PCG | Technology Consulting

Public Focus. Proven Results.™

I. TITLE PAGE

State of Nevada

Purchasing Division

Independent Verification & Validation (IV&V) for Child Support Enforcement (CSE) System Replacement

Part IA – Technical Proposal	
RFP Title:	IV&V for Child Support Enforcement System
RFP:	3475
Vendor Name:	Public Consulting Group, Inc.
Address:	2150 River Plaza Drive, Ste. 380 Sacramento, CA 95833
Opening Date:	10/19/17
Opening Time:	2:00 PM

PUBLIC CONSULTING GROUP

2150 River Plaza Drive, Ste. 380
Sacramento, CA 95833
916-565-8090
www.publicconsultinggroup.com

Public Consulting Group, Inc. is an Affirmative Action/Equal Opportunity Employer.

October 19, 2017

Ms. Rhonda Miller
State of Nevada
515 E. Musser Street, Ste. 300
Carson City, NV 89701

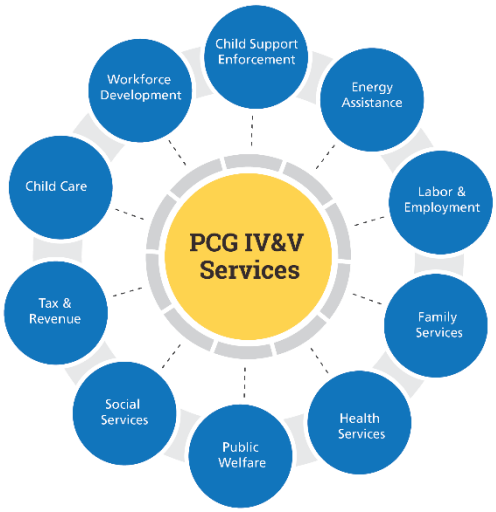
Dear Ms. Miller,

Public Consulting Group, Inc. (PCG) is pleased to submit our response to the Nevada Department of Health and Human Services (DHHS), Division of Welfare and Supportive Services (DWSS) Request for Proposal #3475 to provide Independent Verification & Validation (IV&V) services for the Nevada Child Support Enforcement (CSE) System Replacement Project.

PCG is a management and technology services company who has been supporting the public sector for more than 30 years. We support clients throughout North America and the U.S. territories, Europe and Australia. Our services encompass all aspects of management and technology services. This includes IV&V, project management, procurement support, systems architecture and design, requirements definition, development, testing, training, quality management, implementation support, security planning and remediation, infrastructure support, and production system maintenance and operations.

We are the nation's premier provider of IV&V services to the public sector

PCG has provided IV&V services for more than 100 projects, including some of the largest and most complex public sector IT systems in the nation. We have extensive experience working alongside Deloitte, Accenture, Xerox, DXC Technology (formerly HPE), IBM, CSG, and MAXIMUS on projects to transfer, modernize and/or replace legacy solutions. Our assessments have focused on solution feasibility, system capacity, performance, scalability, security and readiness; we have reviewed and analyzed development tools and database management systems; we have applied our knowledge of middleware languages and tools, hardware and operating system solutions, network topology, testing and support tools.



2150 River Plaza Drive, Suite 380 | Sacramento, California 95833 | P: (916) 565-8090 | F: (916) 637-8802

Our staff are certified IV&V practitioners

PCG is the <u>only</u> firm in the nation that offers an IV&V training and certification program. To ensure quality and consistency across our IV&V teams, each engagement is based on our proprietary Eclipse IV&V® methodology. Supported by our in-house Center of Excellence (CoE), PCG's Eclipse IV&V® curriculum is refreshed on a quarterly basis to incorporate new standards and regulations, and address evolving methodologies. Staff must earn professional credits to maintain their IV&V certification through their participation on IV&V projects and attendance at re-certification training.

We know CCSAS and we bring Child Support experience

Our origins are in Child Support. When PCG's Technology Consulting Division was started 1996 (as Eclipse Solutions, Inc.), our very first project was with the California Department of Child Support Services to support the implementation of CCSAS, which DWSS has selected as its transfer system. During the 10+ years working with key stakeholders (i.e., federal, state, county, and district attorney offices), we became an integral part of California's successful migration. This was the largest and most complex child support migration in our nation's history, and PCG was involved in every phase of the project – including development, quality assurance, statewide transition planning, county consortia management, data conversion, production system maintenance and operations, end user training, and federal interface management.

In addition to our CCSAS experience, members of PCG's IV&V Team have supported child support projects in Arizona, Massachusetts, Michigan, New York, North Carolina, Tennessee, Texas, and West Virginia. As a result, PCG's multi-disciplinary portfolio of IV&V and child support experience is unmatched by any other IV&V vendor.

We are the <u>only</u> vendor who knows NOMADS and CCSAS

From 2012 – 2014, we provided IV&V services on DWSS' project to implement a new business rules engine that interfaces with NOMADS, which currently supports Nevada's Child Support functionality. No other IV&V vendor brings this visibility to your Project. Several members of our team are known to, and trusted by you. This includes our proposed IV&V Project Manager, Ms. Pauline Palmer and our Engagement Manager, Ms. Laurie Thornton, as well as other members of our team. Ms. Palmer will provide leadership and direction to our experienced team, and Ms. Thornton, Vice President for PCG Technology Consulting, will be your primary point of contact.

