Monthly Status Report	0 days	Tue 8/14/18	Tue 8/14/18	No
3923	3923	4.6.3	4.6.3.3	7.2.1.4.2 Review Monthly Status Report	5 days	Tue 8/14/18	Mon 8/20/18	No
3924	3924	4.6.3	4.6.3.3	7.2.1.4.3 Provide Feedback on Monthly Status Report	0 days	Mon 8/20/18	Mon 8/20/18	No
3925	3925	4.6.2.3	4.6.3.3	7.2.1.4.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 8/21/18	Wed 8/22/18	No
3926	3926	4.6.3	4.6.3.3	7.2.1.4.5 Submit Final Version of Monthly Status Report	0 days	Wed 8/22/18	Wed 8/22/18	No
3927	3927	4.6.2.3	4.6.3.3	7.2.1.4.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 8/23/18	Fri 8/24/18	No
3928	3928	4.6.2.3	4.6.3.3	7.2.1.4.7 Approve Monthly Status Report	0 days	Fri 8/24/18	Fri 8/24/18	No
3929	**3929**	**4.6.2.3**	**4.6.3.3**	**7.2.1.5 Monthly Status Reports 5**	**11 days**	**Fri 9/14/18**	**Fri 9/28/18**	**No**
3930	3930	4.6.3	4.6.3.3	7.2.1.5.1 Submit Monthly Status Report	0 days	Fri 9/14/18	Fri 9/14/18	No
3931	3931	4.6.3	4.6.3.3	7.2.1.5.2 Review Monthly Status Report	7 days	Fri 9/14/18	Mon 9/24/18	No
3932	3932	4.6.3	4.6.3.3	7.2.1.5.3 Provide Feedback on Monthly Status Report	0 days	Mon 9/24/18	Mon 9/24/18	No
3933	3933	4.6.2.3	4.6.3.3	7.2.1.5.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 9/25/18	Wed 9/26/18	No
3934	3934	4.6.3	4.6.3.3	7.2.1.5.5 Submit Final Version of Monthly Status Report	0 days	Wed 9/26/18	Wed 9/26/18	No
3935	3935	4.6.2.3	4.6.3.3	7.2.1.5.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 9/27/18	Fri 9/28/18	No
3936	3936	4.6.2.3	4.6.3.3	7.2.1.5.7 Approve Monthly Status Report	0 days	Fri 9/28/18	Fri 9/28/18	No
3937	**3937**	**4.6.2.3**	**4.6.3.3**	**7.2.1.6 Monthly Status Reports 6**	**10 days**	**Fri 10/12/18**	**Thu 10/25/18**	**No**
3938	3938	4.6.3	4.6.3.3	7.2.1.6.1 Submit Monthly Status Report	0 days	Fri 10/12/18	Fri 10/12/18	No
3939	3939	4.6.3	4.6.3.3	7.2.1.6.2 Review Monthly Status Report	6 days	Fri 10/12/18	Fri 10/19/18	No
3940	3940	4.6.3	4.6.3.3	7.2.1.6.3 Provide Feedback on Monthly Status Report	0 days	Fri 10/19/18	Fri 10/19/18	No
3941	3941	4.6.2.3	4.6.3.3	7.2.1.6.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 10/22/18	Tue 10/23/18	No
3942	3942	4.6.3	4.6.3.3	7.2.1.6.5 Submit Final Version of Monthly Status Report	0 days	Tue 10/23/18	Tue 10/23/18	No
3943	3943	4.6.2.3	4.6.3.3	7.2.1.6.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 10/24/18	Thu 10/25/18	No
3944	3944	4.6.2.3	4.6.3.3	7.2.1.6.7 Approve Monthly Status Report	0 days	Thu 10/25/18	Thu 10/25/18	No
3945	**3945**	**4.6.2.3**	**4.6.3.3**	**7.2.1.7 Monthly Status Reports 7**	**11 days**	**Wed 11/14/18**	**Fri 11/30/18**	**No**
3946	3946	4.6.3	4.6.3.3	7.2.1.7.1 Submit Monthly Status Report	0 days	Wed 11/14/18	Wed 11/14/18	No
3947	3947	4.6.3	4.6.3.3	7.2.1.7.2 Review Monthly Status Report	7 days	Wed 11/14/18	Mon 11/26/18	No
3948	3948	4.6.3	4.6.3.3	7.2.1.7.3 Provide Feedback on Monthly Status Report	0 days	Mon 11/26/18	Mon 11/26/18	No
3949	3949	4.6.2.3	4.6.3.3	7.2.1.7.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 11/27/18	Wed 11/28/18	No
3950	3950	4.6.3	4.6.3.3	7.2.1.7.5 Submit Final Version of Monthly Status Report	0 days	Wed 11/28/18	Wed 11/28/18	No
3951	3951	4.6.2.3	4.6.3.3	7.2.1.7.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 11/29/18	Fri 11/30/18	No
3952	3952	4.6.2.3	4.6.3.3	7.2.1.7.7 Approve Monthly Status Report	0 days	Fri 11/30/18	Fri 11/30/18	No
3953	**3953**	**4.6.2.3**	**4.6.3.3**	**7.2.1.8 Monthly Status Reports 8**	**10 days**	**Fri 12/14/18**	**Fri 12/28/18**	**No**
3954	3954	4.6.3	4.6.3.3	7.2.1.8.1 Submit Monthly Status Report	0 days	Fri 12/14/18	Fri 12/14/18	No
3955	3955	4.6.3	4.6.3.3	7.2.1.8.2 Review Monthly Status Report	6 days	Fri 12/14/18	Fri 12/21/18	No
3956	3956	4.6.3	4.6.3.3	7.2.1.8.3 Provide Feedback on Monthly Status Report	0 days	Fri 12/21/18	Fri 12/21/18	No
3957	3957	4.6.2.3	4.6.3.3	7.2.1.8.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 12/24/18	Wed 12/26/18	No
3958	3958	4.6.3	4.6.3.3	7.2.1.8.5 Submit Final Version of Monthly Status Report	0 days	Wed 12/26/18	Wed 12/26/18	No
3959	3959	4.6.2.3	4.6.3.3	7.2.1.8.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 12/27/18	Fri 12/28/18	No
3960	3960	4.6.2.3	4.6.3.3	7.2.1.8.7 Approve Monthly Status Report	0 days	Fri 12/28/18	Fri 12/28/18	No
3961	**3961**	**4.6.2.3**	**4.6.3.3**	**7.2.1.9 Monthly Status Reports 9**	**9 days**	**Mon 1/14/19**	**Fri 1/25/19**	**No**
3962	3962	4.6.3	4.6.3.3	7.2.1.9.1 Submit Monthly Status Report	0 days	Mon 1/14/19	Mon 1/14/19	No



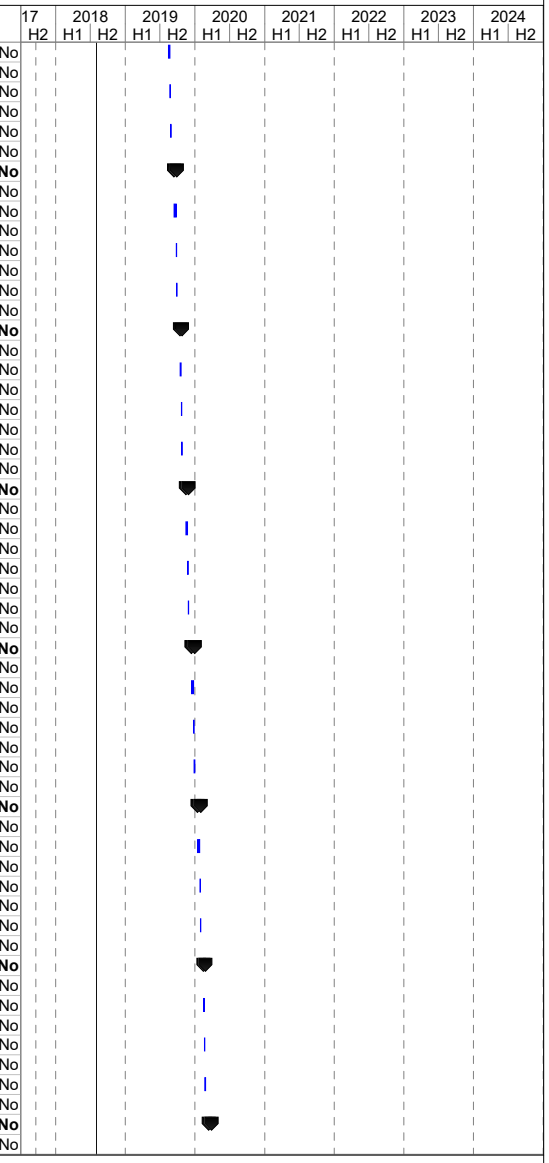
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
3963	3963	4.6.3	4.6.3.3	7.2.1.9.2 Review Monthly Status Report	5 days	Mon 1/14/19	Fri 1/18/19	No
3964	3964	4.6.3	4.6.3.3	7.2.1.9.3 Provide Feedback on Monthly Status Report	0 days	Fri 1/18/19	Fri 1/18/19	No
3965	3965	4.6.2.3	4.6.3.3	7.2.1.9.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 1/22/19	Wed 1/23/19	No
3966	3966	4.6.3	4.6.3.3	7.2.1.9.5 Submit Final Version of Monthly Status Report	0 days	Wed 1/23/19	Wed 1/23/19	No
3967	3967	4.6.2.3	4.6.3.3	7.2.1.9.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 1/24/19	Fri 1/25/19	No
3968	3968	4.6.2.3	4.6.3.3	7.2.1.9.7 Approve Monthly Status Report	0 days	Fri 1/25/19	Fri 1/25/19	No
3969	**3969**	**4.6.2.3**	**4.6.3.3**	**7.2.1.10 Monthly Status Reports 10**	**6 days**	**Thu 2/14/19**	**Fri 2/22/19**	**No**
3970	3970	4.6.3	4.6.3.3	7.2.1.10.1 Submit Monthly Status Report	0 days	Thu 2/14/19	Thu 2/14/19	No
3971	3971	4.6.3	4.6.3.3	7.2.1.10.2 Review Monthly Status Report	2 days	Thu 2/14/19	Fri 2/15/19	No
3972	3972	4.6.3	4.6.3.3	7.2.1.10.3 Provide Feedback on Monthly Status Report	0 days	Fri 2/15/19	Fri 2/15/19	No
3973	3973	4.6.2.3	4.6.3.3	7.2.1.10.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 2/19/19	Wed 2/20/19	No
3974	3974	4.6.3	4.6.3.3	7.2.1.10.5 Submit Final Version of Monthly Status Report	0 days	Wed 2/20/19	Wed 2/20/19	No
3975	3975	4.6.2.3	4.6.3.3	7.2.1.10.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 2/21/19	Fri 2/22/19	No
3976	3976	4.6.2.3	4.6.3.3	7.2.1.10.7 Approve Monthly Status Report	0 days	Fri 2/22/19	Fri 2/22/19	No
3977	**3977**	**4.6.2.3**	**4.6.3.3**	**7.2.1.11 Monthly Status Reports 11**	**12 days**	**Thu 3/14/19**	**Fri 3/29/19**	**No**
3978	3978	4.6.3	4.6.3.3	7.2.1.11.1 Submit Monthly Status Report	0 days	Thu 3/14/19	Thu 3/14/19	No
3979	3979	4.6.3	4.6.3.3	7.2.1.11.2 Review Monthly Status Report	8 days	Thu 3/14/19	Mon 3/25/19	No
3980	3980	4.6.3	4.6.3.3	7.2.1.11.3 Provide Feedback on Monthly Status Report	0 days	Mon 3/25/19	Mon 3/25/19	No
3981	3981	4.6.2.3	4.6.3.3	7.2.1.11.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 3/26/19	Wed 3/27/19	No
3982	3982	4.6.3	4.6.3.3	7.2.1.11.5 Submit Final Version of Monthly Status Report	0 days	Wed 3/27/19	Wed 3/27/19	No
3983	3983	4.6.2.3	4.6.3.3	7.2.1.11.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 3/28/19	Fri 3/29/19	No
3984	3984	4.6.2.3	4.6.3.3	7.2.1.11.7 Approve Monthly Status Report	0 days	Fri 3/29/19	Fri 3/29/19	No
3985	**3985**	**4.6.2.3**	**4.6.3.3**	**7.2.1.12 Monthly Status Reports 12**	**11 days**	**Fri 4/12/19**	**Fri 4/26/19**	**No**
3986	3986	4.6.3	4.6.3.3	7.2.1.12.1 Submit Monthly Status Report	0 days	Fri 4/12/19	Fri 4/12/19	No
3987	3987	4.6.3	4.6.3.3	7.2.1.12.2 Review Monthly Status Report	7 days	Fri 4/12/19	Mon 4/22/19	No
3988	3988	4.6.3	4.6.3.3	7.2.1.12.3 Provide Feedback on Monthly Status Report	0 days	Mon 4/22/19	Mon 4/22/19	No
3989	3989	4.6.2.3	4.6.3.3	7.2.1.12.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 4/23/19	Wed 4/24/19	No
3990	3990	4.6.3	4.6.3.3	7.2.1.12.5 Submit Final Version of Monthly Status Report	0 days	Wed 4/24/19	Wed 4/24/19	No
3991	3991	4.6.2.3	4.6.3.3	7.2.1.12.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 4/25/19	Fri 4/26/19	No
3992	3992	4.6.2.3	4.6.3.3	7.2.1.12.7 Approve Monthly Status Report	0 days	Fri 4/26/19	Fri 4/26/19	No
3993	**3993**	**4.6.2.3**	**4.6.3.3**	**7.2.1.13 Monthly Status Reports 13**	**9 days**	**Tue 5/14/19**	**Fri 5/24/19**	**No**
3994	3994	4.6.3	4.6.3.3	7.2.1.13.1 Submit Monthly Status Report	0 days	Tue 5/14/19	Tue 5/14/19	No
3995	3995	4.6.3	4.6.3.3	7.2.1.13.2 Review Monthly Status Report	5 days	Tue 5/14/19	Mon 5/20/19	No
3996	3996	4.6.3	4.6.3.3	7.2.1.13.3 Provide Feedback on Monthly Status Report	0 days	Mon 5/20/19	Mon 5/20/19	No
3997	3997	4.6.2.3	4.6.3.3	7.2.1.13.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 5/21/19	Wed 5/22/19	No
3998	3998	4.6.3	4.6.3.3	7.2.1.13.5 Submit Final Version of Monthly Status Report	0 days	Wed 5/22/19	Wed 5/22/19	No
3999	3999	4.6.2.3	4.6.3.3	7.2.1.13.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 5/23/19	Fri 5/24/19	No
4000	4000	4.6.2.3	4.6.3.3	7.2.1.13.7 Approve Monthly Status Report	0 days	Fri 5/24/19	Fri 5/24/19	No
4001	**4001**	**4.6.2.3**	**4.6.3.3**	**7.2.1.14 Monthly Status Reports 14**	**11 days**	**Fri 6/14/19**	**Fri 6/28/19**	**No**
4002	4002	4.6.3	4.6.3.3	7.2.1.14.1 Submit Monthly Status Report	0 days	Fri 6/14/19	Fri 6/14/19	No
4003	4003	4.6.3	4.6.3.3	7.2.1.14.2 Review Monthly Status Report	7 days	Fri 6/14/19	Mon 6/24/19	No
4004	4004	4.6.3	4.6.3.3	7.2.1.14.3 Provide Feedback on Monthly Status Report	0 days	Mon 6/24/19	Mon 6/24/19	No
4005	4005	4.6.2.3	4.6.3.3	7.2.1.14.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 6/25/19	Wed 6/26/19	No
4006	4006	4.6.3	4.6.3.3	7.2.1.14.5 Submit Final Version of Monthly Status Report	0 days	Wed 6/26/19	Wed 6/26/19	No
4007	4007	4.6.2.3	4.6.3.3	7.2.1.14.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 6/27/19	Fri 6/28/19	No
4008	4008	4.6.2.3	4.6.3.3	7.2.1.14.7 Approve Monthly Status Report	0 days	Fri 6/28/19	Fri 6/28/19	No
4009	**4009**	**4.6.2.3**	**4.6.3.3**	**7.2.1.15 Monthly Status Reports 15**	**12 days**	**Fri 7/12/19**	**Mon 7/29/19**	**No**
4010	4010	4.6.3	4.6.3.3	7.2.1.15.1 Submit Monthly Status Report	0 days	Fri 7/12/19	Fri 7/12/19	No
4011	4011	4.6.3	4.6.3.3	7.2.1.15.2 Review Monthly Status Report	8 days	Fri 7/12/19	Tue 7/23/19	No
4012	4012	4.6.3	4.6.3.3	7.2.1.15.3 Provide Feedback on Monthly Status Report	0 days	Tue 7/23/19	Tue 7/23/19	No
4013	4013	4.6.2.3	4.6.3.3	7.2.1.15.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 7/24/19	Thu 7/25/19	No
4014	4014	4.6.3	4.6.3.3	7.2.1.15.5 Submit Final Version of Monthly Status Report	0 days	Thu 7/25/19	Thu 7/25/19	No
4015	4015	4.6.2.3	4.6.3.3	7.2.1.15.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 7/26/19	Mon 7/29/19	No
4016	4016	4.6.2.3	4.6.3.3	7.2.1.15.7 Approve Monthly Status Report	0 days	Mon 7/29/19	Mon 7/29/19	No
4017	**4017**	**4.6.2.3**	**4.6.3.3**	**7.2.1.16 Monthly Status Reports 16**	**10 days**	**Wed 8/14/19**	**Tue 8/27/19**	**No**
4018	4018	4.6.3	4.6.3.3	7.2.1.16.1 Submit Monthly Status Report	0 days	Wed 8/14/19	Wed 8/14/19	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