In addition to our staff who have worked with you on NOMADS, PCG's team has worked together on numerous IV&V and child support engagements over many years. As such, we are providing a proven and highly cohesive team that knows how to work together effectively. Unlike some other firms, our staff are not spread across multiple concurrent child support IV&V projects. Our Key Personnel will be onsite full-time during the two-week review cycles, and you will have full access to our best and most experienced child support experts who are all based out of Sacramento, CA, from which Carson City can be easily accessed for scheduled meetings and periodic assessment activities.

PUBLIC CONSULTING GROUP

Our IV&V expertise is infused with hands-on implementation experience

Unlike some vendors who are focused only on IV&V, PCG is a full-service information technology company, which means we know what it's like to be in the trenches and know what it takes to implement complex systems and services. We've implemented special education management systems in 40 states that serve over 1.4 million students across the U.S. In addition, PCG implements solutions to provide financial management services (payroll management) on behalf of people with disabilities who employ case workers, processing more than $1 billion in services payments annually. Bringing this depth of 'real-world' experience to your Project will allow our team to quickly focus on potential risks and issues with a pragmatic perspective.

We are committed to being your IV&V partner

In summary, Nevada is one of PCG's highly valued clients and we are committed to successfully meeting all the requirements of this project, in an efficient and timely manner, with experienced and dedicated resources.

As we have pointed out, PCG not only leads in providing IV&V services to the public sector, but we also have a deep understanding of what it takes to develop, implement, maintain and enhance complex child support systems – systems that must interface, and seamlessly integrate, with your current environment. Our experience working on CCSAS and NOMADS affords us a level of insight that no other vendor can bring to your Project.

In closing, we appreciate the opportunity to put our team forward for consideration on this important project. Should questions arise, or if you need additional information regarding the services offered, please do not hesitate to contact Laurie Thornton at (510) 301-4645 or lthornton@pcgus.com.

Sincerely,

Mitch Dobbins
Practice Area Director
Public Consulting Group, Inc.

II. TABLE OF CONTENTS

I. TITLE PAGE 1

II. TABLE OF CONTENTS I

III. VENDOR INFORMATION SHEET 1

IV. STATE DOCUMENTS 3

V. SCOPE OF WORK 4

V.1 Project Kick Off Meeting 4
V.2 Planning and Administration 5
V.3 IV&V Objective and Activities 16
V.4 IV&V Requirements 26
V.4.1 IV&V Project Management 27
V.4.2 Replacement Project Management 28
V.4.3 Quality Management 44
V.4.4 Training 46
V.4.5 Requirements Management 48
V.4.6 Operating Environment 53
V.4.7 Development Environment 58
V.4.8 Software Development 59
V.4.9 System and Acceptance Testing 63
V.4.10 Data Management Oversight 66
V.4.11 Operations Oversight 68

VI. COMPANY BACKGROUND AND REFERENCES 72

VI.1 Vendor Information 72
VI.2 Subcontractor Information 84
VI.3 Business References 84
VI.4 Staff Skills and Experience Required 86
VI.4.1 Project Manager Qualifications 86
VI.4.2 Individual Verification Services Team Member Qualifications 86
VI.5 Vendor Staff Resumes 96
VI.6 Preliminary IV&V Project Plan 96
VI.7 Project Management 100
VI.8 Quality Assurance 104

VI.9 Metrics Management 104
VI.10 Design and Development Process 106
VI.11 Peer Review Management 106
VI.12 Project Software Tools 107

VII. PROPOSED STAFF RESUMES (ATTACHMENT H) 109

VII.1 Laurie Thornton, IV&V Engagement Manager 110
VII.2 Pauline Palmer, IV&V Project Manager 115
VII.3 Ruben Ramos, IV&V Analyst 120
VII.4 May Fung, IV&V Analyst 124
VII.5 Donna Kurtz, IV&V Analyst 133
VII.6 David Ruddy, CCSAS & Legacy Transition SME 138
VII.7 Jonathan Taylor, CCSAS & Legacy Transition SME 146
VII.8 Paul Wertheim, CCSAS & Legacy Transition SME 150
VII.9 Maribeth Pollard, CCSAS & Legacy Transition SME 155
VII.10 Kris Marshall, NOMADS & DWSS Environment SME 161
VII.11 Selvi Dorairaj, NOMADS & DWSS Environment SME 167
VII.12 Jeff Hellzen, Technical Architecture Advisor 174
VII.13 Benjamin Robinson, Technical Architecture Advisor 180
VII.14 Rob McKenney, Technical Architecture Advisor 192
VII.15 Earl Burba, Technical Architecture Advisor 197

VIII. PRELIMINARY IV&V PROJECT PLAN 203

IX. APPENDIX (OTHER INFORMATIONAL MATERIAL) 208

IX.1 Key Staff Qualifications Matrix 208
IX.2 PCG Mobile Application 210
IX.3 IVVMP Work Sample 211
IX.4 Project Metric Matrix 212
IX.5 IV&V Risk Log (Sample Assessment) 213

Table of Tables

Table V-1: PCG's Assessment Checklists 10
Table V-2: Project Management Process 29
Table VI-1: PCG's Recent IV&V Engagements 77

Table of Figures

Figure V-1: Eclipse IV&V® Framework 16
Figure V-2: Eclipse IV&V® Core Values 17
Figure V-3: Eclipse IV&V® DOR Process 25
Figure V-4: Risk Exposure Matrix 36
Figure V-5: Eclipse IV&V® Risk Priorities Definitions 36
Figure VI-1: PCG's National Project List 82
Figure VI-2: PCG's Project Organization Chart 88
Figure VI-3: PCG Project Management Methodology 101
Figure IX-1: Project Manager Key Staff Qualifications 208
Figure IX-2: Key Staff Qualifications 209
Figure IX-3: PCG | insight Mobile App 210

III. VENDOR INFORMATION SHEET

V1	Company Name	***Public Consulting Group, Inc.***

V2	Street Address	***2150 River Plaza Drive, Ste. 380***

V3	City, State, ZIP	***Sacramento, CA 95833***

V4	Telephone Number		
	Area Code: ***916***	Number***: 565-8090***	Extension:

V5	Facsimile Number		
	Area Code: ***916***	Number: ***637-8802***	Extension:

V6	Toll Free Number		
	Area Code:	Number:	Extension:

V7	***Contact Person for Questions / Contract Negotiations, including address if different than above***
	Name: ***Laurie Thornton***
	Title: ***Vice President, PCG Technology Consulting***
	Address: ***2150 River Plaza Drive, Ste. 380, Sacramento, CA 95833***
	Email Address: ***lthornton@pcgus.com***

V8	Telephone Number for Contact Person		
	Area Code: ***510***	*Number:* ***301-4645***	Extension:

V9	Facsimile Number for Contact Person		
	Area Code: ***916***	Number: ***637-8802***	Extension:

V10	***Name of Individual Authorized to Bind the Organization***	
	Name: ***Mitch Dobbins***	Title: ***Practice Area Director***

V11	Signature ***(Individual shall be legally authorized to bind the vendor per NRS 333.337)***	
	Signature:	Date: ***10/19/2017***

IV. STATE DOCUMENTS

PCG has provided the requested state documents on the following pages.

- ***The signature page from all amendments signed by an individual authorized to bind the organization.***
- ***Attachment A – Confidentiality and Certification of Indemnification signed by an individual authorized to bind the organization.***
- ***Attachment B – Vendor Certifications signed by an individual authorized to bind the organization.***
- ***Attachment J – Certification Regarding Lobbying signed by an individual authorized to bind the organization.***

Note: PCG does not have vendor licensing agreements, hardware and software maintenance agreements certifications and/or licenses applicable to this project.

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			

Part III – Confidential Financial Information			
YES	X	NO	
Justification for Confidential Status			
Corporate financial information to include Profit and Loss Statement and Balance Sheet.			

Public Consulting Group, Inc.
Company Name

Signature

Mitch Dobbins, Practice Area Director
Print Name

10/17/2017
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.

(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.

Public Consulting Group, Inc.
Vendor Company Name

Vendor Signature

Mitch Dobbins, Practice Area Director
Print Name

10/17/2017
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: _____ 10/17/2017

Signature of Official Authorized to Sign Application — Date

For: Public Consulting Group, Inc.

Vendor Name

IV&V for Child Support Enforcement System RFP 3475

Project Title

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

73. Sections 4.10, 4.11, 4.12, and 4.13 all revolve heavily around system development processes/activities and not IV&V assessment/review activities. Can the State confirm that these sections are relevant to the IV&V contractor?

Sections 4.10 Design and Development Processes, 4.11 Configuration Management, 4.12 Peer Review Management and 4.13 Project Software Tools are not applicable to this solicitation. However, the IV&V vendor should verify and report that work is progressing and deliverables are produced in a timely manner. How verification and reporting occurs is the responsibility of the selected vendor.

74. Can the State confirm the onsite requirement for this project as section 12.3.4.1 states, 'The contractor shall be required to have its project management located in Carson City for the duration of the project?' This approach does not appear to be consistent with conducting periodic reviews.

Refer to the State's response to Question #16

75. Sections 12.3.11 Source Code Ownership and 12.3.13 Guaranteed Access to Software refer to activities, processes, tools, etc. that are specific to a development contractor. Can the State confirm that these items should apply to the IV&V contractor?

Refer to the State's response to Question #69.

76. Will the State provide an estimated / maximum budget for this project, in order to provide additional guidance for the scope of services to be provided by the IV&V vendor?

Refer to the State's response to Question #1.

77. Section 3.5.1.4 states "Provide written monthly status reports no more than once a month during active work conducting a semi-annual (Initial or Periodic) IV&V Review..." Can the State please clarify what is meant by the term "active work?" Does the State expect monthly reports during and immediately following Initial / Periodic reviews, or does the State anticipate monthly reports regularly throughout the duration of the IV&V contract?

The State anticipates monthly reports during the semi-annual IV&V review periods. Refer to the State's response to Question #1.

ALL ELSE REMAINS THE SAME FOR RFP 3475.

Vendor must sign and return this amendment with proposal submitted.

Vendor Name: Public Consulting Group, Inc.

Authorized Signature:

Title: Mitch Dobbins, Practice Area Director Date: 10/17/2017

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

First set of questions included, "Please clarify if the Deliverable Observation Reports (DOR) are only upon request and thus will be scoped and priced separately if/when the State were to make this request of IV&V." Amendment 1 to Request for Proposal 3475 (in response to the first set of questions) communicates that "The Deliverable Observation Reports (DOR) are included in the project budget and should not be priced separately." Amendment 1 also communicates that "The State is adhering to federal requirements as per the IV&V Statement of Work Template located at https://www.acf.hhs.gov/css/resource/ivv-statement-of-work-template." The IV&V Statement of Work template, Task 8.1.10 Deliverable Observation Report (DOR), shows the following requirement/description for this deliverable: "Performed reviews of project artifacts, processes or deliverables not otherwise defined herein this scope of work, as-needed in a special scope of work between State and IV&V Service Provider." The state's response in Amendment 1 that DOR are "included in the project budget and should not be priced separately" appears to conflict with the Federal guideline that state DOR are "in a special scope of work" as-needed.