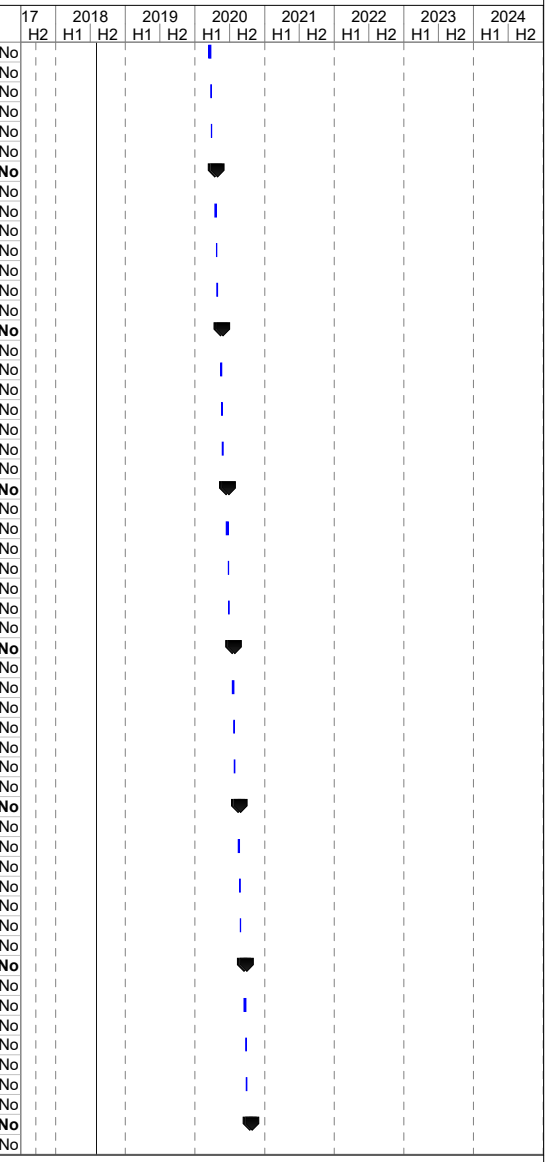
ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4019	4019	4.6.3	4.6.3.3	7.2.1.16.2 Review Monthly Status Report	6 days	Wed 8/14/19	Wed 8/21/19	No
4020	4020	4.6.3	4.6.3.3	7.2.1.16.3 Provide Feedback on Monthly Status Report	0 days	Wed 8/21/19	Wed 8/21/19	No
4021	4021	4.6.2.3	4.6.3.3	7.2.1.16.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 8/22/19	Fri 8/23/19	No
4022	4022	4.6.3	4.6.3.3	7.2.1.16.5 Submit Final Version of Monthly Status Report	0 days	Fri 8/23/19	Fri 8/23/19	No
4023	4023	4.6.2.3	4.6.3.3	7.2.1.16.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 8/26/19	Tue 8/27/19	No
4024	4024	4.6.2.3	4.6.3.3	7.2.1.16.7 Approve Monthly Status Report	0 days	Tue 8/27/19	Tue 8/27/19	No
4025	**4025**	**4.6.2.3**	**4.6.3.3**	**7.2.1.17 Monthly Status Reports 17**	**11 days**	**Fri 9/13/19**	**Fri 9/27/19**	**No**
4026	4026	4.6.3	4.6.3.3	7.2.1.17.1 Submit Monthly Status Report	0 days	Fri 9/13/19	Fri 9/13/19	No
4027	4027	4.6.3	4.6.3.3	7.2.1.17.2 Review Monthly Status Report	7 days	Fri 9/13/19	Mon 9/23/19	No
4028	4028	4.6.3	4.6.3.3	7.2.1.17.3 Provide Feedback on Monthly Status Report	0 days	Mon 9/23/19	Mon 9/23/19	No
4029	4029	4.6.2.3	4.6.3.3	7.2.1.17.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 9/24/19	Wed 9/25/19	No
4030	4030	4.6.3	4.6.3.3	7.2.1.17.5 Submit Final Version of Monthly Status Report	0 days	Wed 9/25/19	Wed 9/25/19	No
4031	4031	4.6.2.3	4.6.3.3	7.2.1.17.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 9/26/19	Fri 9/27/19	No
4032	4032	4.6.2.3	4.6.3.3	7.2.1.17.7 Approve Monthly Status Report	0 days	Fri 9/27/19	Fri 9/27/19	No
4033	**4033**	**4.6.2.3**	**4.6.3.3**	**7.2.1.18 Monthly Status Reports 18**	**9 days**	**Mon 10/14/19**	**Thu 10/24/19**	**No**
4034	4034	4.6.3	4.6.3.3	7.2.1.18.1 Submit Monthly Status Report	0 days	Mon 10/14/19	Mon 10/14/19	No
4035	4035	4.6.3	4.6.3.3	7.2.1.18.2 Review Monthly Status Report	5 days	Mon 10/14/19	Fri 10/18/19	No
4036	4036	4.6.3	4.6.3.3	7.2.1.18.3 Provide Feedback on Monthly Status Report	0 days	Fri 10/18/19	Fri 10/18/19	No
4037	4037	4.6.2.3	4.6.3.3	7.2.1.18.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 10/21/19	Tue 10/22/19	No
4038	4038	4.6.3	4.6.3.3	7.2.1.18.5 Submit Final Version of Monthly Status Report	0 days	Tue 10/22/19	Tue 10/22/19	No
4039	4039	4.6.2.3	4.6.3.3	7.2.1.18.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 10/23/19	Thu 10/24/19	No
4040	4040	4.6.2.3	4.6.3.3	7.2.1.18.7 Approve Monthly Status Report	0 days	Thu 10/24/19	Thu 10/24/19	No
4041	**4041**	**4.6.2.3**	**4.6.3.3**	**7.2.1.19 Monthly Status Reports 19**	**10 days**	**Thu 11/14/19**	**Wed 11/27/19**	**No**
4042	4042	4.6.3	4.6.3.3	7.2.1.19.1 Submit Monthly Status Report	0 days	Thu 11/14/19	Thu 11/14/19	No
4043	4043	4.6.3	4.6.3.3	7.2.1.19.2 Review Monthly Status Report	6 days	Thu 11/14/19	Thu 11/21/19	No
4044	4044	4.6.3	4.6.3.3	7.2.1.19.3 Provide Feedback on Monthly Status Report	0 days	Thu 11/21/19	Thu 11/21/19	No
4045	4045	4.6.2.3	4.6.3.3	7.2.1.19.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 11/22/19	Mon 11/25/19	No
4046	4046	4.6.3	4.6.3.3	7.2.1.19.5 Submit Final Version of Monthly Status Report	0 days	Mon 11/25/19	Mon 11/25/19	No
4047	4047	4.6.2.3	4.6.3.3	7.2.1.19.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 11/26/19	Wed 11/27/19	No
4048	4048	4.6.2.3	4.6.3.3	7.2.1.19.7 Approve Monthly Status Report	0 days	Wed 11/27/19	Wed 11/27/19	No
4049	**4049**	**4.6.2.3**	**4.6.3.3**	**7.2.1.20 Monthly Status Reports 20**	**11 days**	**Fri 12/13/19**	**Mon 12/30/19**	**No**
4050	4050	4.6.3	4.6.3.3	7.2.1.20.1 Submit Monthly Status Report	0 days	Fri 12/13/19	Fri 12/13/19	No
4051	4051	4.6.3	4.6.3.3	7.2.1.20.2 Review Monthly Status Report	7 days	Fri 12/13/19	Mon 12/23/19	No
4052	4052	4.6.3	4.6.3.3	7.2.1.20.3 Provide Feedback on Monthly Status Report	0 days	Mon 12/23/19	Mon 12/23/19	No
4053	4053	4.6.2.3	4.6.3.3	7.2.1.20.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 12/24/19	Thu 12/26/19	No
4054	4054	4.6.3	4.6.3.3	7.2.1.20.5 Submit Final Version of Monthly Status Report	0 days	Thu 12/26/19	Thu 12/26/19	No
4055	4055	4.6.2.3	4.6.3.3	7.2.1.20.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 12/27/19	Mon 12/30/19	No
4056	4056	4.6.2.3	4.6.3.3	7.2.1.20.7 Approve Monthly Status Report	0 days	Mon 12/30/19	Mon 12/30/19	No
4057	**4057**	**4.6.2.3**	**4.6.3.3**	**7.2.1.21 Monthly Status Reports 21**	**12 days**	**Tue 1/14/20**	**Thu 1/30/20**	**No**
4058	4058	4.6.3	4.6.3.3	7.2.1.21.1 Submit Monthly Status Report	0 days	Tue 1/14/20	Tue 1/14/20	No
4059	4059	4.6.3	4.6.3.3	7.2.1.21.2 Review Monthly Status Report	8 days	Tue 1/14/20	Fri 1/24/20	No
4060	4060	4.6.3	4.6.3.3	7.2.1.21.3 Provide Feedback on Monthly Status Report	0 days	Fri 1/24/20	Fri 1/24/20	No
4061	4061	4.6.2.3	4.6.3.3	7.2.1.21.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 1/27/20	Tue 1/28/20	No
4062	4062	4.6.3	4.6.3.3	7.2.1.21.5 Submit Final Version of Monthly Status Report	0 days	Tue 1/28/20	Tue 1/28/20	No
4063	4063	4.6.2.3	4.6.3.3	7.2.1.21.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 1/29/20	Thu 1/30/20	No
4064	4064	4.6.2.3	4.6.3.3	7.2.1.21.7 Approve Monthly Status Report	0 days	Thu 1/30/20	Thu 1/30/20	No
4065	**4065**	**4.6.2.3**	**4.6.3.3**	**7.2.1.22 Monthly Status Reports 22**	**6 days**	**Fri 2/14/20**	**Mon 2/24/20**	**No**
4066	4066	4.6.3	4.6.3.3	7.2.1.22.1 Submit Monthly Status Report	0 days	Fri 2/14/20	Fri 2/14/20	No
4067	4067	4.6.3	4.6.3.3	7.2.1.22.2 Review Monthly Status Report	2 days	Fri 2/14/20	Tue 2/18/20	No
4068	4068	4.6.3	4.6.3.3	7.2.1.22.3 Provide Feedback on Monthly Status Report	0 days	Tue 2/18/20	Tue 2/18/20	No
4069	4069	4.6.2.3	4.6.3.3	7.2.1.22.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 2/19/20	Thu 2/20/20	No
4070	4070	4.6.3	4.6.3.3	7.2.1.22.5 Submit Final Version of Monthly Status Report	0 days	Thu 2/20/20	Thu 2/20/20	No
4071	4071	4.6.2.3	4.6.3.3	7.2.1.22.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 2/21/20	Mon 2/24/20	No
4072	4072	4.6.2.3	4.6.3.3	7.2.1.22.7 Approve Monthly Status Report	0 days	Mon 2/24/20	Mon 2/24/20	No
4073	**4073**	**4.6.2.3**	**4.6.3.3**	**7.2.1.23 Monthly Status Reports 23**	**11 days**	**Fri 3/13/20**	**Fri 3/27/20**	**No**
4074	4074	4.6.3	4.6.3.3	7.2.1.23.1 Submit Monthly Status Report	0 days	Fri 3/13/20	Fri 3/13/20	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

Response to RFP 3462
Child Support Enforcement System Replacement
Design, Development, and Implementation Services

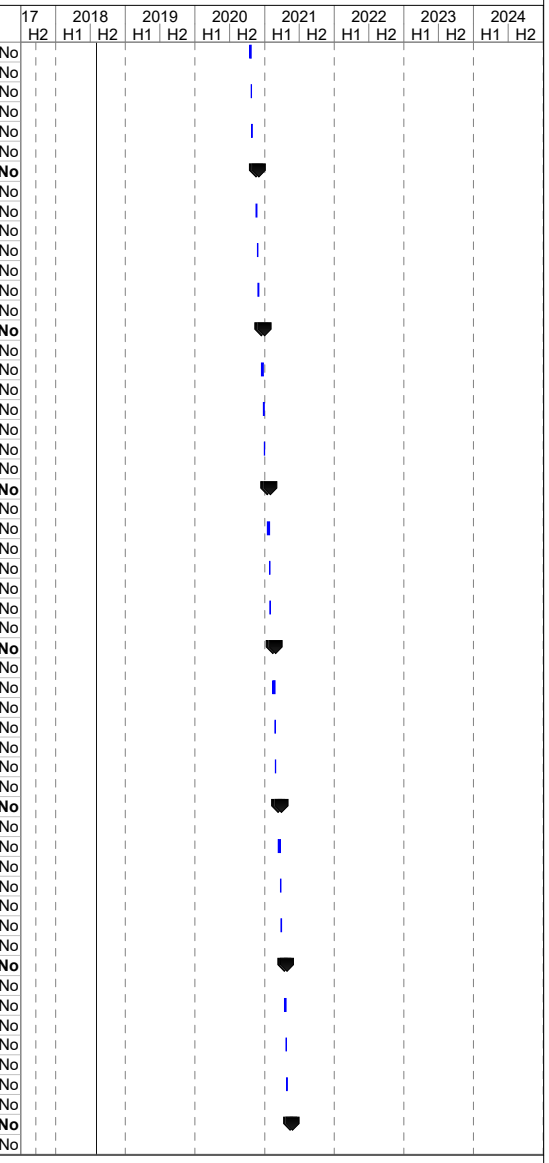
ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4075	4075	4.6.3	4.6.3.3	7.2.1.23.2 Review Monthly Status Report	7 days	Fri 3/13/20	Mon 3/23/20	No
4076	4076	4.6.3	4.6.3.3	7.2.1.23.3 Provide Feedback on Monthly Status Report	0 days	Mon 3/23/20	Mon 3/23/20	No
4077	4077	4.6.2.3	4.6.3.3	7.2.1.23.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 3/24/20	Wed 3/25/20	No
4078	4078	4.6.3	4.6.3.3	7.2.1.23.5 Submit Final Version of Monthly Status Report	0 days	Wed 3/25/20	Wed 3/25/20	No
4079	4079	4.6.2.3	4.6.3.3	7.2.1.23.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 3/26/20	Fri 3/27/20	No
4080	4080	4.6.2.3	4.6.3.3	7.2.1.23.7 Approve Monthly Status Report	0 days	Fri 3/27/20	Fri 3/27/20	No
4081	**4081**	**4.6.2.3**	**4.6.3.3**	**7.2.1.24 Monthly Status Reports 24**	**10 days**	**Tue 4/14/20**	**Mon 4/27/20**	**No**
4082	4082	4.6.3	4.6.3.3	7.2.1.24.1 Submit Monthly Status Report	0 days	Tue 4/14/20	Tue 4/14/20	No
4083	4083	4.6.3	4.6.3.3	7.2.1.24.2 Review Monthly Status Report	6 days	Tue 4/14/20	Tue 4/21/20	No
4084	4084	4.6.3	4.6.3.3	7.2.1.24.3 Provide Feedback on Monthly Status Report	0 days	Tue 4/21/20	Tue 4/21/20	No
4085	4085	4.6.2.3	4.6.3.3	7.2.1.24.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 4/22/20	Thu 4/23/20	No
4086	4086	4.6.3	4.6.3.3	7.2.1.24.5 Submit Final Version of Monthly Status Report	0 days	Thu 4/23/20	Thu 4/23/20	No
4087	4087	4.6.2.3	4.6.3.3	7.2.1.24.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 4/24/20	Mon 4/27/20	No
4088	4088	4.6.2.3	4.6.3.3	7.2.1.24.7 Approve Monthly Status Report	0 days	Mon 4/27/20	Mon 4/27/20	No
4089	**4089**	**4.6.2.3**	**4.6.3.3**	**7.2.1.25 Monthly Status Reports 25**	**8 days**	**Thu 5/14/20**	**Tue 5/26/20**	**No**
4090	4090	4.6.3	4.6.3.3	7.2.1.25.1 Submit Monthly Status Report	0 days	Thu 5/14/20	Thu 5/14/20	No
4091	4091	4.6.3	4.6.3.3	7.2.1.25.2 Review Monthly Status Report	4 days	Thu 5/14/20	Tue 5/19/20	No
4092	4092	4.6.3	4.6.3.3	7.2.1.25.3 Provide Feedback on Monthly Status Report	0 days	Tue 5/19/20	Tue 5/19/20	No
4093	4093	4.6.2.3	4.6.3.3	7.2.1.25.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 5/20/20	Thu 5/21/20	No
4094	4094	4.6.3	4.6.3.3	7.2.1.25.5 Submit Final Version of Monthly Status Report	0 days	Thu 5/21/20	Thu 5/21/20	No
4095	4095	4.6.2.3	4.6.3.3	7.2.1.25.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 5/22/20	Tue 5/26/20	No
4096	4096	4.6.2.3	4.6.3.3	7.2.1.25.7 Approve Monthly Status Report	0 days	Tue 5/26/20	Tue 5/26/20	No
4097	**4097**	**4.6.2.3**	**4.6.3.3**	**7.2.1.26 Monthly Status Reports 26**	**11 days**	**Fri 6/12/20**	**Fri 6/26/20**	**No**
4098	4098	4.6.3	4.6.3.3	7.2.1.26.1 Submit Monthly Status Report	0 days	Fri 6/12/20	Fri 6/12/20	No
4099	4099	4.6.3	4.6.3.3	7.2.1.26.2 Review Monthly Status Report	7 days	Fri 6/12/20	Mon 6/22/20	No
4100	4100	4.6.3	4.6.3.3	7.2.1.26.3 Provide Feedback on Monthly Status Report	0 days	Mon 6/22/20	Mon 6/22/20	No
4101	4101	4.6.2.3	4.6.3.3	7.2.1.26.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 6/23/20	Wed 6/24/20	No
4102	4102	4.6.3	4.6.3.3	7.2.1.26.5 Submit Final Version of Monthly Status Report	0 days	Wed 6/24/20	Wed 6/24/20	No
4103	4103	4.6.2.3	4.6.3.3	7.2.1.26.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 6/25/20	Fri 6/26/20	No
4104	4104	4.6.2.3	4.6.3.3	7.2.1.26.7 Approve Monthly Status Report	0 days	Fri 6/26/20	Fri 6/26/20	No
4105	**4105**	**4.6.2.3**	**4.6.3.3**	**7.2.1.27 Monthly Status Reports 27**	**10 days**	**Tue 7/14/20**	**Mon 7/27/20**	**No**
4106	4106	4.6.3	4.6.3.3	7.2.1.27.1 Submit Monthly Status Report	0 days	Tue 7/14/20	Tue 7/14/20	No
4107	4107	4.6.3	4.6.3.3	7.2.1.27.2 Review Monthly Status Report	6 days	Tue 7/14/20	Tue 7/21/20	No
4108	4108	4.6.3	4.6.3.3	7.2.1.27.3 Provide Feedback on Monthly Status Report	0 days	Tue 7/21/20	Tue 7/21/20	No
4109	4109	4.6.2.3	4.6.3.3	7.2.1.27.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 7/22/20	Thu 7/23/20	No
4110	4110	4.6.3	4.6.3.3	7.2.1.27.5 Submit Final Version of Monthly Status Report	0 days	Thu 7/23/20	Thu 7/23/20	No
4111	4111	4.6.2.3	4.6.3.3	7.2.1.27.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 7/24/20	Mon 7/27/20	No
4112	4112	4.6.2.3	4.6.3.3	7.2.1.27.7 Approve Monthly Status Report	0 days	Mon 7/27/20	Mon 7/27/20	No
4113	**4113**	**4.6.2.3**	**4.6.3.3**	**7.2.1.28 Monthly Status Reports 28**	**9 days**	**Fri 8/14/20**	**Wed 8/26/20**	**No**
4114	4114	4.6.3	4.6.3.3	7.2.1.28.1 Submit Monthly Status Report	0 days	Fri 8/14/20	Fri 8/14/20	No
4115	4115	4.6.3	4.6.3.3	7.2.1.28.2 Review Monthly Status Report	5 days	Fri 8/14/20	Thu 8/20/20	No
4116	4116	4.6.3	4.6.3.3	7.2.1.28.3 Provide Feedback on Monthly Status Report	0 days	Thu 8/20/20	Thu 8/20/20	No
4117	4117	4.6.2.3	4.6.3.3	7.2.1.28.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 8/21/20	Mon 8/24/20	No
4118	4118	4.6.3	4.6.3.3	7.2.1.28.5 Submit Final Version of Monthly Status Report	0 days	Mon 8/24/20	Mon 8/24/20	No
4119	4119	4.6.2.3	4.6.3.3	7.2.1.28.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 8/25/20	Wed 8/26/20	No
4120	4120	4.6.2.3	4.6.3.3	7.2.1.28.7 Approve Monthly Status Report	0 days	Wed 8/26/20	Wed 8/26/20	No
4121	**4121**	**4.6.2.3**	**4.6.3.3**	**7.2.1.29 Monthly Status Reports 29**	**11 days**	**Mon 9/14/20**	**Mon 9/28/20**	**No**
4122	4122	4.6.3	4.6.3.3	7.2.1.29.1 Submit Monthly Status Report	0 days	Mon 9/14/20	Mon 9/14/20	No
4123	4123	4.6.3	4.6.3.3	7.2.1.29.2 Review Monthly Status Report	7 days	Mon 9/14/20	Tue 9/22/20	No
4124	4124	4.6.3	4.6.3.3	7.2.1.29.3 Provide Feedback on Monthly Status Report	0 days	Tue 9/22/20	Tue 9/22/20	No
4125	4125	4.6.2.3	4.6.3.3	7.2.1.29.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 9/23/20	Thu 9/24/20	No
4126	4126	4.6.3	4.6.3.3	7.2.1.29.5 Submit Final Version of Monthly Status Report	0 days	Thu 9/24/20	Thu 9/24/20	No
4127	4127	4.6.2.3	4.6.3.3	7.2.1.29.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 9/25/20	Mon 9/28/20	No
4128	4128	4.6.2.3	4.6.3.3	7.2.1.29.7 Approve Monthly Status Report	0 days	Mon 9/28/20	Mon 9/28/20	No
4129	**4129**	**4.6.2.3**	**4.6.3.3**	**7.2.1.30 Monthly Status Reports 30**	**9 days**	**Wed 10/14/20**	**Mon 10/26/20**	**No**
4130	4130	4.6.3	4.6.3.3	7.2.1.30.1 Submit Monthly Status Report	0 days	Wed 10/14/20	Wed 10/14/20	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

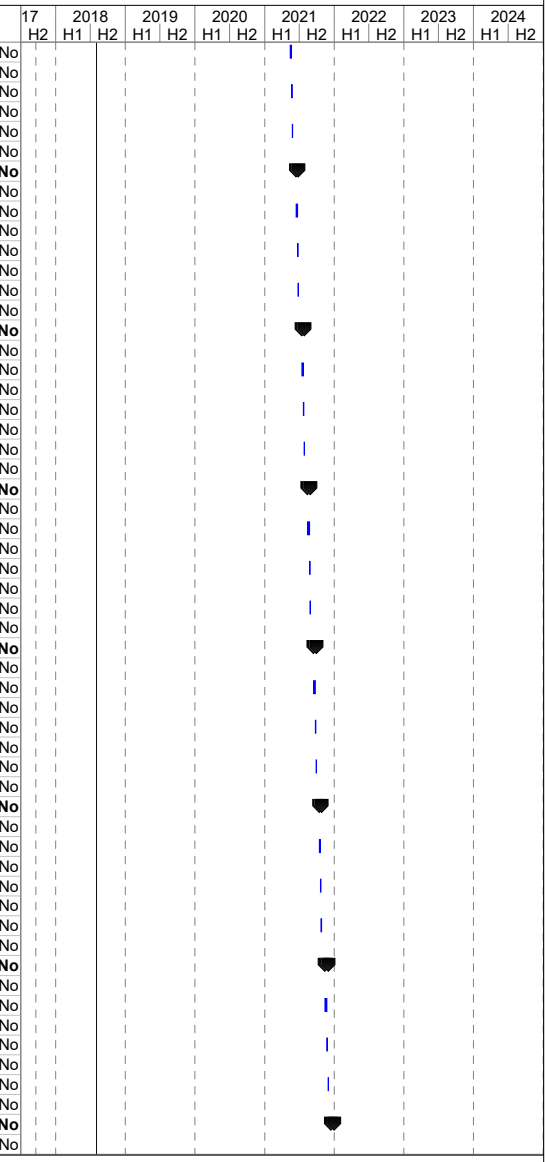
Response to RFP 3462
Child Support Enforcement System Replacement
Design, Development, and Implementation Services

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4131	4131	4.6.3	4.6.3.3	7.2.1.30.2 Review Monthly Status Report	5 days	Wed 10/14/20	Tue 10/20/20	No
4132	4132	4.6.3	4.6.3.3	7.2.1.30.3 Provide Feedback on Monthly Status Report	0 days	Tue 10/20/20	Tue 10/20/20	No
4133	4133	4.6.2.3	4.6.3.3	7.2.1.30.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 10/21/20	Thu 10/22/20	No
4134	4134	4.6.3	4.6.3.3	7.2.1.30.5 Submit Final Version of Monthly Status Report	0 days	Thu 10/22/20	Thu 10/22/20	No
4135	4135	4.6.2.3	4.6.3.3	7.2.1.30.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 10/23/20	Mon 10/26/20	No
4136	4136	4.6.2.3	4.6.3.3	7.2.1.30.7 Approve Monthly Status Report	0 days	Mon 10/26/20	Mon 10/26/20	No
4137	**4137**	**4.6.2.3**	**4.6.3.3**	**7.2.1.31 Monthly Status Reports 31**	**9 days**	**Mon 11/16/20**	**Mon 11/30/20**	**No**
4138	4138	4.6.3	4.6.3.3	7.2.1.31.1 Submit Monthly Status Report	0 days	Mon 11/16/20	Mon 11/16/20	No
4139	4139	4.6.3	4.6.3.3	7.2.1.31.2 Review Monthly Status Report	5 days	Mon 11/16/20	Fri 11/20/20	No
4140	4140	4.6.3	4.6.3.3	7.2.1.31.3 Provide Feedback on Monthly Status Report	0 days	Fri 11/20/20	Fri 11/20/20	No
4141	4141	4.6.2.3	4.6.3.3	7.2.1.31.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 11/23/20	Tue 11/24/20	No
4142	4142	4.6.3	4.6.3.3	7.2.1.31.5 Submit Final Version of Monthly Status Report	0 days	Tue 11/24/20	Tue 11/24/20	No
4143	4143	4.6.2.3	4.6.3.3	7.2.1.31.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 11/25/20	Mon 11/30/20	No
4144	4144	4.6.2.3	4.6.3.3	7.2.1.31.7 Approve Monthly Status Report	0 days	Mon 11/30/20	Mon 11/30/20	No
4145	**4145**	**4.6.2.3**	**4.6.3.3**	**7.2.1.32 Monthly Status Reports 32**	**12 days**	**Mon 12/14/20**	**Wed 12/30/20**	**No**
4146	4146	4.6.3	4.6.3.3	7.2.1.32.1 Submit Monthly Status Report	0 days	Mon 12/14/20	Mon 12/14/20	No
4147	4147	4.6.3	4.6.3.3	7.2.1.32.2 Review Monthly Status Report	8 days	Mon 12/14/20	Wed 12/23/20	No
4148	4148	4.6.3	4.6.3.3	7.2.1.32.3 Provide Feedback on Monthly Status Report	0 days	Wed 12/23/20	Wed 12/23/20	No
4149	4149	4.6.2.3	4.6.3.3	7.2.1.32.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 12/24/20	Mon 12/28/20	No
4150	4150	4.6.3	4.6.3.3	7.2.1.32.5 Submit Final Version of Monthly Status Report	0 days	Mon 12/28/20	Mon 12/28/20	No
4151	4151	4.6.2.3	4.6.3.3	7.2.1.32.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 12/29/20	Wed 12/30/20	No
4152	4152	4.6.2.3	4.6.3.3	7.2.1.32.7 Approve Monthly Status Report	0 days	Wed 12/30/20	Wed 12/30/20	No
4153	**4153**	**4.6.2.3**	**4.6.3.3**	**7.2.1.33 Monthly Status Reports 33**	**11 days**	**Thu 1/14/21**	**Fri 1/29/21**	**No**
4154	4154	4.6.3	4.6.3.3	7.2.1.33.1 Submit Monthly Status Report	0 days	Thu 1/14/21	Thu 1/14/21	No
4155	4155	4.6.3	4.6.3.3	7.2.1.33.2 Review Monthly Status Report	7 days	Thu 1/14/21	Mon 1/25/21	No
4156	4156	4.6.3	4.6.3.3	7.2.1.33.3 Provide Feedback on Monthly Status Report	0 days	Mon 1/25/21	Mon 1/25/21	No
4157	4157	4.6.2.3	4.6.3.3	7.2.1.33.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 1/26/21	Wed 1/27/21	No
4158	4158	4.6.3	4.6.3.3	7.2.1.33.5 Submit Final Version of Monthly Status Report	0 days	Wed 1/27/21	Wed 1/27/21	No
4159	4159	4.6.2.3	4.6.3.3	7.2.1.33.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 1/28/21	Fri 1/29/21	No
4160	4160	4.6.2.3	4.6.3.3	7.2.1.33.7 Approve Monthly Status Report	0 days	Fri 1/29/21	Fri 1/29/21	No
4161	**4161**	**4.6.2.3**	**4.6.3.3**	**7.2.1.34 Monthly Status Reports 34**	**10 days**	**Fri 2/12/21**	**Fri 2/26/21**	**No**
4162	4162	4.6.3	4.6.3.3	7.2.1.34.1 Submit Monthly Status Report	0 days	Fri 2/12/21	Fri 2/12/21	No
4163	4163	4.6.3	4.6.3.3	7.2.1.34.2 Review Monthly Status Report	6 days	Fri 2/12/21	Mon 2/22/21	No
4164	4164	4.6.3	4.6.3.3	7.2.1.34.3 Provide Feedback on Monthly Status Report	0 days	Mon 2/22/21	Mon 2/22/21	No
4165	4165	4.6.2.3	4.6.3.3	7.2.1.34.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 2/23/21	Wed 2/24/21	No
4166	4166	4.6.3	4.6.3.3	7.2.1.34.5 Submit Final Version of Monthly Status Report	0 days	Wed 2/24/21	Wed 2/24/21	No
4167	4167	4.6.2.3	4.6.3.3	7.2.1.34.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 2/25/21	Fri 2/26/21	No
4168	4168	4.6.2.3	4.6.3.3	7.2.1.34.7 Approve Monthly Status Report	0 days	Fri 2/26/21	Fri 2/26/21	No
4169	**4169**	**4.6.2.3**	**4.6.3.3**	**7.2.1.35 Monthly Status Reports 35**	**12 days**	**Fri 3/12/21**	**Mon 3/29/21**	**No**
4170	4170	4.6.3	4.6.3.3	7.2.1.35.1 Submit Monthly Status Report	0 days	Fri 3/12/21	Fri 3/12/21	No
4171	4171	4.6.3	4.6.3.3	7.2.1.35.2 Review Monthly Status Report	8 days	Fri 3/12/21	Tue 3/23/21	No
4172	4172	4.6.3	4.6.3.3	7.2.1.35.3 Provide Feedback on Monthly Status Report	0 days	Tue 3/23/21	Tue 3/23/21	No
4173	4173	4.6.2.3	4.6.3.3	7.2.1.35.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 3/24/21	Thu 3/25/21	No
4174	4174	4.6.3	4.6.3.3	7.2.1.35.5 Submit Final Version of Monthly Status Report	0 days	Thu 3/25/21	Thu 3/25/21	No
4175	4175	4.6.2.3	4.6.3.3	7.2.1.35.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 3/26/21	Mon 3/29/21	No
4176	4176	4.6.2.3	4.6.3.3	7.2.1.35.7 Approve Monthly Status Report	0 days	Mon 3/29/21	Mon 3/29/21	No
4177	**4177**	**4.6.2.3**	**4.6.3.3**	**7.2.1.36 Monthly Status Reports 36**	**10 days**	**Wed 4/14/21**	**Tue 4/27/21**	**No**
4178	4178	4.6.3	4.6.3.3	7.2.1.36.1 Submit Monthly Status Report	0 days	Wed 4/14/21	Wed 4/14/21	No
4179	4179	4.6.3	4.6.3.3	7.2.1.36.2 Review Monthly Status Report	6 days	Wed 4/14/21	Wed 4/21/21	No
4180	4180	4.6.3	4.6.3.3	7.2.1.36.3 Provide Feedback on Monthly Status Report	0 days	Wed 4/21/21	Wed 4/21/21	No
4181	4181	4.6.2.3	4.6.3.3	7.2.1.36.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 4/22/21	Fri 4/23/21	No
4182	4182	4.6.3	4.6.3.3	7.2.1.36.5 Submit Final Version of Monthly Status Report	0 days	Fri 4/23/21	Fri 4/23/21	No
4183	4183	4.6.2.3	4.6.3.3	7.2.1.36.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 4/26/21	Tue 4/27/21	No
4184	4184	4.6.2.3	4.6.3.3	7.2.1.36.7 Approve Monthly Status Report	0 days	Tue 4/27/21	Tue 4/27/21	No
4185	**4185**	**4.6.2.3**	**4.6.3.3**	**7.2.1.37 Monthly Status Reports 37**	**9 days**	**Fri 5/14/21**	**Wed 5/26/21**	**No**
4186	4186	4.6.3	4.6.3.3	7.2.1.37.1 Submit Monthly Status Report	0 days	Fri 5/14/21	Fri 5/14/21	No



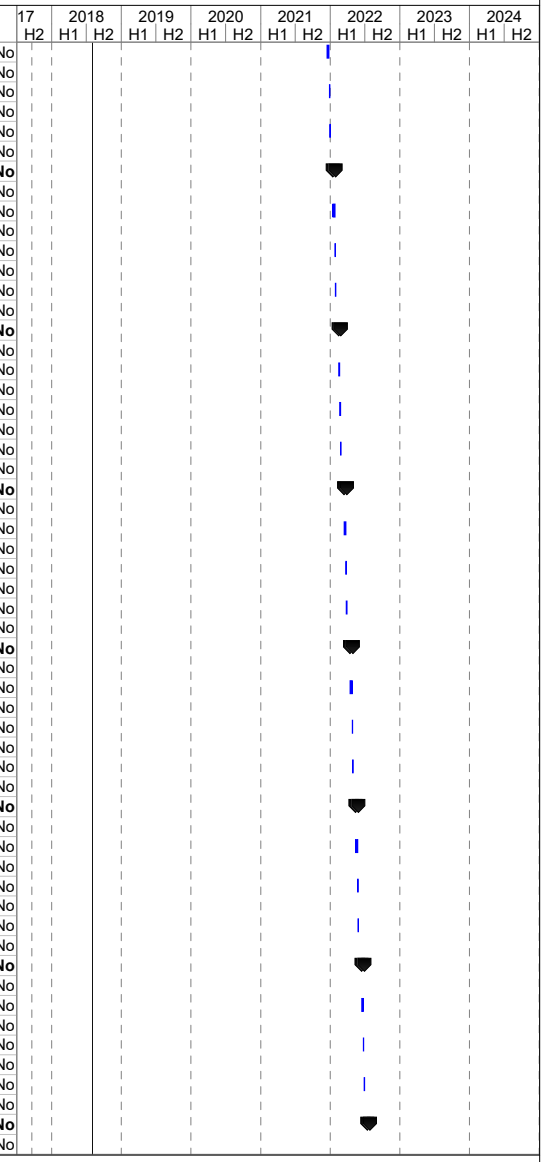
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4187	4187	4.6.3	4.6.3.3	7.2.1.37.2 Review Monthly Status Report	5 days	Fri 5/14/21	Thu 5/20/21	No
4188	4188	4.6.3	4.6.3.3	7.2.1.37.3 Provide Feedback on Monthly Status Report	0 days	Thu 5/20/21	Thu 5/20/21	No
4189	4189	4.6.2.3	4.6.3.3	7.2.1.37.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 5/21/21	Mon 5/24/21	No
4190	4190	4.6.3	4.6.3.3	7.2.1.37.5 Submit Final Version of Monthly Status Report	0 days	Mon 5/24/21	Mon 5/24/21	No
4191	4191	4.6.2.3	4.6.3.3	7.2.1.37.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 5/25/21	Wed 5/26/21	No
4192	4192	4.6.2.3	4.6.3.3	7.2.1.37.7 Approve Monthly Status Report	0 days	Wed 5/26/21	Wed 5/26/21	No
4193	**4193**	**4.6.2.3**	**4.6.3.3**	**7.2.1.38 Monthly Status Reports 38**	**10 days**	**Mon 6/14/21**	**Fri 6/25/21**	**No**
4194	4194	4.6.3	4.6.3.3	7.2.1.38.1 Submit Monthly Status Report	0 days	Mon 6/14/21	Mon 6/14/21	No
4195	4195	4.6.3	4.6.3.3	7.2.1.38.2 Review Monthly Status Report	6 days	Mon 6/14/21	Mon 6/21/21	No
4196	4196	4.6.3	4.6.3.3	7.2.1.38.3 Provide Feedback on Monthly Status Report	0 days	Mon 6/21/21	Mon 6/21/21	No
4197	4197	4.6.2.3	4.6.3.3	7.2.1.38.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 6/22/21	Wed 6/23/21	No
4198	4198	4.6.3	4.6.3.3	7.2.1.38.5 Submit Final Version of Monthly Status Report	0 days	Wed 6/23/21	Wed 6/23/21	No
4199	4199	4.6.2.3	4.6.3.3	7.2.1.38.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 6/24/21	Fri 6/25/21	No
4200	4200	4.6.2.3	4.6.3.3	7.2.1.38.7 Approve Monthly Status Report	0 days	Fri 6/25/21	Fri 6/25/21	No
4201	**4201**	**4.6.2.3**	**4.6.3.3**	**7.2.1.39 Monthly Status Reports 39**	**10 days**	**Wed 7/14/21**	**Tue 7/27/21**	**No**
4202	4202	4.6.3	4.6.3.3	7.2.1.39.1 Submit Monthly Status Report	0 days	Wed 7/14/21	Wed 7/14/21	No
4203	4203	4.6.3	4.6.3.3	7.2.1.39.2 Review Monthly Status Report	6 days	Wed 7/14/21	Wed 7/21/21	No
4204	4204	4.6.3	4.6.3.3	7.2.1.39.3 Provide Feedback on Monthly Status Report	0 days	Wed 7/21/21	Wed 7/21/21	No
4205	4205	4.6.2.3	4.6.3.3	7.2.1.39.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 7/22/21	Fri 7/23/21	No
4206	4206	4.6.3	4.6.3.3	7.2.1.39.5 Submit Final Version of Monthly Status Report	0 days	Fri 7/23/21	Fri 7/23/21	No
4207	4207	4.6.2.3	4.6.3.3	7.2.1.39.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 7/26/21	Tue 7/27/21	No
4208	4208	4.6.2.3	4.6.3.3	7.2.1.39.7 Approve Monthly Status Report	0 days	Tue 7/27/21	Tue 7/27/21	No
4209	**4209**	**4.6.2.3**	**4.6.3.3**	**7.2.1.40 Monthly Status Reports 40**	**11 days**	**Fri 8/13/21**	**Fri 8/27/21**	**No**
4210	4210	4.6.3	4.6.3.3	7.2.1.40.1 Submit Monthly Status Report	0 days	Fri 8/13/21	Fri 8/13/21	No
4211	4211	4.6.3	4.6.3.3	7.2.1.40.2 Review Monthly Status Report	7 days	Fri 8/13/21	Mon 8/23/21	No
4212	4212	4.6.3	4.6.3.3	7.2.1.40.3 Provide Feedback on Monthly Status Report	0 days	Mon 8/23/21	Mon 8/23/21	No
4213	4213	4.6.2.3	4.6.3.3	7.2.1.40.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 8/24/21	Wed 8/25/21	No
4214	4214	4.6.3	4.6.3.3	7.2.1.40.5 Submit Final Version of Monthly Status Report	0 days	Wed 8/25/21	Wed 8/25/21	No
4215	4215	4.6.2.3	4.6.3.3	7.2.1.40.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 8/26/21	Fri 8/27/21	No
4216	4216	4.6.2.3	4.6.3.3	7.2.1.40.7 Approve Monthly Status Report	0 days	Fri 8/27/21	Fri 8/27/21	No
4217	**4217**	**4.6.2.3**	**4.6.3.3**	**7.2.1.41 Monthly Status Reports 41**	**11 days**	**Tue 9/14/21**	**Tue 9/28/21**	**No**
4218	4218	4.6.3	4.6.3.3	7.2.1.41.1 Submit Monthly Status Report	0 days	Tue 9/14/21	Tue 9/14/21	No
4219	4219	4.6.3	4.6.3.3	7.2.1.41.2 Review Monthly Status Report	7 days	Tue 9/14/21	Wed 9/22/21	No
4220	4220	4.6.3	4.6.3.3	7.2.1.41.3 Provide Feedback on Monthly Status Report	0 days	Wed 9/22/21	Wed 9/22/21	No
4221	4221	4.6.2.3	4.6.3.3	7.2.1.41.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 9/23/21	Fri 9/24/21	No
4222	4222	4.6.3	4.6.3.3	7.2.1.41.5 Submit Final Version of Monthly Status Report	0 days	Fri 9/24/21	Fri 9/24/21	No
4223	4223	4.6.2.3	4.6.3.3	7.2.1.41.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 9/27/21	Tue 9/28/21	No
4224	4224	4.6.2.3	4.6.3.3	7.2.1.41.7 Approve Monthly Status Report	0 days	Tue 9/28/21	Tue 9/28/21	No
4225	**4225**	**4.6.2.3**	**4.6.3.3**	**7.2.1.42 Monthly Status Reports 42**	**8 days**	**Thu 10/14/21**	**Mon 10/25/21**	**No**
4226	4226	4.6.3	4.6.3.3	7.2.1.42.1 Submit Monthly Status Report	0 days	Thu 10/14/21	Thu 10/14/21	No
4227	4227	4.6.3	4.6.3.3	7.2.1.42.2 Review Monthly Status Report	4 days	Thu 10/14/21	Tue 10/19/21	No
4228	4228	4.6.3	4.6.3.3	7.2.1.42.3 Provide Feedback on Monthly Status Report	0 days	Tue 10/19/21	Tue 10/19/21	No
4229	4229	4.6.2.3	4.6.3.3	7.2.1.42.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 10/20/21	Thu 10/21/21	No
4230	4230	4.6.3	4.6.3.3	7.2.1.42.5 Submit Final Version of Monthly Status Report	0 days	Thu 10/21/21	Thu 10/21/21	No
4231	4231	4.6.2.3	4.6.3.3	7.2.1.42.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 10/22/21	Mon 10/25/21	No
4232	4232	4.6.2.3	4.6.3.3	7.2.1.42.7 Approve Monthly Status Report	0 days	Mon 10/25/21	Mon 10/25/21	No
4233	**4233**	**4.6.2.3**	**4.6.3.3**	**7.2.1.43 Monthly Status Reports 43**	**11 days**	**Fri 11/12/21**	**Tue 11/30/21**	**No**
4234	4234	4.6.3	4.6.3.3	7.2.1.43.1 Submit Monthly Status Report	0 days	Fri 11/12/21	Fri 11/12/21	No
4235	4235	4.6.3	4.6.3.3	7.2.1.43.2 Review Monthly Status Report	7 days	Fri 11/12/21	Mon 11/22/21	No
4236	4236	4.6.3	4.6.3.3	7.2.1.43.3 Provide Feedback on Monthly Status Report	0 days	Mon 11/22/21	Mon 11/22/21	No
4237	4237	4.6.2.3	4.6.3.3	7.2.1.43.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 11/23/21	Wed 11/24/21	No
4238	4238	4.6.3	4.6.3.3	7.2.1.43.5 Submit Final Version of Monthly Status Report	0 days	Wed 11/24/21	Wed 11/24/21	No
4239	4239	4.6.2.3	4.6.3.3	7.2.1.43.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 11/29/21	Tue 11/30/21	No
4240	4240	4.6.2.3	4.6.3.3	7.2.1.43.7 Approve Monthly Status Report	0 days	Tue 11/30/21	Tue 11/30/21	No
4241	**4241**	**4.6.2.3**	**4.6.3.3**	**7.2.1.44 Monthly Status Reports 44**	**12 days**	**Tue 12/14/21**	**Thu 12/30/21**	**No**
4242	4242	4.6.3	4.6.3.3	7.2.1.44.1 Submit Monthly Status Report	0 days	Tue 12/14/21	Tue 12/14/21	No