Refer to the State's response to Question #10.

40. Will the State please clarify the state's interpretation of the Federal guideline for Task 8.1.10 Deliverable Observation Report (DOR) as found in the IV&V Statement of Work template whether it should be included in the budget, or priced separately as needed?

Refer to the State's response to Question #10.

ALL ELSE REMAINS THE SAME FOR RFP 3475.

Vendor must sign and return this amendment with proposal submitted.

Vendor Name: Public Consulting Group, Inc.

Authorized Signature:

Title: Mitch Dobbins, Practice Area Director Date: 10/17/2017

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

V. SCOPE OF WORK

V.1 Project Kick Off Meeting

3.4 Project Kick Off Meeting

A project kick off meeting will be held with representatives from the State IV&V manager and the State Replacement Project and the 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:

3.4.1 Deliverable review process;

3.4.2 Determining format and protocol for project status meetings;

3.4.3 Determining format for project status reports;

3.4.4 Setting the schedule for meetings between representatives from the State and the contractor to develop the detailed project plan;

3.4.5 Defining lines of communication and reporting relationships;

3.4.6 Reviewing the project mission;

3.4.7 Pinpointing high-risk or problem areas; and

3.4.8 Issue resolution process.

Attend the Project Kick off Meeting

PCG knows that first impressions are the most lasting and a well-planned kick off meeting sets the tone for a successful project. Before Independent Verification & Validation (IV&V) work on an IT project can begin, a foundation of communication and understanding must be fostered. The kick-off meeting has four basic functions:

- ***Formally recognize the beginning of the project;***
- ***Outline the IV&V project goals and objectives as well as the roles and responsibilities of team members;***
- ***Clarify the expectations of all parties; and***
- ***Secure a mutual sense of commitment by those who influence the project's outcome.***

To begin, PCG's Project Manager will coordinate with your management team to prepare for and plan the kick off meeting for our IV&V project. This will include identifying the meeting participants, agreeing upon the date and location of the meeting, and formulating the agenda, which will address all of the topics identified in Section 3.4 above. Ideally, PCG's entire IV&V team will attend the project kick off meeting with all of the representatives from the Division of Welfare and Supportive Services (DWSS) and its Child Support Enforcement System Replacement Project (Replacement Project) vendors to discuss how we will work together to support project success. In addition, we will confirm the implementation approach, discuss the anticipated project schedule and verify critical project milestones; discuss availability and access to project resources and artifacts; and agree upon an approach for moving ahead.

V.2 Planning and Administration

3.5.1 Activities

The awarded vendor must:

3.5.1.1 Work with the State to provide a detailed project plan for the IV&V project with fixed deadlines that take into consideration the State holiday schedule provided in Section 2.1, State Observed Holidays. The plan is to be initially delivered within the first thirty (30) days from the date of contract award, and updated and delivered one week prior to the commencement of the onsite portion of each Initial and Periodic IV&V Review. The IV&V Management Plan shall contain at least the following:

A. A schedule describing the next two-IV&V Review periods, including tasks, activities, deliverables, and milestones, and will show the schedule's critical path reflecting both IV&V Service Provider's and State's delivery and response milestones;

B. Project work plan for each deliverable, including a work breakdown structure;

C. Completion date of each task;

D. Entrance and exit criteria for specific project milestones;

E. Project organization including a resource plan defining roles and responsibilities for the awarded vendor, subcontractors (if applicable), the State IV&V contract manager, and the State Replacement Project as it relates to the IV&V project;

F. Resumes of all Key IV&V Service Provider personnel;

G. An organization chart reflecting the IV&V Service Provider's team, including the team's place within the IV&V Service Provider's corporate structure, and providing the key names, addresses and other contact information to be used for dispute resolution and customer feedback;

H. A narrative description of all deliverables, including expected format, content, and organization, to be developed and delivered during the next two IV&V Reviews (12 months); and,

I. As Appendices, all applicable, Project lifecycle-appropriate IV&V Checklists to be utilized during the next two IV&V Reviews.

Develop the IV&V Management Plan and IV&V Project Plan (Schedule)

PCG will perform all activities outlined in Section 3.5.1.1. We understand that the IV&V Management Plan and IV&V Schedule serve as the foundation for a successful IV&V project. Not only do these tools provide the structure and framework for all IV&V activities, they promote confidence and credibility amongst all project participants, as there is clear understanding of the work to be performed. To accomplish this task, PCG will:

- ***Finalize our approach – we will work with DWSS to customize and confirm our approach to completing IV&V activities, based on our Eclipse IV&V® methodology and OCSE requirements for conducting semi-annual IV&V reviews.***
- ***Confirm deliverable expectations – we will provide a Deliverable Expectation Document (DED) for each formal IV&V deliverable. DEDs describe the format, structure and level-of-detail for deliverables such as the Initial and Periodic IV&V Review Reports, Formal Briefing Presentation documentation, and Deliverable Observation Reports (DORs).***
- ***Develop a IV&V Management Plan (IVVMP) – we will describe the IV&V procedures, checklists and tools that will be used during the Replacement Project. Please see one of our IVVMPs from a prior project in Attachment IX.3.***

- ***Develop an IV&V Project Plan* – we will refine our preliminary project schedule that includes tasks, milestones, dates and dependencies for this engagement. The IV&V Project Plan will be maintained and updated throughout the Replacement Project. For more information, please see Section VIII (Preliminary Project Plan).**

The IVVMP and IV&V Project Plan will be delivered within the first thirty (30) days from the date of contract award. It will then be updated and delivered within one week (5 business days) prior to the commencement of each onsite IV&V review. Please refer to Sections V.4.1 - IM-1 (IV&V Management Plan), VI.6 (Preliminary IV&V Project Plan) and VI.7 (Project Management) for additional information on our approach to developing the IVVMP and IV&V Project Plan.

3.5.1.2 Attend monthly project status meetings with the IV&V contract manager and the Replacement Project team at a location to be determined by the State. Attendance may be in person or via teleconferencing, as mutually agreed to by the project team. These meetings shall follow an agenda mutually developed by the awarded vendor and the State. The agenda may include, but not be limited to:

A. Review and approval of previous meeting minutes;
B. Contractor project status;
C. State project status;
D. Contract status and issues, including resolutions;
E. Status of IV&V activities,
F. New action items;
G. Outstanding action items, including resolutions;
H. Setting of next meeting date; and
I. Other business.
J. Minutes will be taken and distributed by State staff within five (5) working days after the meeting. Minutes may be distributed via facsimile or email.

3.5.1.3 Attend and participate in all IV&V project related meetings requested as well as Steering Committee meetings. The awarded vendor shall prepare materials or briefings for these meetings as requested by the State. Minutes will be taken and distributed by State staff within five (5) working days after the meeting. Minutes may be distributed via facsimile or email.

Participate in Meetings and Promote Effective Communications

PCG will perform all activities outlined in Section 3.5.1.2. We understand that projects are fluid, living efforts, and there will be change, conflict, and challenges over the life of the project. Such challenges do not go away when ignored. Communication is an effective means to break down human and technical barriers, and is an opportunity to build cultures of transparency, collaboration, and accountability.

Since PCG believes that collaboration is key, we will foster communications and relationships with DWSS, its vendor teams (i.e., Implementation, PMO and QA), and key stakeholders (e.g., DHHS, OCSE, etc.) as appropriate. Building and maintaining strong professional relationships among multiple vendor teams and project stakeholders helps everyone to develop a better understanding of, and appreciation for each group's needs, opportunities and constraints, and the basis upon which decisions are made. Having a holistic understanding, and gaining the perspectives of different entities makes for more reliable output and mutual respect.

Once PCG's IV&V team gets onsite, we will meet with the Replacement Project and its vendors to better understand the timing, and pre-existing project meetings into which the IV&V team can be seamlessly integrated within our review cycles. While the needs may vary according to the phase of the project, PCG will strive to minimize its impact on the organization by 'plugging in' to existing processes as much as possible. These meetings will be identified in the IVVMP and IV&V Schedule. PCG Key Personnel will participate in person for all meetings, or by teleconference with the approval of the State.

The PCG Project Manager will work with Replacement Project Management to define the agenda for each meeting. Our status meetings will be well-run, and our meeting materials will be professional, succinct and on-point. At a minimum, meetings will include:

- ***Review and approval of previous meeting minutes***
- ***Presentation of recent IV&V activities and findings, and/or changes in prior findings***
- ***State, contractors, and IV&V and other applicable stakeholder status***
- ***Updates on upcoming project activities, issues, risks, and other information relevant to the status of the project***
- ***Contract status and issues (including resolutions)***
- ***Status of action items outstanding, resolved, and new action items***
- ***Setting of next meeting date***
- ***Other business as decided by the meeting participants***
- ***Opportunities for questions / discussion***

At critical times during the project, it may be necessary to schedule additional IV&V meetings to discuss specific issues or to provide additional updates of project status. PCG will work with Replacement Project Management to schedule and facilitate additional meetings as necessary.

Please refer to Section VI.7 (Project Management) for additional information on our approach to project meetings and communications.

3.5.1.4 Provide written monthly status reports. No more than once a month during active work conducting a semi-annual (Initial or Periodic) IV&V Review, inform the IV&V Contract Manager of current contract status, availability of IV&V Service Provider key personnel, work and deliverables expectations prospective to the next 60 days in contract schedule.

Prepare Written Status Reports

PCG will prepare and deliver Written Monthly Status Reports during active IV&V assessment periods. Given that the standard assessment period is likely to be ten (10)

***Ms. Pauline Palmer**, our proposed Project Manager, is well-known and respected at DWSS, where she led PCG's IV&V project to help you implement a new eligibility business rules engine. Pauline brings excellent facilitation and problem solving skills and in addition to providing comprehensive project management expertise, she is an extremely effective communicator with technical and business cross-functional teams.*

weeks in duration, PCG anticipates providing two (2) Written Monthly Status Reports per assessment cycle, for a total of four (4) reports per year.

PCG will develop a DED for the Written Monthly Status Report that will be presented to Replacement Project Management for approval following project initiation. The Written Monthly Project Status Reports will include progress updates, as well as a prospective look at IV&V activities planned for the next 60 days.