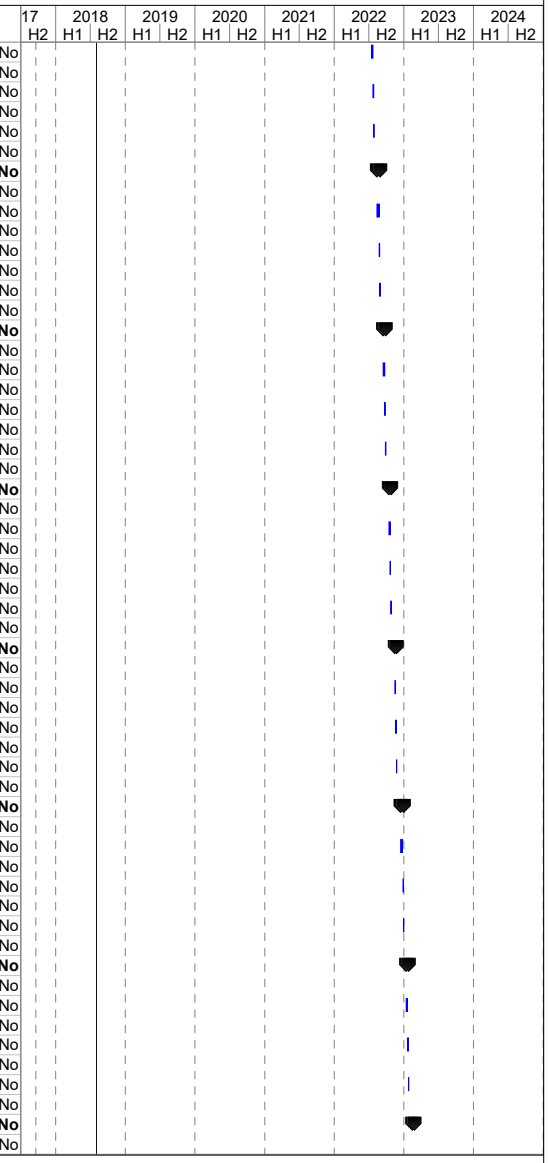
Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4243	4243	4.6.3	4.6.3.3	7.2.1.44.2 Review Monthly Status Report	8 days	Tue 12/14/21	Thu 12/23/21	No
4244	4244	4.6.3	4.6.3.3	7.2.1.44.3 Provide Feedback on Monthly Status Report	0 days	Thu 12/23/21	Thu 12/23/21	No
4245	4245	4.6.2.3	4.6.3.3	7.2.1.44.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 12/27/21	Tue 12/28/21	No
4246	4246	4.6.3	4.6.3.3	7.2.1.44.5 Submit Final Version of Monthly Status Report	0 days	Tue 12/28/21	Tue 12/28/21	No
4247	4247	4.6.2.3	4.6.3.3	7.2.1.44.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 12/29/21	Thu 12/30/21	No
4248	4248	4.6.2.3	4.6.3.3	7.2.1.44.7 Approve Monthly Status Report	0 days	Thu 12/30/21	Thu 12/30/21	No
4249	**4249**	**4.6.2.3**	**4.6.3.3**	**7.2.1.45 Monthly Status Reports 45**	**10 days**	**Fri 1/14/22**	**Fri 1/28/22**	**No**
4250	4250	4.6.3	4.6.3.3	7.2.1.45.1 Submit Monthly Status Report	0 days	Fri 1/14/22	Fri 1/14/22	No
4251	4251	4.6.3	4.6.3.3	7.2.1.45.2 Review Monthly Status Report	6 days	Fri 1/14/22	Mon 1/24/22	No
4252	4252	4.6.3	4.6.3.3	7.2.1.45.3 Provide Feedback on Monthly Status Report	0 days	Mon 1/24/22	Mon 1/24/22	No
4253	4253	4.6.2.3	4.6.3.3	7.2.1.45.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 1/25/22	Wed 1/26/22	No
4254	4254	4.6.3	4.6.3.3	7.2.1.45.5 Submit Final Version of Monthly Status Report	0 days	Wed 1/26/22	Wed 1/26/22	No
4255	4255	4.6.2.3	4.6.3.3	7.2.1.45.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 1/27/22	Fri 1/28/22	No
4256	4256	4.6.2.3	4.6.3.3	7.2.1.45.7 Approve Monthly Status Report	0 days	Fri 1/28/22	Fri 1/28/22	No
4257	**4257**	**4.6.2.3**	**4.6.3.3**	**7.2.1.46 Monthly Status Reports 46**	**8 days**	**Mon 2/14/22**	**Thu 2/24/22**	**No**
4258	4258	4.6.3	4.6.3.3	7.2.1.46.1 Submit Monthly Status Report	0 days	Mon 2/14/22	Mon 2/14/22	No
4259	4259	4.6.3	4.6.3.3	7.2.1.46.2 Review Monthly Status Report	4 days	Mon 2/14/22	Thu 2/17/22	No
4260	4260	4.6.3	4.6.3.3	7.2.1.46.3 Provide Feedback on Monthly Status Report	0 days	Thu 2/17/22	Thu 2/17/22	No
4261	4261	4.6.2.3	4.6.3.3	7.2.1.46.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 2/18/22	Tue 2/22/22	No
4262	4262	4.6.3	4.6.3.3	7.2.1.46.5 Submit Final Version of Monthly Status Report	0 days	Tue 2/22/22	Tue 2/22/22	No
4263	4263	4.6.2.3	4.6.3.3	7.2.1.46.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 2/23/22	Thu 2/24/22	No
4264	4264	4.6.2.3	4.6.3.3	7.2.1.46.7 Approve Monthly Status Report	0 days	Thu 2/24/22	Thu 2/24/22	No
4265	**4265**	**4.6.2.3**	**4.6.3.3**	**7.2.1.47 Monthly Status Reports 47**	**11 days**	**Mon 3/14/22**	**Mon 3/28/22**	**No**
4266	4266	4.6.3	4.6.3.3	7.2.1.47.1 Submit Monthly Status Report	0 days	Mon 3/14/22	Mon 3/14/22	No
4267	4267	4.6.3	4.6.3.3	7.2.1.47.2 Review Monthly Status Report	7 days	Mon 3/14/22	Tue 3/22/22	No
4268	4268	4.6.3	4.6.3.3	7.2.1.47.3 Provide Feedback on Monthly Status Report	0 days	Tue 3/22/22	Tue 3/22/22	No
4269	4269	4.6.2.3	4.6.3.3	7.2.1.47.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 3/23/22	Thu 3/24/22	No
4270	4270	4.6.3	4.6.3.3	7.2.1.47.5 Submit Final Version of Monthly Status Report	0 days	Thu 3/24/22	Thu 3/24/22	No
4271	4271	4.6.2.3	4.6.3.3	7.2.1.47.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 3/25/22	Mon 3/28/22	No
4272	4272	4.6.2.3	4.6.3.3	7.2.1.47.7 Approve Monthly Status Report	0 days	Mon 3/28/22	Mon 3/28/22	No
4273	**4273**	**4.6.2.3**	**4.6.3.3**	**7.2.1.48 Monthly Status Reports 48**	**12 days**	**Thu 4/14/22**	**Fri 4/29/22**	**No**
4274	4274	4.6.3	4.6.3.3	7.2.1.48.1 Submit Monthly Status Report	0 days	Thu 4/14/22	Thu 4/14/22	No
4275	4275	4.6.3	4.6.3.3	7.2.1.48.2 Review Monthly Status Report	8 days	Thu 4/14/22	Mon 4/25/22	No
4276	4276	4.6.3	4.6.3.3	7.2.1.48.3 Provide Feedback on Monthly Status Report	0 days	Mon 4/25/22	Mon 4/25/22	No
4277	4277	4.6.2.3	4.6.3.3	7.2.1.48.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 4/26/22	Wed 4/27/22	No
4278	4278	4.6.3	4.6.3.3	7.2.1.48.5 Submit Final Version of Monthly Status Report	0 days	Wed 4/27/22	Wed 4/27/22	No
4279	4279	4.6.2.3	4.6.3.3	7.2.1.48.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 4/28/22	Fri 4/29/22	No
4280	4280	4.6.2.3	4.6.3.3	7.2.1.48.7 Approve Monthly Status Report	0 days	Fri 4/29/22	Fri 4/29/22	No
4281	**4281**	**4.6.2.3**	**4.6.3.3**	**7.2.1.49 Monthly Status Reports 49**	**11 days**	**Fri 5/13/22**	**Fri 5/27/22**	**No**
4282	4282	4.6.3	4.6.3.3	7.2.1.49.1 Submit Monthly Status Report	0 days	Fri 5/13/22	Fri 5/13/22	No
4283	4283	4.6.3	4.6.3.3	7.2.1.49.2 Review Monthly Status Report	7 days	Fri 5/13/22	Mon 5/23/22	No
4284	4284	4.6.3	4.6.3.3	7.2.1.49.3 Provide Feedback on Monthly Status Report	0 days	Mon 5/23/22	Mon 5/23/22	No
4285	4285	4.6.2.3	4.6.3.3	7.2.1.49.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 5/24/22	Wed 5/25/22	No
4286	4286	4.6.3	4.6.3.3	7.2.1.49.5 Submit Final Version of Monthly Status Report	0 days	Wed 5/25/22	Wed 5/25/22	No
4287	4287	4.6.2.3	4.6.3.3	7.2.1.49.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 5/26/22	Fri 5/27/22	No
4288	4288	4.6.2.3	4.6.3.3	7.2.1.49.7 Approve Monthly Status Report	0 days	Fri 5/27/22	Fri 5/27/22	No
4289	**4289**	**4.6.2.3**	**4.6.3.3**	**7.2.1.50 Monthly Status Reports 50**	**11 days**	**Tue 6/14/22**	**Tue 6/28/22**	**No**
4290	4290	4.6.3	4.6.3.3	7.2.1.50.1 Submit Monthly Status Report	0 days	Tue 6/14/22	Tue 6/14/22	No
4291	4291	4.6.3	4.6.3.3	7.2.1.50.2 Review Monthly Status Report	7 days	Tue 6/14/22	Wed 6/22/22	No
4292	4292	4.6.3	4.6.3.3	7.2.1.50.3 Provide Feedback on Monthly Status Report	0 days	Wed 6/22/22	Wed 6/22/22	No
4293	4293	4.6.2.3	4.6.3.3	7.2.1.50.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 6/23/22	Fri 6/24/22	No
4294	4294	4.6.3	4.6.3.3	7.2.1.50.5 Submit Final Version of Monthly Status Report	0 days	Fri 6/24/22	Fri 6/24/22	No
4295	4295	4.6.2.3	4.6.3.3	7.2.1.50.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 6/27/22	Tue 6/28/22	No
4296	4296	4.6.2.3	4.6.3.3	7.2.1.50.7 Approve Monthly Status Report	0 days	Tue 6/28/22	Tue 6/28/22	No
4297	**4297**	**4.6.2.3**	**4.6.3.3**	**7.2.1.51 Monthly Status Reports 51**	**10 days**	**Thu 7/14/22**	**Wed 7/27/22**	**No**
4298	4298	4.6.3	4.6.3.3	7.2.1.51.1 Submit Monthly Status Report	0 days	Thu 7/14/22	Thu 7/14/22	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

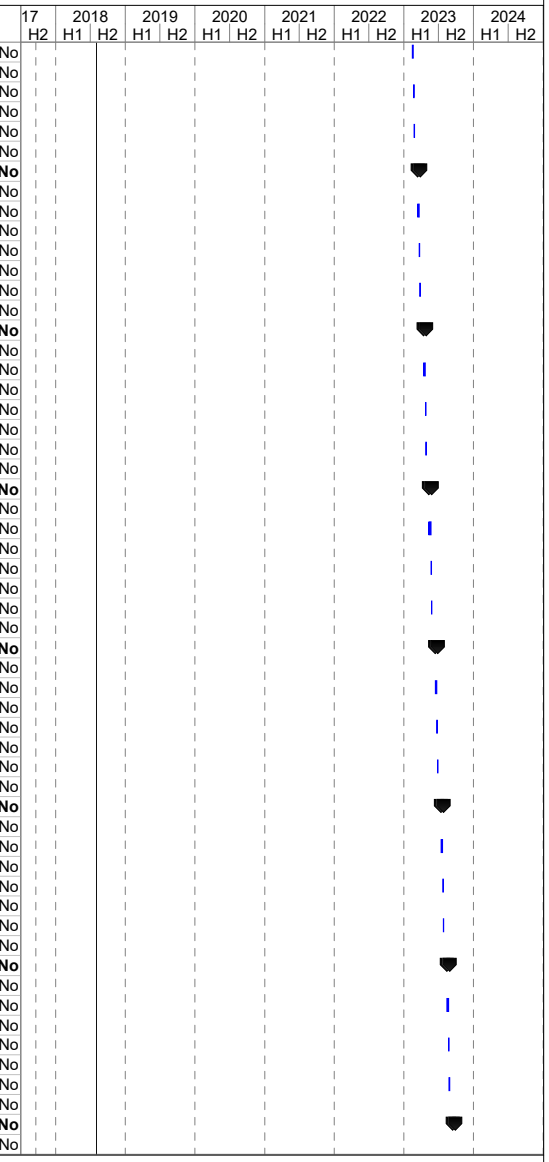
ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4299	4299	4.6.3	4.6.3.3	7.2.1.51.2 Review Monthly Status Report	6 days	Thu 7/14/22	Thu 7/21/22	No
4300	4300	4.6.3	4.6.3.3	7.2.1.51.3 Provide Feedback on Monthly Status Report	0 days	Thu 7/21/22	Thu 7/21/22	No
4301	4301	4.6.2.3	4.6.3.3	7.2.1.51.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 7/22/22	Mon 7/25/22	No
4302	4302	4.6.3	4.6.3.3	7.2.1.51.5 Submit Final Version of Monthly Status Report	0 days	Mon 7/25/22	Mon 7/25/22	No
4303	4303	4.6.2.3	4.6.3.3	7.2.1.51.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 7/26/22	Wed 7/27/22	No
4304	4304	4.6.2.3	4.6.3.3	7.2.1.51.7 Approve Monthly Status Report	0 days	Wed 7/27/22	Wed 7/27/22	No
4305	**4305**	**4.6.2.3**	**4.6.3.3**	**7.2.1.52 Monthly Status Reports 52**	**12 days**	**Fri 8/12/22**	**Mon 8/29/22**	**No**
4306	4306	4.6.3	4.6.3.3	7.2.1.52.1 Submit Monthly Status Report	0 days	Fri 8/12/22	Fri 8/12/22	No
4307	4307	4.6.3	4.6.3.3	7.2.1.52.2 Review Monthly Status Report	8 days	Fri 8/12/22	Tue 8/23/22	No
4308	4308	4.6.3	4.6.3.3	7.2.1.52.3 Provide Feedback on Monthly Status Report	0 days	Tue 8/23/22	Tue 8/23/22	No
4309	4309	4.6.2.3	4.6.3.3	7.2.1.52.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 8/24/22	Thu 8/25/22	No
4310	4310	4.6.3	4.6.3.3	7.2.1.52.5 Submit Final Version of Monthly Status Report	0 days	Thu 8/25/22	Thu 8/25/22	No
4311	4311	4.6.2.3	4.6.3.3	7.2.1.52.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 8/26/22	Mon 8/29/22	No
4312	4312	4.6.2.3	4.6.3.3	7.2.1.52.7 Approve Monthly Status Report	0 days	Mon 8/29/22	Mon 8/29/22	No
4313	**4313**	**4.6.2.3**	**4.6.3.3**	**7.2.1.53 Monthly Status Reports 53**	**10 days**	**Wed 9/14/22**	**Tue 9/27/22**	**No**
4314	4314	4.6.3	4.6.3.3	7.2.1.53.1 Submit Monthly Status Report	0 days	Wed 9/14/22	Wed 9/14/22	No
4315	4315	4.6.3	4.6.3.3	7.2.1.53.2 Review Monthly Status Report	6 days	Wed 9/14/22	Wed 9/21/22	No
4316	4316	4.6.3	4.6.3.3	7.2.1.53.3 Provide Feedback on Monthly Status Report	0 days	Wed 9/21/22	Wed 9/21/22	No
4317	4317	4.6.2.3	4.6.3.3	7.2.1.53.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 9/22/22	Fri 9/23/22	No
4318	4318	4.6.3	4.6.3.3	7.2.1.53.5 Submit Final Version of Monthly Status Report	0 days	Fri 9/23/22	Fri 9/23/22	No
4319	4319	4.6.2.3	4.6.3.3	7.2.1.53.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 9/26/22	Tue 9/27/22	No
4320	4320	4.6.2.3	4.6.3.3	7.2.1.53.7 Approve Monthly Status Report	0 days	Tue 9/27/22	Tue 9/27/22	No
4321	**4321**	**4.6.2.3**	**4.6.3.3**	**7.2.1.54 Monthly Status Reports 54**	**8 days**	**Fri 10/14/22**	**Tue 10/25/22**	**No**
4322	4322	4.6.3	4.6.3.3	7.2.1.54.1 Submit Monthly Status Report	0 days	Fri 10/14/22	Fri 10/14/22	No
4323	4323	4.6.3	4.6.3.3	7.2.1.54.2 Review Monthly Status Report	4 days	Fri 10/14/22	Wed 10/19/22	No
4324	4324	4.6.3	4.6.3.3	7.2.1.54.3 Provide Feedback on Monthly Status Report	0 days	Wed 10/19/22	Wed 10/19/22	No
4325	4325	4.6.2.3	4.6.3.3	7.2.1.54.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 10/20/22	Fri 10/21/22	No
4326	4326	4.6.3	4.6.3.3	7.2.1.54.5 Submit Final Version of Monthly Status Report	0 days	Fri 10/21/22	Fri 10/21/22	No
4327	4327	4.6.2.3	4.6.3.3	7.2.1.54.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 10/24/22	Tue 10/25/22	No
4328	4328	4.6.2.3	4.6.3.3	7.2.1.54.7 Approve Monthly Status Report	0 days	Tue 10/25/22	Tue 10/25/22	No
4329	**4329**	**4.6.2.3**	**4.6.3.3**	**7.2.1.55 Monthly Status Reports 55**	**8 days**	**Mon 11/14/22**	**Wed 11/23/22**	**No**
4330	4330	4.6.3	4.6.3.3	7.2.1.55.1 Submit Monthly Status Report	0 days	Mon 11/14/22	Mon 11/14/22	No
4331	4331	4.6.3	4.6.3.3	7.2.1.55.2 Review Monthly Status Report	4 days	Mon 11/14/22	Thu 11/17/22	No
4332	4332	4.6.3	4.6.3.3	7.2.1.55.3 Provide Feedback on Monthly Status Report	0 days	Thu 11/17/22	Thu 11/17/22	No
4333	4333	4.6.2.3	4.6.3.3	7.2.1.55.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 11/18/22	Mon 11/21/22	No
4334	4334	4.6.3	4.6.3.3	7.2.1.55.5 Submit Final Version of Monthly Status Report	0 days	Mon 11/21/22	Mon 11/21/22	No
4335	4335	4.6.2.3	4.6.3.3	7.2.1.55.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 11/22/22	Wed 11/23/22	No
4336	4336	4.6.2.3	4.6.3.3	7.2.1.55.7 Approve Monthly Status Report	0 days	Wed 11/23/22	Wed 11/23/22	No
4337	**4337**	**4.6.2.3**	**4.6.3.3**	**7.2.1.56 Monthly Status Reports 56**	**12 days**	**Wed 12/14/22**	**Fri 12/30/22**	**No**
4338	4338	4.6.3	4.6.3.3	7.2.1.56.1 Submit Monthly Status Report	0 days	Wed 12/14/22	Wed 12/14/22	No
4339	4339	4.6.3	4.6.3.3	7.2.1.56.2 Review Monthly Status Report	8 days	Wed 12/14/22	Fri 12/23/22	No
4340	4340	4.6.3	4.6.3.3	7.2.1.56.3 Provide Feedback on Monthly Status Report	0 days	Fri 12/23/22	Fri 12/23/22	No
4341	4341	4.6.2.3	4.6.3.3	7.2.1.56.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 12/27/22	Wed 12/28/22	No
4342	4342	4.6.3	4.6.3.3	7.2.1.56.5 Submit Final Version of Monthly Status Report	0 days	Wed 12/28/22	Wed 12/28/22	No
4343	4343	4.6.2.3	4.6.3.3	7.2.1.56.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 12/29/22	Fri 12/30/22	No
4344	4344	4.6.2.3	4.6.3.3	7.2.1.56.7 Approve Monthly Status Report	0 days	Fri 12/30/22	Fri 12/30/22	No
4345	**4345**	**4.6.2.3**	**4.6.3.3**	**7.2.1.57 Monthly Status Reports 57**	**8 days**	**Fri 1/13/23**	**Wed 1/25/23**	**No**
4346	4346	4.6.3	4.6.3.3	7.2.1.57.1 Submit Monthly Status Report	0 days	Fri 1/13/23	Fri 1/13/23	No
4347	4347	4.6.3	4.6.3.3	7.2.1.57.2 Review Monthly Status Report	4 days	Fri 1/13/23	Thu 1/19/23	No
4348	4348	4.6.3	4.6.3.3	7.2.1.57.3 Provide Feedback on Monthly Status Report	0 days	Thu 1/19/23	Thu 1/19/23	No
4349	4349	4.6.2.3	4.6.3.3	7.2.1.57.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 1/20/23	Mon 1/23/23	No
4350	4350	4.6.3	4.6.3.3	7.2.1.57.5 Submit Final Version of Monthly Status Report	0 days	Mon 1/23/23	Mon 1/23/23	No
4351	4351	4.6.2.3	4.6.3.3	7.2.1.57.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 1/24/23	Wed 1/25/23	No
4352	4352	4.6.2.3	4.6.3.3	7.2.1.57.7 Approve Monthly Status Report	0 days	Wed 1/25/23	Wed 1/25/23	No
4353	**4353**	**4.6.2.3**	**4.6.3.3**	**7.2.1.58 Monthly Status Reports 58**	**8 days**	**Tue 2/14/23**	**Fri 2/24/23**	**No**
4354	4354	4.6.3	4.6.3.3	7.2.1.58.1 Submit Monthly Status Report	0 days	Tue 2/14/23	Tue 2/14/23	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

Response to RFP 3462
Child Support Enforcement System Replacement
Design, Development, and Implementation Services

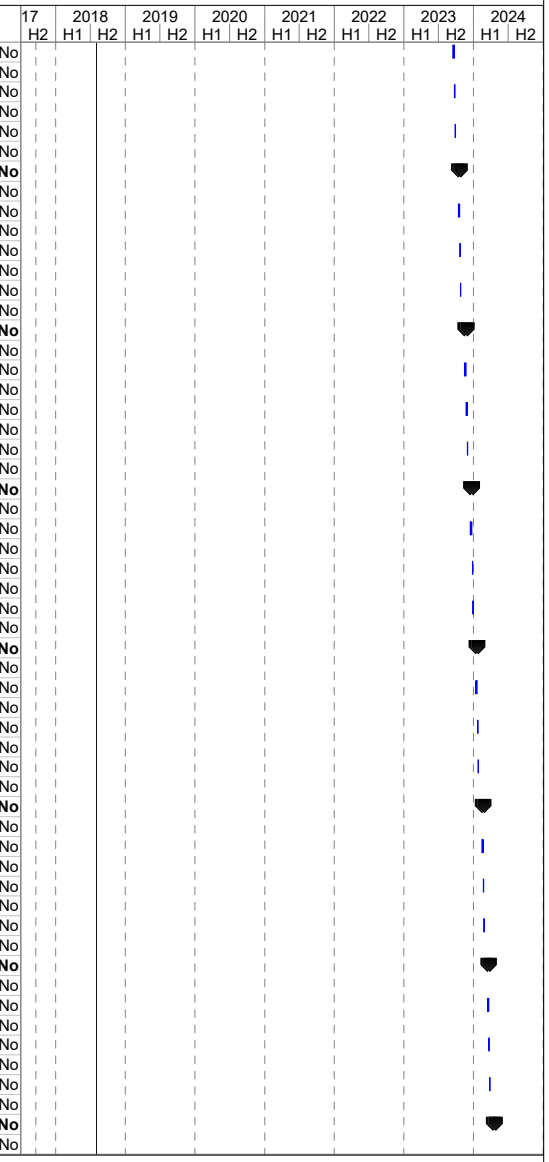
ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4355	4355	4.6.3	4.6.3.3	7.2.1.58.2 Review Monthly Status Report	4 days	Tue 2/14/23	Fri 2/17/23	No
4356	4356	4.6.3	4.6.3.3	7.2.1.58.3 Provide Feedback on Monthly Status Report	0 days	Fri 2/17/23	Fri 2/17/23	No
4357	4357	4.6.2.3	4.6.3.3	7.2.1.58.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 2/21/23	Wed 2/22/23	No
4358	4358	4.6.3	4.6.3.3	7.2.1.58.5 Submit Final Version of Monthly Status Report	0 days	Wed 2/22/23	Wed 2/22/23	No
4359	4359	4.6.2.3	4.6.3.3	7.2.1.58.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 2/23/23	Fri 2/24/23	No
4360	4360	4.6.2.3	4.6.3.3	7.2.1.58.7 Approve Monthly Status Report	0 days	Fri 2/24/23	Fri 2/24/23	No
4361	**4361**	**4.6.2.3**	**4.6.3.3**	**7.2.1.59 Monthly Status Reports 59**	**10 days**	**Tue 3/14/23**	**Mon 3/27/23**	**No**
4362	4362	4.6.3	4.6.3.3	7.2.1.59.1 Submit Monthly Status Report	0 days	Tue 3/14/23	Tue 3/14/23	No
4363	4363	4.6.3	4.6.3.3	7.2.1.59.2 Review Monthly Status Report	6 days	Tue 3/14/23	Tue 3/21/23	No
4364	4364	4.6.3	4.6.3.3	7.2.1.59.3 Provide Feedback on Monthly Status Report	0 days	Tue 3/21/23	Tue 3/21/23	No
4365	4365	4.6.2.3	4.6.3.3	7.2.1.59.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 3/22/23	Thu 3/23/23	No
4366	4366	4.6.3	4.6.3.3	7.2.1.59.5 Submit Final Version of Monthly Status Report	0 days	Thu 3/23/23	Thu 3/23/23	No
4367	4367	4.6.2.3	4.6.3.3	7.2.1.59.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 3/24/23	Mon 3/27/23	No
4368	4368	4.6.2.3	4.6.3.3	7.2.1.59.7 Approve Monthly Status Report	0 days	Mon 3/27/23	Mon 3/27/23	No
4369	**4369**	**4.6.2.3**	**4.6.3.3**	**7.2.1.60 Monthly Status Reports 60**	**10 days**	**Fri 4/14/23**	**Thu 4/27/23**	**No**
4370	4370	4.6.3	4.6.3.3	7.2.1.60.1 Submit Monthly Status Report	0 days	Fri 4/14/23	Fri 4/14/23	No
4371	4371	4.6.3	4.6.3.3	7.2.1.60.2 Review Monthly Status Report	6 days	Fri 4/14/23	Fri 4/21/23	No
4372	4372	4.6.3	4.6.3.3	7.2.1.60.3 Provide Feedback on Monthly Status Report	0 days	Fri 4/21/23	Fri 4/21/23	No
4373	4373	4.6.2.3	4.6.3.3	7.2.1.60.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 4/24/23	Tue 4/25/23	No
4374	4374	4.6.3	4.6.3.3	7.2.1.60.5 Submit Final Version of Monthly Status Report	0 days	Tue 4/25/23	Tue 4/25/23	No
4375	4375	4.6.2.3	4.6.3.3	7.2.1.60.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 4/26/23	Thu 4/27/23	No
4376	4376	4.6.2.3	4.6.3.3	7.2.1.60.7 Approve Monthly Status Report	0 days	Thu 4/27/23	Thu 4/27/23	No
4377	**4377**	**4.6.2.3**	**4.6.3.3**	**7.2.1.61 Monthly Status Reports 61**	**11 days**	**Fri 5/12/23**	**Fri 5/26/23**	**No**
4378	4378	4.6.3	4.6.3.3	7.2.1.61.1 Submit Monthly Status Report	0 days	Fri 5/12/23	Fri 5/12/23	No
4379	4379	4.6.3	4.6.3.3	7.2.1.61.2 Review Monthly Status Report	7 days	Fri 5/12/23	Mon 5/22/23	No
4380	4380	4.6.3	4.6.3.3	7.2.1.61.3 Provide Feedback on Monthly Status Report	0 days	Mon 5/22/23	Mon 5/22/23	No
4381	4381	4.6.2.3	4.6.3.3	7.2.1.61.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 5/23/23	Wed 5/24/23	No
4382	4382	4.6.3	4.6.3.3	7.2.1.61.5 Submit Final Version of Monthly Status Report	0 days	Wed 5/24/23	Wed 5/24/23	No
4383	4383	4.6.2.3	4.6.3.3	7.2.1.61.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 5/25/23	Fri 5/26/23	No
4384	4384	4.6.2.3	4.6.3.3	7.2.1.61.7 Approve Monthly Status Report	0 days	Fri 5/26/23	Fri 5/26/23	No
4385	**4385**	**4.6.2.3**	**4.6.3.3**	**7.2.1.62 Monthly Status Reports 62**	**10 days**	**Wed 6/14/23**	**Tue 6/27/23**	**No**
4386	4386	4.6.3	4.6.3.3	7.2.1.62.1 Submit Monthly Status Report	0 days	Wed 6/14/23	Wed 6/14/23	No
4387	4387	4.6.3	4.6.3.3	7.2.1.62.2 Review Monthly Status Report	6 days	Wed 6/14/23	Wed 6/21/23	No
4388	4388	4.6.3	4.6.3.3	7.2.1.62.3 Provide Feedback on Monthly Status Report	0 days	Wed 6/21/23	Wed 6/21/23	No
4389	4389	4.6.2.3	4.6.3.3	7.2.1.62.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 6/22/23	Fri 6/23/23	No
4390	4390	4.6.3	4.6.3.3	7.2.1.62.5 Submit Final Version of Monthly Status Report	0 days	Fri 6/23/23	Fri 6/23/23	No
4391	4391	4.6.2.3	4.6.3.3	7.2.1.62.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 6/26/23	Tue 6/27/23	No
4392	4392	4.6.2.3	4.6.3.3	7.2.1.62.7 Approve Monthly Status Report	0 days	Tue 6/27/23	Tue 6/27/23	No
4393	**4393**	**4.6.2.3**	**4.6.3.3**	**7.2.1.63 Monthly Status Reports 63**	**10 days**	**Fri 7/14/23**	**Thu 7/27/23**	**No**
4394	4394	4.6.3	4.6.3.3	7.2.1.63.1 Submit Monthly Status Report	0 days	Fri 7/14/23	Fri 7/14/23	No
4395	4395	4.6.3	4.6.3.3	7.2.1.63.2 Review Monthly Status Report	6 days	Fri 7/14/23	Fri 7/21/23	No
4396	4396	4.6.3	4.6.3.3	7.2.1.63.3 Provide Feedback on Monthly Status Report	0 days	Fri 7/21/23	Fri 7/21/23	No
4397	4397	4.6.2.3	4.6.3.3	7.2.1.63.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 7/24/23	Tue 7/25/23	No
4398	4398	4.6.3	4.6.3.3	7.2.1.63.5 Submit Final Version of Monthly Status Report	0 days	Tue 7/25/23	Tue 7/25/23	No
4399	4399	4.6.2.3	4.6.3.3	7.2.1.63.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 7/26/23	Thu 7/27/23	No
4400	4400	4.6.2.3	4.6.3.3	7.2.1.63.7 Approve Monthly Status Report	0 days	Thu 7/27/23	Thu 7/27/23	No
4401	**4401**	**4.6.2.3**	**4.6.3.3**	**7.2.1.64 Monthly Status Reports 64**	**11 days**	**Mon 8/14/23**	**Mon 8/28/23**	**No**
4402	4402	4.6.3	4.6.3.3	7.2.1.64.1 Submit Monthly Status Report	0 days	Mon 8/14/23	Mon 8/14/23	No
4403	4403	4.6.3	4.6.3.3	7.2.1.64.2 Review Monthly Status Report	7 days	Mon 8/14/23	Tue 8/22/23	No
4404	4404	4.6.3	4.6.3.3	7.2.1.64.3 Provide Feedback on Monthly Status Report	0 days	Tue 8/22/23	Tue 8/22/23	No
4405	4405	4.6.2.3	4.6.3.3	7.2.1.64.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 8/23/23	Thu 8/24/23	No
4406	4406	4.6.3	4.6.3.3	7.2.1.64.5 Submit Final Version of Monthly Status Report	0 days	Thu 8/24/23	Thu 8/24/23	No
4407	4407	4.6.2.3	4.6.3.3	7.2.1.64.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 8/25/23	Mon 8/28/23	No
4408	4408	4.6.2.3	4.6.3.3	7.2.1.64.7 Approve Monthly Status Report	0 days	Mon 8/28/23	Mon 8/28/23	No
4409	**4409**	**4.6.2.3**	**4.6.3.3**	**7.2.1.65 Monthly Status Reports 65**	**10 days**	**Thu 9/14/23**	**Wed 9/27/23**	**No**
4410	4410	4.6.3	4.6.3.3	7.2.1.65.1 Submit Monthly Status Report	0 days	Thu 9/14/23	Thu 9/14/23	No



Task | External Tasks | Manual Task | Finish-only
Split | External Milestone | Duration-only | Critical
Milestone | Inactive Task | Manual Summary Rollup | Critical Split
Summary | Inactive Milestone | Manual Summary | Progress
Project Summary | Inactive Summary | Start-only | Deadline

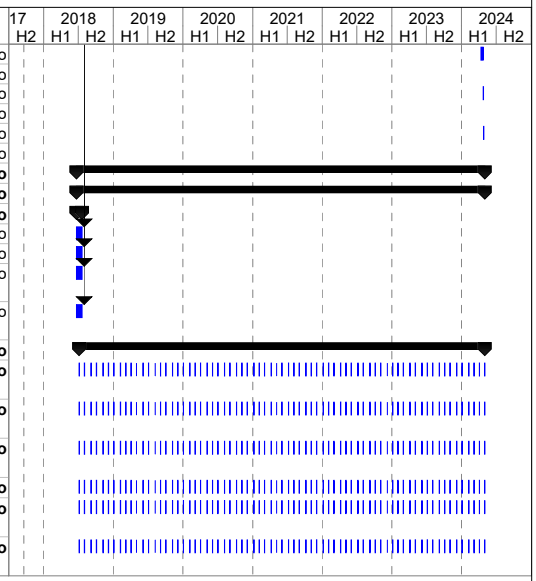
Response to RFP 3462
Child Support Enforcement System Replacement
Design, Development, and Implementation Services