At a minimum, PCG anticipates that the reports will include:

- ***Project Status – PCG will provide a general overview of the project status by discussing project performance using metrics established in the IVVMP.***
- ***Availability of Key IV&V Staff – PCG will report on the availability of staff for each semi-annual assessment and notify the Project of the need to make any staffing changes as our work progresses.***
- ***Project Events – PCG will provide a status of events that occurred during the reporting period. For each event, we assess any impact on other project activities. Events may include such items as started or completed work products and deliverables, scope changes, or additional standards, regulations, or legislation that must be adhered to.***
- ***IV&V Productivity – PCG will provide an update on activities completed as well as deliverables, per the IV&V Schedule.***
- ***Risk Analysis – PCG will report risks in relation to performing our IV&V services. All of the Replacement Project risks will be stored in our easy-to-use Assessment Workbook that supports our periodic IV&V reports. As shown in Appendix IX.5 IV&V Risk Log (Sample Assessment), the strength of our risk tracking process is the development of actionable tasks to address each of our recommendations. The PCG Recommendations identified our Risk Tracking Log are specific tasks that support mitigation of the risks. Further, we encourage the project leadership to accept or reject each action item and PCG tracks all those accepted to completion. A corrective action plan is requested of any Recommendations not completed upon implementation.***
- ***Issue Analysis – PCG will report issues in relation to performing our IV&V services. As stated above, all of the Replacement Project issues will be stored in our Assessment Workbook that supports our periodic IV&V reports.***
- ***Listing of Obstacles to Progress and Recommended Solutions – PCG will report on any impediments that prevent us from completing our assessments on a timely basis as well as any dependencies, etc. that may impact the Project's ability to move forward with recommended solutions.***
- ***IV&V Look Ahead – PCG will provide a summary of planned IV&V activities and deliverables scheduled for the upcoming period.***

Based upon industry standards and best practices, our keys to effectively communicating project status include:

- ***Accuracy – the information must be both timely and complete***
- ***Relevancy and Usefulness – the information must be pertinent and insightful not simply a reporting of "project data"***
- ***Consistency – the sources and methods of reporting must be consistent by reporting period; status reports must reflect the information reported in previous reports***
- ***Efficiency – the project management reporting process must be efficient and not be a drain on the task of managing the project and meeting the project's goals and objectives***
- ***Compliance – the format, contents, level-of-detail, and method of delivery must meet the requirements of both the project and PCG. These requirements will be captured in the IVVMP and approved by all parties***
- ***Traceability – the reports must be reviewed and approved by the respective management teams***

Please refer to Section VI.7 (Project Management) for additional information on our approach to project status reports. Refer to Appendix IX.5 IV&V Risk Log (Sample Assessment)to review a work sample developed for a prior project.

3.5.1.5 Prepare and deliver IV&V Checklists, presenting in Question and Answer format elements to be reviewed, observed, monitored, and commented on, with regard to all aspects of industry standards for Project Management, Software and Systems Development, and Engineering disciplines as found in IEEE, CMI, and PMBOK industry standards, at a minimum.

The IV&V Checklists are to be compiled and delivered on an ongoing basis, with the first checklists being delivered applicable to the project lifecycle phase to be monitored and reviewed within the Initial IV&V Review period, with such checklist delivery made prior to the onsite portion of the review being performed. As IV&V work progresses and project lifecycle phases change, applicable, updated IV&V Checklists will be delivered, as needed, prior to commencement of the on-site portion of that respective, periodic IV&V Review.

Prepare IV&V Checklists

PCG brings to the engagement a proven set of IV&V checklists developed by our IV&V CoE. PCG will leverage these tools as a starting point, customizing them for your Replacement Project as needed. These checklists may also support our DORs and will be used by our IV&V Team when reviewing DEDs, Plans, design documents, and other key deliverables created for your project.

PCG will work collaboratively with your vendors, distributing the checklists prior to work being finalized to help set expectations and expedite deliverable acceptance. A listing of checklists that currently reside in our IV&V CoE repository is provided below.

Table V-1: PCG's Assessment Checklists

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
Project Management Plan Checklist (for Software Project Management)	This checklist helps ensure that planning activities have been successfully completed, reviewed and signed off prior to the project moving into the execution phase.	IEEE Std 1490-2003 - IEEE Guide - Adoption of PMI Standard - A Guide to the Project Management Body of Knowledge (PMBOK®) 6th Edition IEEE 1058-1998 S/W Project Management Plan (SPMP) IEEE 12207-2008 Information Technology – Software life cycle processes	Yes
Software Design and Development Checklist	This checklist ensures that development processes have been formally documented, that they adhere to industry best practices and requirements, and that followed throughout the system lifecycle.	IEEE 1063-2001 Standard for Software User Documentation IEEE 1471-2000 Recommended Practice for Architectural Description (AD) of S/W Intensive Systems IEEE 2001-1999 Recommended Practice for Intranet Practices – Web Page Engineering – Intranet/Extranet Applications	Yes
Work Breakdown Structure (WBS)Checklist	This checklist ensures that the project's WBS complies with industry standards for content and level-of-detail. It also verifies that the WBS is being actively maintained once implemented.	PMI Practice Standard for Work Breakdown Structure (WBS)	Yes

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
Risk Management Checklist	This checklist ensures risk processes have been implemented and are being followed by the project.	ISO/IEC 16085-2006 Risk Management	Yes
Requirements Checklist	This checklist ensures that requirements are reviewed for completeness, accuracy, ambiguity, and relevance.	IEEE Std 1233-1998 - IEEE Guide for Developing System Requirements Specifications. IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications.	Yes
Configuration Management Checklist	This checklist helps ensure that configuration management planning and the steps for proper configuration management are defined and documented.	IEEE Std 828-2005 - IEEE Standard for Software Configuration Management Plans.	
Business Process Re-engineering Checklist	This checklist helps ensure that the method and process for initiating business process reengineering is clearly defined and documented.	Checklist derived from main proponents of re-engineering, Michael Hammer and James Champy in a series of books including 'Reengineering the Corporation' and 'Reengineering Management'.	Yes
Change Management Checklist	This checklist helps validate that the Vendor's Change Management Plan includes critical success criteria for achieving desired business results.	Checklist derived from the Prosci® Change Management Model.	Yes