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4411	4411	4.6.3	4.6.3.3	7.2.1.65.2 Review Monthly Status Report	6 days	Thu 9/14/23	Thu 9/21/23	No
4412	4412	4.6.3	4.6.3.3	7.2.1.65.3 Provide Feedback on Monthly Status Report	0 days	Thu 9/21/23	Thu 9/21/23	No
4413	4413	4.6.2.3	4.6.3.3	7.2.1.65.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 9/22/23	Mon 9/25/23	No
4414	4414	4.6.3	4.6.3.3	7.2.1.65.5 Submit Final Version of Monthly Status Report	0 days	Mon 9/25/23	Mon 9/25/23	No
4415	4415	4.6.2.3	4.6.3.3	7.2.1.65.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 9/26/23	Wed 9/27/23	No
4416	4416	4.6.2.3	4.6.3.3	7.2.1.65.7 Approve Monthly Status Report	0 days	Wed 9/27/23	Wed 9/27/23	No
4417	**4417**	**4.6.2.3**	**4.6.3.3**	**7.2.1.66 Monthly Status Reports 66**	**9 days**	**Fri 10/13/23**	**Wed 10/25/23**	**No**
4418	4418	4.6.3	4.6.3.3	7.2.1.66.1 Submit Monthly Status Report	0 days	Fri 10/13/23	Fri 10/13/23	No
4419	4419	4.6.3	4.6.3.3	7.2.1.66.2 Review Monthly Status Report	5 days	Fri 10/13/23	Thu 10/19/23	No
4420	4420	4.6.3	4.6.3.3	7.2.1.66.3 Provide Feedback on Monthly Status Report	0 days	Thu 10/19/23	Thu 10/19/23	No
4421	4421	4.6.2.3	4.6.3.3	7.2.1.66.4 Incorporate Feedback on Monthly Status Report	2 days	Fri 10/20/23	Mon 10/23/23	No
4422	4422	4.6.3	4.6.3.3	7.2.1.66.5 Submit Final Version of Monthly Status Report	0 days	Mon 10/23/23	Mon 10/23/23	No
4423	4423	4.6.2.3	4.6.3.3	7.2.1.66.6 Review and Verify Feedback on Monthly Status Report	2 days	Tue 10/24/23	Wed 10/25/23	No
4424	4424	4.6.2.3	4.6.3.3	7.2.1.66.7 Approve Monthly Status Report	0 days	Wed 10/25/23	Wed 10/25/23	No
4425	**4425**	**4.6.2.3**	**4.6.3.3**	**7.2.1.67 Monthly Status Reports 67**	**10 days**	**Tue 11/14/23**	**Thu 11/30/23**	**No**
4426	4426	4.6.3	4.6.3.3	7.2.1.67.1 Submit Monthly Status Report	0 days	Tue 11/14/23	Tue 11/14/23	No
4427	4427	4.6.3	4.6.3.3	7.2.1.67.2 Review Monthly Status Report	6 days	Tue 11/14/23	Tue 11/21/23	No
4428	4428	4.6.3	4.6.3.3	7.2.1.67.3 Provide Feedback on Monthly Status Report	0 days	Tue 11/21/23	Tue 11/21/23	No
4429	4429	4.6.2.3	4.6.3.3	7.2.1.67.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 11/22/23	Tue 11/28/23	No
4430	4430	4.6.3	4.6.3.3	7.2.1.67.5 Submit Final Version of Monthly Status Report	0 days	Tue 11/28/23	Tue 11/28/23	No
4431	4431	4.6.2.3	4.6.3.3	7.2.1.67.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 11/29/23	Thu 11/30/23	No
4432	4432	4.6.2.3	4.6.3.3	7.2.1.67.7 Approve Monthly Status Report	0 days	Thu 11/30/23	Thu 11/30/23	No
4433	**4433**	**4.6.2.3**	**4.6.3.3**	**7.2.1.68 Monthly Status Reports 68**	**11 days**	**Thu 12/14/23**	**Fri 12/29/23**	**No**
4434	4434	4.6.3	4.6.3.3	7.2.1.68.1 Submit Monthly Status Report	0 days	Thu 12/14/23	Thu 12/14/23	No
4435	4435	4.6.3	4.6.3.3	7.2.1.68.2 Review Monthly Status Report	7 days	Thu 12/14/23	Fri 12/22/23	No
4436	4436	4.6.3	4.6.3.3	7.2.1.68.3 Provide Feedback on Monthly Status Report	0 days	Fri 12/22/23	Fri 12/22/23	No
4437	4437	4.6.2.3	4.6.3.3	7.2.1.68.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 12/26/23	Wed 12/27/23	No
4438	4438	4.6.3	4.6.3.3	7.2.1.68.5 Submit Final Version of Monthly Status Report	0 days	Wed 12/27/23	Wed 12/27/23	No
4439	4439	4.6.2.3	4.6.3.3	7.2.1.68.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 12/28/23	Fri 12/29/23	No
4440	4440	4.6.2.3	4.6.3.3	7.2.1.68.7 Approve Monthly Status Report	0 days	Fri 12/29/23	Fri 12/29/23	No
4441	**4441**	**4.6.2.3**	**4.6.3.3**	**7.2.1.69 Monthly Status Reports 69**	**9 days**	**Fri 1/12/24**	**Thu 1/25/24**	**No**
4442	4442	4.6.3	4.6.3.3	7.2.1.69.1 Submit Monthly Status Report	0 days	Fri 1/12/24	Fri 1/12/24	No
4443	4443	4.6.3	4.6.3.3	7.2.1.69.2 Review Monthly Status Report	5 days	Fri 1/12/24	Fri 1/19/24	No
4444	4444	4.6.3	4.6.3.3	7.2.1.69.3 Provide Feedback on Monthly Status Report	0 days	Fri 1/19/24	Fri 1/19/24	No
4445	4445	4.6.2.3	4.6.3.3	7.2.1.69.4 Incorporate Feedback on Monthly Status Report	2 days	Mon 1/22/24	Tue 1/23/24	No
4446	4446	4.6.3	4.6.3.3	7.2.1.69.5 Submit Final Version of Monthly Status Report	0 days	Tue 1/23/24	Tue 1/23/24	No
4447	4447	4.6.2.3	4.6.3.3	7.2.1.69.6 Review and Verify Feedback on Monthly Status Report	2 days	Wed 1/24/24	Thu 1/25/24	No
4448	4448	4.6.2.3	4.6.3.3	7.2.1.69.7 Approve Monthly Status Report	0 days	Thu 1/25/24	Thu 1/25/24	No
4449	**4449**	**4.6.2.3**	**4.6.3.3**	**7.2.1.70 Monthly Status Reports 70**	**8 days**	**Wed 2/14/24**	**Mon 2/26/24**	**No**
4450	4450	4.6.3	4.6.3.3	7.2.1.70.1 Submit Monthly Status Report	0 days	Wed 2/14/24	Wed 2/14/24	No
4451	4451	4.6.3	4.6.3.3	7.2.1.70.2 Review Monthly Status Report	4 days	Wed 2/14/24	Tue 2/20/24	No
4452	4452	4.6.3	4.6.3.3	7.2.1.70.3 Provide Feedback on Monthly Status Report	0 days	Tue 2/20/24	Tue 2/20/24	No
4453	4453	4.6.2.3	4.6.3.3	7.2.1.70.4 Incorporate Feedback on Monthly Status Report	2 days	Wed 2/21/24	Thu 2/22/24	No
4454	4454	4.6.3	4.6.3.3	7.2.1.70.5 Submit Final Version of Monthly Status Report	0 days	Thu 2/22/24	Thu 2/22/24	No
4455	4455	4.6.2.3	4.6.3.3	7.2.1.70.6 Review and Verify Feedback on Monthly Status Report	2 days	Fri 2/23/24	Mon 2/26/24	No
4456	4456	4.6.2.3	4.6.3.3	7.2.1.70.7 Approve Monthly Status Report	0 days	Mon 2/26/24	Mon 2/26/24	No
4457	**4457**	**4.6.2.3**	**4.6.3.3**	**7.2.1.71 Monthly Status Reports 71**	**9 days**	**Thu 3/14/24**	**Tue 3/26/24**	**No**
4458	4458	4.6.3	4.6.3.3	7.2.1.71.1 Submit Monthly Status Report	0 days	Thu 3/14/24	Thu 3/14/24	No
4459	4459	4.6.3	4.6.3.3	7.2.1.71.2 Review Monthly Status Report	5 days	Thu 3/14/24	Wed 3/20/24	No
4460	4460	4.6.3	4.6.3.3	7.2.1.71.3 Provide Feedback on Monthly Status Report	0 days	Wed 3/20/24	Wed 3/20/24	No
4461	4461	4.6.2.3	4.6.3.3	7.2.1.71.4 Incorporate Feedback on Monthly Status Report	2 days	Thu 3/21/24	Fri 3/22/24	No
4462	4462	4.6.3	4.6.3.3	7.2.1.71.5 Submit Final Version of Monthly Status Report	0 days	Fri 3/22/24	Fri 3/22/24	No
4463	4463	4.6.2.3	4.6.3.3	7.2.1.71.6 Review and Verify Feedback on Monthly Status Report	2 days	Mon 3/25/24	Tue 3/26/24	No
4464	4464	4.6.2.3	4.6.3.3	7.2.1.71.7 Approve Monthly Status Report	0 days	Tue 3/26/24	Tue 3/26/24	No
4465	**4465**	**4.6.2.3**	**4.6.3.3**	**7.2.1.72 Monthly Status Reports 72**	**11 days**	**Fri 4/12/24**	**Fri 4/26/24**	**No**
4466	4466	4.6.3	4.6.3.3	7.2.1.72.1 Submit Monthly Status Report	0 days	Fri 4/12/24	Fri 4/12/24	No



Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Critical
Milestone	Inactive Task	Manual Summary Rollup	Critical Split
Summary	Inactive Milestone	Manual Summary	Progress
Project Summary	Inactive Summary	Start-only	Deadline

ID	ID	Task Code	WPID	Name	Duration	Start	Finish	Milestone
4467	4467	4.6.3	4.6.3.3	7.2.1.72.2 Review Monthly Status Report	7 days	Fri 4/12/24	Mon 4/22/24	No
4468	4468	4.6.3	4.6.3.3	7.2.1.72.3 Provide Feedback on Monthly Status Report	0 days	Mon 4/22/24	Mon 4/22/24	No
4469	4469	4.6.2.3	4.6.3.3	7.2.1.72.4 Incorporate Feedback on Monthly Status Report	2 days	Tue 4/23/24	Wed 4/24/24	No
4470	4470	4.6.3	4.6.3.3	7.2.1.72.5 Submit Final Version of Monthly Status Report	0 days	Wed 4/24/24	Wed 4/24/24	No
4471	4471	4.6.2.3	4.6.3.3	7.2.1.72.6 Review and Verify Feedback on Monthly Status Report	2 days	Thu 4/25/24	Fri 4/26/24	No
4472	4472	4.6.2.3	4.6.3.3	7.2.1.72.7 Approve Monthly Status Report	0 days	Fri 4/26/24	Fri 4/26/24	No
4473	**4473**	**4.3**		**7.3 Other Activities**	**1464 days**	**Thu 6/21/18**	**Wed 5/1/24**	**No**
4474	**4474**	**4.4**		**7.3.1 Project Facility Tasks**	**1464 days**	**Thu 6/21/18**	**Wed 5/1/24**	**No**
4475	**4475**	**4.4**		**7.3.1.1 Move In Tasks**	**20 days**	**Thu 6/21/18**	**Thu 7/19/18**	**No**
4476	4476	4.4		7.3.1.1.1 Provide IRS Training to Collocated Staff	20 days	Thu 6/21/18	Thu 7/19/18	No
4477	4477	4.4		7.3.1.1.2 Provide Clean Desk Training to Collocated Staff	20 days	Thu 6/21/18	Thu 7/19/18	No
4478	4478	4.4		7.3.1.1.3 Provide Collocated Staff with Welcome Packet with Child Support specific Policy and Procedure Materials	20 days	Thu 6/21/18	Thu 7/19/18	No
4479	4479	4.4		7.3.1.1.4 Establish Rapport and Communication with the Landlord for Facility Issues	20 days	Thu 6/21/18	Thu 7/19/18	No
4480	**4480**	**4.4**		**7.3.1.2 Ongoing Tasks**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4481	**4481**	**4.4**		**7.3.1.2.1 Conduct Monthly Recurring Walkthroughs of Facility for IRS Compliance**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4553	**4553**	**4.4**		**7.3.1.2.2 Onboard State and Project Staff According to IRS, OCSE, State and Vendor Security Requirements**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4625	**4625**	**4.4**		**7.3.1.2.3 Conduct Ongoing IRS Publication 1075 Procedures including clean desk policy, screen locking, etc.**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4697	**4697**	**4.4**		**7.3.1.2.4 Conduct Safety Inspections and Tests of the Facility**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4769	**4769**	**4.4**		**7.3.1.2.5 Provide for Supplies, Telephony, Power, Wifi, Etc. for the Facility**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**
4841	**4841**	**4.4**		**7.3.1.2.6 Monitor Physical Security including Keys, Badges, PIN Cards and Combination Locks**	**1455 days**	**Thu 7/5/18**	**Wed 5/1/24**	**No**



Task	External Tasks	Manual Task	Finish-only		
Split	External Milestone	Duration-only	Critical		
Milestone	Inactive Task	Manual Summary Rollup	Critical Split		
Summary	Inactive Milestone	Manual Summary	Progress		
Project Summary	Inactive Summary	Start-only	Deadline		

Requirements Matrix

Section X

11.2.2.10 Section X – Requirements Matrix
Vendors must include their completed requirements matrix (refer to Attachment L, Requirements Matrix) in this section.

Due to the confidential nature of our response throughout all the Functional requirements for our response of the Functional table of Section X: Requirements Matrix, pages X-2 to X-33, Deloitte has provided this section in Part 1B – Confidential Technical Submission. This has been noted on Attachment A Confidentiality and Certification of Indemnification.

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
3	**Technical Requirements and Elaborations**	***Yes***	
3.1	Core Architecture	***Yes***	***S-Standard*** ***The CA CSE system incorporates open standards per guidelines from reference model such as Simple Object Access Protocol (SOAP), Web Services, XML, and Java Enterprise Edition (JEE). Our technical architecture is compatible with IEEE standards, the ITIL framework, and NIEM guidelines. It uses industry standard hardware and software and is compatible with existing DWSS infrastructure.***
3.2	Archive and Purge	***Yes***	***C – Custom Design and Development*** ***CA CSE system does not currently support archive and purge functionality for the production database. Customization is required to establish this functionality. We work with DWSS to align with Nevada-specific retention requirements.***
3.3	Tiered and Modular Architecture	***Yes***	***S – Standard Function.*** ***CA CSE is a multi-tiered application and has multiple layers that perform specific functions. This makes it tiered as well as modular, addressing separation of concern in terms of application logic and loose coupling for enhanced maintainability.***
3.4	Languages	***Yes***	***S – Standard Function*** ***Primary programming language for CA CSE is Java™ based which is a modern language. We also use Commercial off-the-shelf (COTS) product such as Filenet P8, SAP Business Objects and Smart Coummincations SmartCOMM that are service oriented architecture based tools for Content Management, Business Intelligence and Document generation functions respectively. We convert the CA CSE components that use Struts framework to Spring MVC to meet DWSS standards.***
3.5	Performance	***Yes***	***S- Standard*** ***CA CSE is proven system that is modular and scalable. We propose a highly available clustered environment. The web, application and database servers are clustered with no single point of failure. We propose the use of performance monitoring tools that help in***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			monitoring CPU and Memory usage. These tools provide diagnostic capabilities that help resolve performance bottlenecks.
3.6	Communications	***Yes***	***M – Modification Required*** ***CA CSE system supports communication protocols like HTTP/HTTPS and email. Customization is required to adapt the solution to include automated SMS text messaging. We work with DWSS to incorporate integration with SMS gateway that DWSS may already have agreements with or procure. We also work with DWSS to implement JSON and XML file structure with partners who support such file types.***
3.7	System Backup and Recovery	***Yes***	***S-Standard*** ***We leverage state's existing Disaster Recovery procedures. We work with DWSS to define the RTO and RPO for NCSEAS.***
3.8	Database	***Yes***	
3.8.1	Master Data Management	***Yes***	***Modification required*** ***CA CSE system does not use an external Master Data Management solution. We use the role based access control features of CA CSE system to restrict access to data stewards or other authorized users. We work with DWSS to define changes to the batch processes that populate master data to allow for manual intervention by data stewards.***
3.8.2	Database Management System	***Yes***	***Standard*** ***Our solution uses DB2 as Relational Database Management System (RDBMS), which is robust, proven, current, and commercially available. DB2 is designed to store, analyze and retrieve the data efficiently.***
3.8.3	Database Design	***Yes***	***Standard*** ***CA CSE system database supports all relational database concepts such as primary and foreign key constraints and one to one and one to many relationship types.***
3.9	Security	***Yes***	

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
3.9.1	Security Standards	***Yes***	***C – Custom development needed*** ***To meet regulatory and contractual requirements, we leverage our security risk framework as a baseline for security controls. The framework has a common repository of information security requirements containing authoritative sources from more than 300 different laws and industry sources, including IRS 1075, NIST SP 800, OCSE-specified requirements and HIPAA.***
3.9.2	Security Architecture	***Yes***	***M – Modification required*** ***CA CSE system supports a robust security architecture including security controls in the data access tier, single sign-on, protection of confidential cases and role-based security. The NCSEAS system will be retrofitted to support the State's existing Security infrastructure.***
3.9.3	Passwords	***Yes***	***M – Modification required*** ***CA CSE system fully supports the use and enforcement of passwords to uniquely identify a system user. Customization is required to adhere to applicable Nevada-specific password standard.***
3.9.4	IRS Data	***Yes***	***S – Standard function*** ***CA CSE solution meets basic requirements for the protection of IRS data as required by IRS Pub 1075.***
3.9.5	Audit, Logging and Reporting	***Yes***	***M – Modification required*** ***We work with State to configure the NCSEAS system, the security components and the IBM DB2 databases to generate audit data per auditing and accountability requirements and to integrate the NCSEAS solution with the State's Splunk tool implementation for audit data correlation and reporting.***
3.10	Interfaces	***Yes***	
3.10.1	General	***Yes***	***M – Modification Required*** ***CA CSE System provides functionality to process Federal, State and Third party interfaces. The Federal interfaces can be implemented "as-is" for DWSS. We work with DWSS to modify the state specific interfaces such as the IVA interface that is the most critical***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			interface in child support. We leverage our experience with NOMADS to implement this functionality for DWSS.
3.10.2	Interface Architecture	***Yes***	***M – Modification Required*** ***All the current interfaces processed by CA CSE are file-based exchanges that are processed in batch. We recognize the potential for a real-time web service based information exchange with the employer portal interface.***
3.11	User Interface	***Yes***	***M - Modification Required***
3.11.1	User Interface Architecture	***Yes***	***M- Modification Required*** ***The CA CSE system offers a modern graphical user interface. We update the user interface to reflect DWSS branding and color schemes.***
3.11.2	User Interface Standards and Practices	***Yes***	***M-Modification Required*** ***The CA CSE system provides consistent user-interface design patterns such as a well-defined navigation, error messages, screen validations and user-friendly error messages. These principles are consistently followed in NCSEAS as well. We update the struts framework to spring MVC.***
3.11.3	508 Compliance	***Yes***	***S-Standard*** ***The CA CSE system is a federally certified system and provides functionality for section 508 compliance. NCSEAS will inherit the section 508 compliance features of the CA CSE system. We use Total Validator tool to verify section 508 compliance of any source code that is developed or modified for NCSEAS system.***
3.12	Document Generation and Document Management	***Yes***	
3.12.1	Document Generation	***Yes***	***C – Custom Design and Development*** ***We propose to use Smart Coummincations SmartCOMM as the document generation tool to maximize DWSS's investments. We custom code the document templates in Smart Coummincations SmartCOMM and integrate it with NCSEAS solution. We assume that the Agency will provide us the translated templates for***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			documents that are to be generated in Spanish. We have estimated a total of 300 documents for NCSEAS.
3.12.2	Document Management	***Yes***	***C – Custom Design and Development*** ***We propose to use FileNet P8 as the electronic content management software. We use FileNet to index, store documents and other images. We use FileNet retention capabilities to custom develop archive and purge functionality for documents and images.***
3.13	Data Warehouse and Business Intelligence	***Yes***	
3.13.1	General	***Yes***	***C – Custom design and development*** ***We integrate with the existing NOMADS Data warehouse. We develop custom Extract, Transform and Load scripts to load the data from NCSEAS system to the existing NOMADS data warehouse, thereby preserving reports to the extent possible. In addition we develop the Federal reports based on the NCSEAS system and render it from the NOMADS data warehouse.***
3.13.2	Data Warehouse Architecture	***Yes***	***M - Modification Required*** ***We develop Extract Transform and Load procedures to load data from NCSEAS data structures to the NOMADS data warehouse. We replace existing ETL routines to preserve the existing reports to the extent the NCSEAS data supports these reports. We also transfer the CA CSE reports to the SAP BO data warehouse to modernize it with the new reports.***
3.13.3	Business Intelligence	***Yes***	***M - Modification Required*** ***We leverage existing NOMADS data warehouse using SAP data services. SAP Business Objects is used to provide business intelligence and reporting capabilities. We work with DWSS to understand the existing reporting solution that is built in the NOMADS data warehouse. We analyze its capabilities and provide the necessary data from NCSEAS.***
3.14	Code Quality and Maintainability	***Yes***	***S - Standard Function***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			We propose the use of the SONAR code quality tool to measure and report on code quality. We also incorporate code review using peer review and review by architects to promote code quality.
3.15	Development Tools	***Yes***	***S – Standard Function*** ***We selected development following development tools that are consistent with DWSS standards and in some cases tools that DWSS currently use.*** ***Eclipse as the integrate development environment for Java development*** ***Smart Coummincations SmartCOMM for developing document templates*** ***SAP business objects studio for development of business intelligence reports*** ***JIRA and JAMA for documenting requirements and test cases and establishing traceability.***
3.16	Automated Referral Processing	***Yes***	***M - Modification required*** ***The CA CSE solution supports automatic referral processing for referrals originating from IVA, IVE, Title XIX and Child Support Enforcement Network (CSENeT). We modify the data structures of the file exchanges to align it with the interfacing agencies that provide data for DWSS.***
3.17	Calendar Management	***Yes***	***S – Standard Function*** ***The CA CSE system has a calendar feature that supports the management of appointments as well as events. Calendars can be organized at the individual level (e.g. for case workers) as well as for general events across an office (e.g., administrative hearings, genetic testing).***
3.18	Alerts Management	***Yes***	***S – Standard Function*** ***The CA CSE system fully supports the creation of special attention alerts that align with a specific data or information scenario. Alert generation is integrated with the business workflow so that they can be triggered automatically if needed - e.g. when screening/ editing incoming referral data, automated alerts are generated for identified data issues. Alerts can also be created manually by case workers.***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
3.19	Customer Service	***Yes***	***M – Modification Required*** ***The CA CSE does not currently support an extract of data to a separate data repository to service the needs of an IVR solution. An enhancement is required to establish an extract or provide web services integration and provide required data for the Nevada-specific IVR system.*** ***The CA CSE system includes a self-service web site that supports demographic updates, foreign language selection, viewing case information, and informational updates. Customization is required to support electronic payments and the generation of documents via the web site.*** ***CA CSE system uses Adobe Lifecycle as its document generation platform. Deloitte's solution proposes Smart Coummincations SmartCOMM as the document generation platform for Nevada. This requires enhancements to the base solution framework.***
4	**Project Requirements**	***Yes***	
4.1	Project Methodology	***Yes***	***S – Standard Function*** ***Deloitte follows a mature project methodology which is based on leading practices from the Project Management Institute (PMI) including the Project Management Body of Knowledge (PMBOK) and Capability Maturity Model Integration (CMMI) and honed through our experience in numerous Child Support Enforcement and Health and Human Services (HHS) engagements.*** ***We will be building on our CSE experience in California, Oregon, Florida and Pennsylvania. Our methodology will provide the NCSEAS project team with a set of tools, templates, and accelerators to help jumpstart development of deliverables and facilitate delivery of high-quality work products. This methodology fully aligns to the needs of the NCSEAS project.*** ***Our project management approach is collaborative and begins with reviewing the project management plan and activities with the PM contractor, QA contractor, IV&V contractor, and DWSS leaders to confirm alignment with overall project governance and the project schedule defined by DWSS and the PM contractor. The approach includes rigorous project management discipline, EVD methodology, and deep knowledge of functional and technical***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			environments in large, complex information systems like NCSEAS. Hence tailoring the approach to proactively manage issues and risk. ***The Project Management Center (PMC) supports and automates the project management methodology. PMC customizes Hewlett Packard's Project and Portfolio Management (PPM) software tool that is tuned for large-scale system implementation and transfer projects. We have successfully employed PMC on many large HHS/CSE projects and previous projects for DWSS and recommend it for the NCSEAS project's management approach. Once the PM Contractor and DWSS leadership identify and define the project planning structure and guidelines, the plans can be fed into the PMC tool to manage the conformance of project team members and their work to these plans. PMC is used for management of action items, change requests, issues, risks, and decisions. It comes with pre-defined and customizable dashboards, workflows, portals, and reports, providing insight into the project's health. DWSS and identified stakeholders are provided direct access to PMC so that they can monitor the progress of the project at any time, providing greater transparency of project status.*** ***Finally, our methodology is tailored to transfer solutions and leverages our experience of CA CSE transfer to Oregon***
4.1.1	Waterfall SDLC	***Yes***	***S – Standard Function*** ***Deloitte's Enterprise Value Delivery (EVD) methodology is a waterfall approach which provides a comprehensive system development life cycle (SDLC) approach that uniquely combines flexible, reusable service-oriented capabilities, technical frameworks, tools, accelerators, and Deloitte's extensive experience delivering large-scale technology solutions over the past 30 years in the child support enforcement (CSE) arena. The cornerstone of the EVD methodology is a series of detailed and integrated phases, disciplines, and sub phases that provide a framework and roadmap for an effective execution of the NCSEAS project with artifacts developed during each phase and serving as an input to the next phase. The methodology is flexible to enable an iterative waterfall approach where some of the phases and sub-***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			phases can have an overlap accelerating the progress of the project and optimizing the time of stakeholders.
4.1.2	Waterfall SDLC Experience	***Yes***	***S – Standard Function*** ***For more than 30 years, Deloitte has designed, developed, implemented, or maintained large-scale, federally certified child support systems using our EVD waterfall SDLC methodology. Deloitte has developed a wealth of experience with industry-leading practices for large-scale business transformation initiatives. California CCSAS was successfully implemented using Deloitte's EVD methodology.*** ***We employ existing knowledge and experiences from past DWSS and similar project. This provides accelerated startup from familiarity with DWSS organization and processes. As a result, we foster a collaborative environment that shares Deloitte's child support enforcement experience from California, Florida, Pennsylvania, and ongoing in Oregon, and specifically insights into how the CA CSE system can be transferred and customized to meet Nevada's requirement.***
4.1.3	Desired Elaborations on Waterfall SDLC	***Yes***	***S – Standard Function*** ***Deloitte's EVD methodology and processes and our team's experience supports the following beneficial elaborations on the basic PMBOK-waterfall scheme:*** ***Our methodology is tailored to be performed as an iterative waterfall process enabling us to incrementally complete the requirements, design, and development for modules in separate timelines enabling us to provide demonstrations and conduct system testing of pieces of the system while other pieces are still under design and development.*** ***Our Deloitte project team has access to a large team of practitioners within the firm who have extensive functional and technical knowledge of CSE systems from other states. They have a deep understanding of the policies and certification requirements enabling our team to provide a high quality solution for the State. Our team of specialists from the base CA CSE project as well the OR Origin project where the CA CSE solution is being transferred share lessons learned and best practices, and provide feedback on***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			design concepts and working code during design and development phases. ***As the current vendor supporting the CA CSE system, we can demonstrate a working prototype of the system to serve as an accelerator to examine and test-fit aspects of the system design.*** ***Our iterative waterfall methodology enables individual modules to be viewed and tested before the fully-built system will be available. As and when modules are completed, regression testing and smoke testing is performed manually and through automated testing tools.***
4.2	Conversion of Legacy Data	***Yes***	***S – Standard Function*** ***Deloitte's experience with conversion engagements in California, Michigan, Pennsylvania, and Florida puts us in a unique position to lower the risk of conversion of Nevada's legacy system to the new NCSEAS system. Deloitte has over 300 trained CSE resources having experience in different state CSE conversion efforts similar to Nevada.*** ***The Deloitte team's approach for converting data from legacy systems has demonstrated to be straightforward and very effective. The key aspects of Deloitte's approach are:*** ***Iterative conversion approach*** ***Collaboration in coordinating the conversion activities*** ***Data cleansing*** ***Maintaining data integrity in the future***
4.2.1	Sources of Legacy Data	***Yes***	***S – Standard Function*** ***Based on our experience of working with other projects with DWSS, Deloitte has a sound knowledge of the NOMADS legacy data and sources of data, the types of data anomalies and quality issues likely to arise, providing us the advantage of knowing what to expect for conversion.***
4.2.2	Legacy Data Background	***Yes***	***S – Standard Function*** ***Deloitte has extensive experience with the NOMADS system and is currently assisting the Agency with its maintenance and operation needs on the NOMADS system. Due to this association, Deloitte has detailed knowledge of the primary, secondary and process data in NOMADS system.***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			Primary data is generally collected from users directly by the case workers. Secondary data could be from external interfaces and other states. Process data is obtained when the primary/secondary data is modified due to a business need. ***Deloitte also had a good understanding of all the CSE logical entities in the NOMADS database and interoperability with the IV-A system.***
4.2.3	Legacy Data and SDLC	***Yes***	***S – Standard Function*** ***Deloitte approach to a successful conversion process through the SDLC includes the following four steps:*** ***Identify. The data in legacy system will be analyzed and identified for conversion*** ***Extract. The identified data will be extracted from legacy database and transformed using ETL tool, achieve desired quality and transformation.*** ***Transform. The extracted data will be cleansed and transformed to suit NVCSEA solution database*** ***Load. The transformed data is loaded into NVCSEA solution database*** ***We follow an iterative conversion approach through the above steps to cleanse and convert the data across the SDLC phases of the project.***
4.3	Current Computing Environment / Reuse	***Yes***	***S – Standard Function*** ***Based on our 30 years' experience of designing, developing, implementing, or maintaining large-scale, federally certified child support systems, we possess a deep understanding of the tools required to successfully execute, implement, and manage the NCSEAS solution and project.*** ***We use our standardized approach to assess the tools available in your current computing environment across various criteria such as usability, performance, scalability, cost, support, and flexibility to leverage the leading tools that provide the maximum benefits to Nevada across all these criteria.*** ***Deloitte also conducts a detailed and thorough assessment of alternate tools and solutions that will be utilized for various purposes and functions on the NCSEAS solution. Many of these tools are integrated with the base California CSE solution being***

REQUIREMENTS Refer to Attachment O – Implementation Vendor Requirements		MEETS REQUIREMENT?	COMMENTS
#	**Requirement**	**Yes/No**	**Description of how the vendor/proposed solution will meet each requirement.**
			transferred to Nevada providing you a suite of best of breed, production proven tools that are flexible to customize and scale. Deloitte also offers our integrated Application Lifecycle Management (ALM) suite of open source or low cost project management tools that accelerate project initiation, improve the efficiency of project management, provide transparency of project progress, and improve the quality of the solution.

Other Informational Material

Section XI

11.2.2.11 Section XI – Other Informational Material

Vendors shall include any other applicable reference material in this section clearly cross referenced with the proposal.

Deloitte provides the following other Informational Material:

- ***11.1 NCSEAS Hardware and Software Sizing Information***
- ***11.2 Conditions and Provisions***

11.1 NCSEAS Hardware and Software Sizing Information

Our proposed hardware architecture has been carefully thought out and planned based off of Deloitte's Child Support experience in other States, as well as to capitalize on Nevada's existing technology infrastructure. In our hardware sizing and pricing estimates, we have accounted for all of the various environments which will be needed to support a project of this size and complexity. This includes environments to support Production and Non-Production (training, testing, development, etc.) activities. In addition to the environments that we have planned to stand-up to directly support the project, we have also factored in a disaster recovery environment. We architected our solution to re-use the Non-Production environments to support disaster recovery. If the need to use the disaster recovery environment arose, the non-production environments would be brought down and the mirrored versions of production brought up. This a strategy which Deloitte has successfully used in numerous other States, to provide robust disaster recovery coverage without the need to waste resources and money on a dedicated environment, which is hopefully never used.

Based on the above mentioned guiding principles and our detailed sizing based on the Business Metrics described in this Appendix, Deloitte has worked extensively with product vendors to size and price what we believe is a great value offering. Deloitte's experience in working with these vendors, our understanding of the business domain and our expertise in implementing the technologies proposed for our solution make us the best suited to help the State implement a large and complex solution for Child Support Enforcement.

Business Metrics

Type	Metric	Count	Measure
Application Server	Think Time per User (Time a user spends per page) for Case Management	40	Seconds
Application Server	Think Time per User (Time a user spends per page) for Self-Service	300	Seconds
Application Server	Page Requests in Peak Hour per User for Self Service	24	Page Requests/Hour/User
Application Server	Peak number of visits in 60 minutes for Self Service	7,500	Visits/Hour
Application Server	Pages served per second by application server for Self Service	1,126	Pages/Second
Application Server	Page Requests in Peak Hour per User for Case Management	136	Page Requests/Hour/User
Application Server	Peak number of visits in 60 minutes for Case Management	4,500	Visits/Hour
Application Server	Pages served per second by application server for Case management	226	Pages/Second
Application Server	Average Number of Visits/Day for Self Service	75,000	Avg Visits/Day
Application Server	Static Pages Per Session for Self Service	1	Pages/Session
Application Server	Dynamic Pages Per Session for Self Service	10	Pages/Session
Application Server	Average Minimum Servlets/JSPs for Self Service	1	Servlets/JSP
Application Server	Average Maximum Servlets/JSPs for Self Service	3	Servlets/JSP
Application Server	EJBs Session for Self Service	1	Session/JSP
Application Server	EJB Entities/JSPs for Self Service	1	Entities/JSP
Application Server	User Logons per peak Hour for Self Service	1	Logins/Hour
Application Server	Application Transactions/Second for Self Service	8	Transactions/Second
Application Server	Web Services Messages in Peak Hour for Self Service	40	Messages/Hour
Application Server	Web Services Transactions Per Second for Self Service	3	Transactions/Second
Application Server	Average Number of Files/Page for Self Service	10	Files/Page

Type	Metric	Count	Measure
Application Server	Average Size of Files Served for Self Service	1.75	KB/File
Application Server	Average Number of Visits/Day for Case Management	1,150	Avg Visits/Day
Application Server	Static Pages Per Session for Case Management	1	Pages/Session
Application Server	Dynamic Pages Per Session for Case Management	50	Pages/Session
Application Server	Average Minimum Servlets/JSPs for Case Management	2	Servlets/JSP
Application Server	Average Maximum Servlets/JSPs for Case Management	5	Servlets/JSP
Application Server	EJBs Session for Case Management	1	Session/JSP
Application Server	EJB Entities/JSPs for Case Management	1	Entities/JSP
Application Server	User Logons per peak Hour for Case Management	2	Logins/Hour
Application Server	Application Transactions/Second for Case Management	65	Transactions/Second
Application Server	Web Services Messages in Peak Hour for Case Management	120	Messages/Hour
Application Server	Web Services Transactions Per Second for Case Management	20	Transactions/Second
Application Server	Average Number of Files/Page for Case Management	20	Files/Page
Application Server	Average Size of Files Served for Case Management	1.75	KB/File
Application Server	Maximum Processor Utilization	80.00%	Percentage
Business	Cases Processed By Day	3,750	Cases/Day
Business	WebSphere Sizing Defined Active Users for Case Management	400	Users
Business	External Users for Self-Service	135,000	Users
Business	Active Individuals (unduplicated)	135,000	Individuals
Business	Current Concurrent Users for Self-Service	150	Users
Business	Maximum Concurrent Users for Self-Service	1,350	Users
Business	Current Concurrent Users for case Management	150	Users

Type	*Metric*	*Count*	*Measure*
Business	***Maximum Concurrent Users for Case Management***	***300***	***Users***
Business	***Name Matching Transactions/Sec***	***8***	***Transactions/minute***
Business	***Supervisor Access Users***	***45***	***Users***
Business	***Data Sharing and Analytics Reporting Users***	***100***	***Users***
Business	***Reporting Concurrent Users***	***10***	***Users***
Business	***UAT Testers***	***50***	***Users***
Business	***Functional end-users***	***450***	***Users***
Database Server	***Database connection accounts***	***50***	***Users***
Document Management	***Documents to be processed by Recognition Agent/Content Server***	***25***	***Percentage***
Document Management	***Pages per hour to be processed per Recognition Suite license***	***125***	***Pages/Hour***
Document Management	***Pages Per Year processed by Image Capture***	***552,632***	***Pages***
Document Management	***Thick Client Scanning input***	***50***	***Users***
Document Management	***Web based scanning input***	***100***	***Users***
Document Management	***Imaging Concurrent Users***	***125***	***Users***
Storage	***Expected Size of Database without Reporting based on current Michigan Production times 1.5***	***0.25***	***TB***
Storage	***Expected Size of Reporting Database based on current Michigan Production times 1.5***	***0.56***	***TB***
Storage	***Average file size of scanned image***	***100***	***KB/File***
Storage	***Total images in production storage over 5 years***	***0.75***	***TB***
Storage	***Total images in production storage over 7 years***	***1.05***	***TB***
Storage	***Total images in production storage over 9 years***	***1.20***	***TB***
Storage	***Pages per document assumed***	***3***	***Pages/Document***
Storage	***Current Legacy Databases***	***0.25***	***TB***

Type	Metric	Count	Measure
Storage	***Expected Conversion Production Database Staging size at Peak derived by adding Final Production Database size including Reporting + (2 x Legacy Conversion Database size)***	***1.35***	***TB***

Environments

The physical environments are broken down into three server types, as described in the table below:

Physical Environment	Additional Comments
Development	***Development supports SYS and DEV logical environments. Instances for upgrades/experimental will also reside in this server cluster.***
Non Production	***Non-Production supports all environments Integration and above with the exception of Production. Note that Production Staging is also on Non-Production.***
Production	***Hosts the runtime production environments.***

Disaster Recovery (DR) will be on the Development and Non-Production Server Hardware. It is passive DR from a server standpoint and warm DR from a data replication perspective. Passive servers imply that the server virtual machines will be restored from backups of server images. Warm DR here implies that based on the recovery point objectives set between the state's SAN replication appliances between primary and DR sites, the data will be available with lag at DR site. We assume that the State has some SAN/Data replication appliances to sync between DR and Primary data center. Physical Environment Mapping is true for 90% of the components. Exceptions are where NPRD servers provide both DEV and NPRD support due to efficiencies in licensing.