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
Communications Management Checklist	This checklist helps ensure that the Vendor's Communications Management Plan includes the information related to what, when and who information is communicated to from the planning phase through the successful implementation of the project.	IEEE Std 1490-2003 - IEEE Guide - Adoption of PMI Standard - A Guide to the PMBOK® 6th Edition	Yes
Project Estimating and Scheduling Checklist	This checklist ensures that key detailed scheduled items have been considered and include realistic durations of time.	IEEE Std 1490-2003 - IEEE Guide - Adoption of PMI Standard - A Guide to the PMBOK® 6th Edition	Yes
Quality Management Checklists	This checklist ensures that quality planning, quality assurance (QA) and quality control (QC) has been documented, implemented, and are being executed to plan.	IEEE 730-2002 Quality Assurance Plan IEEE 1012-2004 S/W Verification and Validation IEEE 1028-2008 Standard for Software Reviews and Audits IEEE 1061-1998 Quality Metrics Methodology	Yes
Testing Checklists	This checklist helps ensure that the testing activities have been successfully completed, reviewed and signed off so that tested software is ready for the next phase of the project.	IEEE Std 829-1998 - IEEE Standard for Software Test Documentation. IEEE 1008-1987 Software Unit Testing	Yes
Software Maintenance and Operations	This checklist ensures that comprehensive planning and	IEEE Std 14764-006 Software Engineering — Software Life Cycle	Yes

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
Readiness Checklist	preparations for system maintenance and operations (M&O) has occurred prior to transition. Confirms ongoing compliance with M&O activities following transition.	Processes — Maintenance	
System Requirements Specifications Checklist	For the assessment areas of Interface Requirements and Requirements Allocation and Specification, this checklist would be used to evaluate a System Requirements Specification (SRS) and its' underlying requirements for adherence to IEEE standards, in addition to ensuring that requirement activities have been finished, reviewed, and signed off so that system requirements may move into the design phase.	IEEE Std 1233-1998 - IEEE Guide for Developing System Requirements Specifications. IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications. IEEE 29148-2011 Systems and Software Engineering Requirements Engineering	No (Value Add)
Overall Development Checklist	For the assessment areas of System Hardware, System Software and Database Software, this checklist validates against technical evaluation criteria used in the assessment of development activities.	IEEE Std 1471-2000 - IEEE Recommended Practice for Architectural Description of Software Intensive Systems. IEEE Std 1219-1998 - IEEE Standard for Software Maintenance.	No (Value Add)
Detailed Design Checklist	This checklist ensures that design specifications are documented appropriately in the Detailed Design Document so that	IEEE Std 1220-2005 - IEEE Standard for the Application and Management of the Systems Engineering Process.	No (Value Add)

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
	development phase can begin.	***IEEE Std 12207-1997 - Industry Implementation of ISO 12207 - Software Life Cycle Processes.***	
Application Development Checklist	***This checklist ensures that the developed code is completed as described in its build template and that the standards are being followed as required.***	***IEEE 12207 Standard for Software Life Cycle Processes.*** ***IEEE Std 1540-2001 - IEEE Standard for Software Life Cycle Processes - Risk Management.***	***No*** ***(Value Add)***
System Integration Testing Checklist	***This checklist helps ensure that the testing activities have been successfully completed, reviewed and signed off so that tested software is ready for the next phase of the project.***	***IEEE Std 829-1998 - IEEE Standard for Software Test Documentation.***	***No*** ***(Value Add)***
Interfaces Checklist	***This checklist ensures that all project interfaces have been identified, defined, data elements clearly documented, and interface requirement specifications addressed.***	***IEEE Std 1233-1998 - IEEE Guide for Developing System Requirements Specifications.*** ***IEEE Std 1490-2003 - IEEE Guide - Adoption of PMI Standard - A Guide to the PMBOK® 6th Edition*** ***IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications.***	***No*** ***(Value Add)***
Turnover Plan ***Checklist***	***This checklist ensures the acceptance of the system by the users and validates that the step-by-step procedures for turnover are documented in detail.***	***IEEE Std 1490-2003 - IEEE Guide - Adoption of PMI Standard - A Guide to the PMBOK® 6th Edition***	***No*** ***(Value Add)***

Eclipse IV&V® Checklist	Definition	Standard / Ref. Name	Required by RFP
Conversion Code Checklist Conversion Data Dictionary Checklist Conversion Data Mapping Checklist Conversion Plan Checklist	These Data Conversion checklists will ensure that required key data conversion tasks and activities are followed as defined in the Data Conversion Plan.	IEEE Std 1220-2005 - IEEE Standard for the Application and Management of the Systems Engineering Process. IEEE Std 12207-1997 - Industry Implementation of ISO 12207 - Software Life Cycle Processes.	No (Value Add)
Database Design Checklist	This checklist helps ensure that the Detailed Design reflects the business and system requirements and that all processes and procedures are validated.	IEEE 1016-2009 - IEEE Standard for Information Technology - Systems Design - Software Design Descriptions	No (Value Add)
User Manual Checklist Training Plan Checklist	For the assessment areas of User Training and Documentation and Developer Training and Documentation, these checklists help ensure that training activities have been successfully completed, reviewed, documented and signed off and that project stakeholders have been trained to use, operate and maintain the system and support its processes after contractor roll-off.	IEEE 1063-2001 – Standard for Software User Documentation.	No (Value Add)

3.5.1.6 Prepare and deliver invoices for payment no more than once a month during active work conducting a semi-annual (Initial or Periodic) IV&V Review.