The logical environments to support SDLC activities are described in the table below:

Logical Environment	*Environment Description*	*Physical Environments*	*Comments*
DEV	***Development***	***Development***	***Dev environment is the base environment set up for all developers to perform unit testing and overall development testing (including that of training materials) of various components through the life-cycle.***
SYS	***System Testing***	***Development***	***Selective delivery from Development occurs to System Testing. All subsequent migrations to higher environments will be full copies from SYS to UAT to TRN, etc.***
CONV	***Conversion***	***Development***	***Conversion environment is the environment set up for conversion developers to perform development, unit testing of the conversion scripts and converted data. Deployment versions of the application will be from the main stream.*** ***The SYS, TRAIN, and UAT environments will each have a conversion version of their databases that will be used to support functional testing of the converted data.***
PERF	***Performance Testing***	***Non-Production***	***Scaled performance tests will be done on Non-Production cluster during off-hours. Basic instances for testing performance test scripts will be available throughout, however for the scaled performance test prior to production, other instances/LPARs will be turned off for Non-Production to support dedicated large performance testing. Performance testing can be done on Non-Production to a production scale of 1:1 if other LPARs are turned off or relatively inactive.***
UAT	***User Acceptance Testing***	***Non-Production***	***Artifacts from System testing and Integration testing will be propagated to the User Acceptance testing for testing by state users. All release will be certified in the User Acceptance Testing environment before propagating to Production.***
TRN	***Training***	***Non-Production***	***Training materials will be tested for completeness in the training-production environment. This environment will be closer to the Production environment from a production release perspective.***
PRD - STAGING	***Production – Staging***	***Non-Production***	***During maintenance mode, all builds must go through Production Staging including Production patches.***
PRD	***Production***	***Production***	***Production environment where the NCSEAS solution will be hosted.***

Software Product Reference

Software Name	Function	Version	Category	Vendor
Adobe RoboHelp	Used for Help text authoring	2017 Release	Authoring	Adobe
Articulate 360	Used for content creation for e-learning and documentation	360	Authoring	Articulate
Atlassian FishEye	Used for connecting Perforce Helix with JIRA	4.x	Version Control	Atlassian
Atlassian JIRA	Used for managing defects across all phases of the project	7.x	Defects Management & Application Lifecycle Management	Atlassian
Cisco AnyConnect VPN	Used for VPN into State network from Project Site	Plus	Workstations	Cisco
Eclipse IDE	Used as Integrated development environment for application code	Oxygen	Development Tools	Open Source
Erwin Data Modeler	Used for Data Modeling	9.7	Information Management	Erwin
HP Fortify Static Code Analyzer	Used for static code analysis and to perform secure coding quality checks	4.x	Security	HP
HP WebInspect	Used for dynamic application security testing of the code	10.x	Security	HP
IBM Data Studio	Used for querying database	4.x	Development Tools	IBM
IBM DB2 Enterprise Server Edition	Used as Database Engine	11.x	Information Management	IBM
IBM Performance Management Offering (Optim)	Used for Database Monitoring	11.x	Monitoring	IBM

Software Name	*Function*	*Version*	*Category*	*Vendor*
IBM Content Foundation (FileNet P8 Content Manager)	*Used as Enterprise Content Management system for document management*	*5.x*	*Enterprise Content Management*	*IBM*
IBM Datacap	*Used to streamline the capture, recognition and classification of business documents*	*9.x*	*Document Scanning*	*IBM*
IBM HTTP Server	*Used as Web Server*	*9.x*	*Web Server*	*IBM*
IBM Message Queue (MQ)	*Used for Message Queue*	*9.x*	*Middleware*	*IBM*
IBM Application Performance Management (APM)	*Used for monitoring of Application and Web Servers*	*7.x*	*Monitoring*	*IBM*
IBM Tivoli Workload Scheduler	*Used as Scheduling tool to automate and manage batch workloads*	*9.x*	*Batch Scheduler*	*IBM*
IBM WebSphere Application Server ND	*Used as Application Server runtime*	*9.x*	*Application Server*	*IBM*
IBM WebSphere Deployment Manager	*Used as Deployment manager for WebSphere nodes*	*9.x*	*Middleware*	*IBM*
JAMA	*Used for Managing Requirements Traceability*	*8.x*	*Requirements Management*	*JAMA*
Javadoc	*Used as code documentation utility*	*1.8+*	*Development Tools*	*Open Source*
Jenkins	*Used as Build Engine for Continuous Integration*	*2.x*	*Configuration Management*	*Open Source*
JMeter	*Used as Performance load simulation tool*	*3.x*	*Testing*	*Open Source*
JUnit	*Used as Unit Testing utility*	*4.12*	*Development Tools*	*Open Source*
Liquibase	*Used for managing Database Changes & Deployments*	*3.x*	*Configuration Management*	*Open Source*
Microsoft Office	*Used to support documentation*	*2016*	*Authoring*	*Microsoft*
Microsoft Project	*Used to support project planning*	*2016*	*Authoring*	*Microsoft*

Software Name	Function	Version	Category	Vendor
Microsoft Visio	Used to support documentation of process flows	2016	Authoring	Microsoft
Project Management Center (PMC)	Project management and control	NA	Project Management	Deloitte
Perforce Helix	Used for managing code	2016.x	Version Control	Perforce
PuTTY	Used as Telnet/ssh utility	0.70	Development Tools	Open Source
SAP Business Objects XIR2	Used for generating reports	4.2	Reporting Tools	SAP
SAP Data Services EDGE	Used for Extract, Transform, Load (ETL) Operations	4.2	Data Conversion	SAP
Selenium	Used for functional Testing	3.x	Testing	Open Source
SmartCOMM (Thunderhead)	Used for creating forms/correspondence	SC17	Client Communications Management	Smart Communications
Smart Bear SOAP UI	Used for testing Web Services	5.x	Testing	Smart Bear
SonarQube	Used as Code Quality Analysis Utility	6.5	Configuration Management	SONAR
Total Validator Basic Edition	Used for ADA Compliance Testing	7.5.2	Testing	Total Validator
USPS Address Validation	Used for validating addresses	2.87.x	Enterprise Service	USPS
WebSurveyor	Used for online survey	4.x	Survey Tool	WebSurveyor

Hardware Product Reference

Hardware Name	Function	Model	Category	Vendor
IBM Power8 based AIX server	Infrastructure compute nodes for hosting AIX guests	8284-22A	Server	IBM
HP Intel Xeon based Windows/RHEL server	Infrastructure compute nodes for hosting Windows/RHEL guests	HP DL 380	Server	HP

Server Sizing Reference

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
DEV-APP-V001	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V001_SS	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V002	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V002_SS	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V003	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V003_SS	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V004	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-APP-V004_SS	Development	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
DEV-COR-V001	Development	CCM	SmartCOMM (ThunderHead)	2	4	32	80	128	0	1	204.8	N/A	IBM AIX
DEV-DBR-P001	Development	DBR	IBM DB2 Enterprise Server Edition	1	2	64	160	176	512	102.4	281.6	614.4	IBM AIX
DEV-DBR-P002	Development	DBR	IBM DB2 Enterprise Server Edition	1	2	8	20	92	1024	20	147.2	120	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
DEV-EDW-V001	Development	EDW	IBM DB2 Enterprise Server Edition	3.4	4	18	160	176	819.2	102.4	281.6	614.4	IBM AIX
DEV-DMR-V001	Development	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	0	132.8	N/A	IBM AIX
DEV-DMR-V002_SS	Development	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	20	132.8	N/A	IBM AIX
DEV-MDW-V001	Development	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
DEV-MDW-V002	Development	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
DEV-WEB-V001	Development	WEB	IBM HTTP Server	0.5	1	2	10	86	0	1	137.6	N/A	IBM AIX
DEV-WEB-V001_SS	Development	WEB	IBM HTTP Server	0.5	1	2	10	86	0	1	137.6	N/A	IBM AIX
DEV-WEB-V002	Development	WEB	IBM HTTP Server	0.5	1	2	10	86	0	1	137.6	N/A	IBM AIX
DEV-WEB-V002_SS	Development	WEB	IBM HTTP Server	0.5	1	2	10	86	0	1	137.6	N/A	IBM AIX
DEV-ECM-V001	Development	CPE	IBM Content Platform Engine	1	1	8	20	92	0	147	N/A	1	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
DEV-DCS-V001	Development	DCS	Datacap Server	1	1	4	10	90	80	150	150	1	Windows 2012 Datacenter Edition
DEV-DCN-V001	Development	DCN	Datacap Navigator/Datacap Web Services	1	1	4	10	90	0	150	N/A	1	Windows 2012 Datacenter Edition
DEV-DCR-V001	Development	DCR	RuleRunner	2	2	6	10	90	80	150	0	1	Windows 2012 Datacenter Edition
DEV-ALM-V001	Development	ALM	JIRA, JAMA, Perforce Helix, Fisheye	2	4	4	10	86	0	1	137.6	N/A	Windows 2012 Datacenter Edition
DEV-BLD-V001	Development	BLD	Jenkins	1	2	2	10	104	0	1	166.4	N/A	Windows 2012 Datacenter Edition
DEV-ETE-V001	Development	ETE	SAP Data Services EDGE	1	1	20	10	104	49	1	166.4	N/A	Windows 2012 Datacenter Edition
DEV-OLA-V001	Development	OLA	SAP Business Objects XIR2	4	4	10	30	119	50	1	190.4	N/A	Windows 2012 Datacenter Edition

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
DEV-OLA-V002	Development	OLA	SAP Business Objects XIR2	4	4	10	30	119	50	1	190.4	N/A	Windows 2012 Datacenter Edition
NPRD-APP-V001	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V001_SS	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V002	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V002_SS	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V003	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V003_SS	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V004	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-APP-V004_SS	Non-Production	APP	IBM WebSphere Application Server ND	1	2	8	20	92	0	1	147.2	N/A	IBM AIX
NPRD-BAT-V001	Non-Production	BAT	IBM Tivoli Workload Scheduler	0.5	1	5	12.5	87.5	0	1	140	N/A	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
NPRD-COR-V001	Non-Production	CCM	SmartCOMM (ThunderHead)	2	4	32	80	128	0	1	204.8	N/A	IBM AIX
NPRD-COR-V002	Non-Production	CCM	SmartCOMM (ThunderHead)	2	4	32	80	128	0	1	204.8	N/A	IBM AIX
NPRD-DBR-P001	Non-Production	DBR	IBM DB2 Enterprise Server Edition	6	8	64	160	176	2048	1266.526316	281.6	1228.8	IBM AIX
NPRD-DBR-P002	Non-Production	DBR	IBM DB2 Enterprise Server Edition	6	8	64	160	176	2048	1266.526316	281.6	1228.8	IBM AIX
NPRD-DMR-V001	Non-Production	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	0	132.8	N/A	IBM AIX
NPRD-DMR-V001_SS	Non-Production	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	0	132.8	N/A	IBM AIX
NPRD-MDW-V001	Non-Production	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
NPRD-MQS-V002	Non-Production	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
NPRD-WEB-V001	Non-Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
NPRD-WEB-V001_SS	Non-Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
NPRD-WEB-V002	Non-Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
NPRD-WEB-V002_SS	Non-Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
NPRD-ALM-V001	Non-Production	ALM	JIRA, JAMA, Perforce Helix, Fisheye	3	6	8	10	104	0	1	166.4	N/A	Windows 2012 Datacenter Edition
NPRD-BLD-V001	Non-Production	BLD	Jenkins	1	2	4	10	104	0	1	166.4	N/A	Windows 2012 Datacenter Edition
NPRD-ALT-V001	Non-Production	ALT	Selenium, JMeter Master Server	2	2	8	10	86	0	1	137.6	N/A	Windows 2012 Datacenter Edition
NPRD-ETE-V001	Non-Production	ETE	SAP Data Services EDGE	1	1	24	30	116	755	1	185.6	453	Windows 2012 Datacenter Edition
NPRD-OLA-V001	Non-Production	OLA	SAP Business Objects XIR2	8	8	12	30	119	50	1	190.4	N/A	Windows 2012

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
													Datacenter Edition
NPRD-OLA-V002	Non-Production	OLA	SAP Business Objects XIR2	8	8	12	30	119	50	1	190.4	N/A	Windows 2012 Datacenter Edition
NPRD-PRF-V001	Non-Production	PRF	JMeter load generator	2	2	16	10	86	0	1	137.6	N/A	Windows 2012 Datacenter Edition
NPRD-PRF-V002	Non-Production	PRF	JMeter load generator	2	2	16	10	86	0	1	137.6	N/A	Windows 2012 Datacenter Edition
NPRD-EDW-V001	Non-Production	EDW	IBM DB2 Enterprise Server Edition	3.4	4	18	160	176	1638.4	1266.526316	281.6	1228.8	IBM AIX
NPRD-EDW-V002	Non-Production	EDW	IBM DB2 Enterprise Server Edition	3.4	4	18	160	176	1638.4	1266.526316	281.6	1228.8	IBM AIX
NPRD-ECM-V001	Non-Production	CPE	IBM Content Platform Engine	1	1	8	20	92	0	147	N/A	1	IBM AIX
NPRD-ECM-V002	Non-Production	CPE	IBM Content Platform Engine	1	1	8	20	92	0	147	N/A	1	IBM AIX
NPRD-DCS-V001	Non-Production	DCS	Datacap Server	1	1	4	10	90	80	150	150	1	Windows 2012

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
													Datacenter Edition
NPRD-DCN-V001	Non-Production	DCN	Datacap Navigator/Datacap Web Services	1	1	4	10	90	0	150	N/A	1	Windows 2012 Datacenter Edition
NPRD-DCR-V001	Non-Production	DCR	RuleRunner	2	2	6	10	90	0	150	0	1	Windows 2012 Datacenter Edition
NPRD-DCR-V002	Non-Production	DCR	RuleRunner	2	2	6	10	90	0	150	0	1	Windows 2012 Datacenter Edition
PRD-APP-V001	Production	APP	IBM WebSphere Application Server ND	1	2	16	20	92	0	1	147.2	N/A	IBM AIX
PRD-APP-V001_SS	Production	APP	IBM WebSphere Application Server ND	1	2	16	20	92	0	1	147.2	N/A	IBM AIX
PRD-APP-V002	Production	APP	IBM WebSphere Application Server ND	1	2	16	20	92	0	1	147.2	N/A	IBM AIX
PRD-APP-V002_SS	Production	APP	IBM WebSphere Application Server ND	1	2	16	20	92	0	1	147.2	N/A	IBM AIX
PRD-BAT-V001	Production	BAT	IBM Tivoli Workload Scheduler	0.5	1	5	12.5	87.5	0	1	140	N/A	IBM AIX
PRD-COR-V001	Production	CCM	SmartCOMM (ThunderHead)	2	4	32	80	128	0	1	204.8	N/A	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
PRD-COR-V002	Production	CCM	SmartCOMM (ThunderHead)	2	4	32	80	128	0	1	204.8	N/A	IBM AIX
PRD-DBR-P001	Production	DBR	IBM DB2 Enterprise Server Edition	6	8	64	160	176	768	633.263157 9	281.6	614.4	IBM AIX
PRD-DBR-P002	Production	DBR	IBM DB2 Enterprise Server Edition	6	8	64	160	176	768	633.263157 9	281.6	614.4	IBM AIX
PRD-DMR-V001	Production	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	0	132.8	N/A	IBM AIX
PRD-DMR-V001_SS	Production	DMR	IBM WebSphere Application Server ND Deployment Manager	0.5	1	2	5	83	0	0	132.8	N/A	IBM AIX
PRD-MQS-V001	Production	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
PRD-MQS-V002	Production	MDW	IBM MQ	0.5	1	2	5	83	0	1	132.8	N/A	IBM AIX
PRD-WEB-V001	Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
PRD-WEB-V001_SS	Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
PRD-WEB-V002	Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
PRD-WEB-V002_SS	Production	WEB	IBM HTTP Server	1	2	2	10	86	0	1	137.6	N/A	IBM AIX
PRD-EDW-V001	Production	EDW	IBM DB2 Enterprise Server Edition	3.4	4	18	160	176	614.4	633.263157 9	281.6	614.4	IBM AIX
PRD-EDW-V002	Production	EDW	IBM DB2 Enterprise Server Edition	3.4	4	18	160	176	614.4	633.263157 9	281.6	614.4	IBM AIX
PRD-OLA-V001	Production	OLA	SAP Business Objects XIR2	8	8	16	30	119	50	1	190.4	N/A	Windows 2012 Datacenter Edition
PRD-OLA-V002	Production	OLA	SAP Business Objects XIR2	8	8	16	30	119	50	1	190.4	N/A	Windows 2012 Datacenter Edition
PRD-BLD-V001	Production	BLD	Jenkins	1	2	4	10	104	0	1	166.4	N/A	Windows 2012 Datacenter Edition
PRD-ETE-V001	Production	ETE	SAP Data Services EDGE	2	2	32	20	104	409	1	166.4	245.4	Windows 2012 Datacenter Edition

SERVER NAME	ENVIRONMENT	SERVER TYPE	Applications Installed	Physical CPU	vCPU	RAM (GB)	TIER 1 - External SSD (Swap Space, Cache, Hot Files) (GB)	TIER 1 - External SSD (OS and Files) (GB)	TIER 1 - External SSD (Database) (GB)	TIER 2 - External SATA/NL-SAS (OS and File Backups) (GB)	TIER 2 - External SATA/NL-SAS (Database Backups) (GB)	TIER 3 – NAS (GB)	OS
PRD-ECM-V001	Production	CPE	IBM Content Platform Engine	1	1	8	20	92	378	147	227	1	IBM AIX
PRD-ECM-V002	Production	CPE	IBM Content Platform Engine	1	1	8	20	92	378	147	227	1	IBM AIX
PRD-DCS-V001	Production	DCS	Datacap Server	1	1	4	10	90	80	150	150	1	Windows 2012 Datacenter Edition
PRD-DCN-V001	Production	DCN	Datacap Navigator/Datacap Web Services	1	1	4	10	90	0	150	N/A	1	Windows 2012 Datacenter Edition
PRD-DCR-V001	Production	DCR	Datacap - RuleRunner	2	2	6	10	90	80	150	N/A	1	Windows 2012 Datacenter Edition
PRD-DCR-V002	Production	DCR	Datacap - RuleRunner	2	2	6	10	90	80	150	N/A	1	Windows 2012 Datacenter Edition
NPRD-APM-V001	All Environments	APM	IBM Application Performance Management (APM)	4	4	16	8	200	0	350	N/A	1	RHEL 7 Datacenter Edition

Software License Breakdown for IBM

Product	*Environment*	*vCPU Quantity*	*PVU/UVU/RVU Count*
Processor Value Unit (PVU) based licensing			
IBM WebSphere D-Manager	***Development***	***2***	***140***
IBM WebSphere D-Manager	***Non-Production***	***2***	***140***
IBM WebSphere D-Manager	***Production***	***2***	***140***
IBM WebSphere Application Server ND	***Development***	***16***	***1120***
IBM WebSphere Application Server ND	***Non-Production***	***16***	***1120***
IBM WebSphere Application Server ND	***Production***	***8***	***560***
IBM DB2 Enterprise Edition	***Development***	***6***	***280***
IBM DB2 Enterprise Edition	***Non-Production***	***24***	***1040***
IBM DB2 Enterprise Edition	***Production***	***24***	***1040***
IBM Performance Management Offering	***Non-Production***	***12***	***840***
IBM Performance Management Offering	***Production***	***12***	***840***
IBM Tivoli Workload Scheduler	***Development***	***4***	***280***
IBM Tivoli Workload Scheduler	***Non-Production***	***8***	***560***
IBM Tivoli Workload Scheduler	***Production***	***4***	***280***
IBM MQ	***Development***	***2***	***140***
IBM MQ	***Non-Production***	***2***	***140***
IBM MQ	***Production***	***2***	***140***
User Value Unit (UVU) based licensing			
IBM Content Foundation	***All Environments***	***NA***	***399***
IBM Datacap Taskmaster Authorized User	***All Environments***	***NA***	***45***
IBM Datacap Taskmaster Enterprise Add-on	***All Environments***	***NA***	***45***
Resource Value Unit (RVU) based licensing			
IBM Content Foundation	***All Environments***	***NA***	***83550***
Managed server count based licensing			
IBM Application Performance Management (Base: 80; Advance: 20)	***100***		

11.2 Conditions and Provisions

Notice of Exceptions – Request for Proposal (RFP) No: 3462

Deloitte Consulting is pleased to submit this proposal to the Nevada Department of Health and Human Services (DHHS), Division of Welfare and Supportive Services (DWSS), Child Support Enforcement Program (CSEP) (the "State") in response to its RFP dated August 3, 2017 to provide a solution to replace the child support portion of the Nevada Operations of Multi-Automated Data Systems (NOMADS) application with modern technology. Our working relationship with the State has proven that we have been successful in expeditiously working together through important engagement requirements and provisions. Thus, in the event that we are selected for award, please trust that Deloitte Consulting is open and ready to promptly negotiate mutually agreeable terms in a collaborative and expeditious manner – similar to how we have worked together before. Deloitte Consulting formally takes exception to the referenced terms and conditions in the RFP as noted below.

Section Reference	Section Title	Explanation of Exception
Attachment C, Section 9(a)	Inspection and Audit, Books and Records	As a private partnership we are not required to follow GAAP. We will follow standard accounting principles.
Attachment C, Section 14 and Attachment D, Insurance Schedule	Indemnification and Defense & Indemnification Clause	We propose that these indemnification obligations of Contractor be for personal injury (including death) and real or tangible personal property damage.
Attachment C, Section 26	GENERAL WARRANTY	We propose the following revisions to the general warranty: "Contractor warrants that all services under this Contract shall be completed in a workmanlike manner consistent with standards in the trade, profession, or industry." The warranty support period and related terms of the RFP and proposal, as finalized, should replace this as respects deliverables and work products, and should be based on compliance with the agreed-upon requirements for such deliverables and/or work products.
Attachment D	Insurance Schedule	We wish to make a few updates to the Insurance Schedule so that the insurance requirements align with our industry-standard coverage.
RFP, Section 13.2.6		We agree that local governments can also join or use the agreement as a vehicle of purchase - may we discuss how that would occur to be clear that they are not a legal third party beneficiary to this project or these services?
RFP, Section 13.3	Project Terms and Conditions	We would seek to clarify the intellectual property provisions, including to make clear that we will retain ownership of and provide a license to our intellectual property and any modification to it and that the rights granted are subject to payment to Contractor for the relevant services.
Additional Terms		Limited Liability. We propose the addition of a limitation of liability for Contractor's liability (akin to that included for the State in Section 12, though the amount can be subject to negotiation), other than for personal injury (including death) and real or tangible personal property torts (versus no limit for all torts, as currently implied by Section 12). We would also propose a mutual disclaimer of consequential, indirect, incidental, and special damages (in addition to the punitive damages disclaimer in Section 12 of the terms attached to Attachment C).

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