Prepare Project Invoices

PCG will prepare and deliver invoices to the State, in an agreed upon format, no more than once a month during active work while conducting our assessments.

V.3 IV&V Objective and Activities

3.6.1 Objective

The objective of this task is to conduct and report on IV&V activities to ensure quality processes and results for the CSEP's Replacement Project.

IV&V's Role in Supporting Your Replacement Project Objectives

IV&V is a disciplined approach to evaluating the Project's compliance with defined requirements. IV&V consists of management tasks, such as planning, organizing, and monitoring, as well as technical tasks such as analyzing, evaluating, reviewing, and testing. Above all, IV&V supports project success.

PCG's IV&V Team will verify that the appropriate level of engineering and quality is built into the software, and that the software satisfies all requirements.

There are two purposes of IV&V, which are:

- ***Verification – the process of determining whether the solution is well-engineered and fulfills all defined project requirements – assuring that your transfer system is built right.***
- ***Validation – the process of evaluating the solution throughout the SDLC to assure your transfer system will satisfy both its intended purpose and user needs – assuring that the right system is built.***

Figure V-1: Eclipse IV&V® Framework

To accomplish this dual purpose, PCG will utilize our proprietary IV&V framework, Eclipse IV&V®, to provide insights into the status and risks of the project, and an independent, objective assessment of the development process and its products at any point-in-time throughout the project life cycle. The focus of IV&V is on providing relevant and constructive feedback aimed at improving the development process, thereby ensuring that there are no surprises. Findings are presented in such a way that the key stakeholders and the implementation vendor find value in IV&V insight and recommendations.

PCG's IV&V framework was developed by our Eclipse IV&V® CoE based upon, and informed by, our experience delivering over 100 IV&V projects. More than any other vendor, PCG has invested in developing industry-leading IV&V capabilities, enabling us to deliver unparalleled high-value results to you that increase the likelihood of project success.

Eclipse IV&V® is designed to provide early identification of high-risk areas, provide OCSE and DWSS with an objective analysis to deal with system development issues and make informed decisions, offer improved and objective visibility into the progress and quality of the development effort, and reduce errors in delivered products and increases probability of project success. Our approach ensures that IV&V can be integrated into all development activities and is conducted throughout all life cycle phases.

Eclipse IV&V® provides our IV&V Team with customizable processes, templates, checklists, best-in-class documents and a training/certification program. It is built on standards and a set of core values designed to ensure the delivery of high-quality IV&V services. This results in an approach to be scalable to all projects - both large and small.

Once customized, Eclipse IV&V® allows the IV&V Team to thoroughly evaluate and analyze all aspects of the project and provide a focused analysis to ensure DWSS receives meaningful and actionable findings.

As you can see, our core values are well-grounded and pragmatic. Our efforts focus on the early identification of potential risks and the development of mitigation strategies to avert risk and to support the ability to progress through the entire system development life cycle with success.

Figure V-2: Eclipse IV&V® Core Values

Overview of PCG's Approach to Periodic IV&V Support Services

The following is a high level overview of PCG's approach (further detail is in Section 3.6.2 below) to providing IV&V services on your Replacement Project:

- ***Initiation - Upon contract award, PCG begins to plan for the IV&V Kick Off Meeting. This meeting ensures alignment between the PCG IV&V team, OCSE, the State, and its vendors on the scope, schedule and expectations for the Project. PCG then prepares the IVVMP and schedule in coordination with project leadership. During the initiation period, the following will occur:***
    - ***PCG presents a draft DED for the IVVMP and the periodic reports to be delivered***
    - ***Project artifacts applicable to the Initial Review are identified, and PCG's access is authorized by the State***
    - ***The State identifies the meetings that will occur while PCG is onsite***
    - ***Project stakeholders are identified by the State and contact information is provided to PCG***
    - ***IV&V task areas to be addressed in the Initial Review are agreed-upon and prioritized collaboratively using our collective experience***

  The initial onsite dates for PCG and the date for delivery of the draft and final versions of the Initial IV&V Review Report are determined and agreed upon

  A date for an IV&V Status meeting while the PCG Team is onsite is determined collaboratively and scheduled by PCG.

- ***PCG Preparation for Onsite Period of the Initial Review - Once the project inputs are received, PCG refines our checklists and contacts stakeholders to schedule interviews. We review the project documentation received and communicate questions, needs or concerns. We prepare a detailed schedule of our activities during the onsite period and send this to the Project prior to arriving on-site.***

- ***IV&V Onsite Periods – While onsite, PCG conducts activities as specified in the onsite schedule provided to the project. This includes conducting interviews, attending meetings and reviewing documentation. PCG coordinates our activities to accommodate the Project's schedule as needed.***

- ***Following the PCG Onsite Period - After conclusion of the onsite work, PCG compiles findings and interview results and writes the assessment report. The draft and final report is delivered to the Project and OCSE on the agreed-upon date. The IVVMP is updated with information for the next periodic review including projected task areas for review, updated applicable IV&V Checklists, and the suggested list of stakeholders to interview. This is delivered to the project one week before the start of the next onsite period.***

- ***Monthly Project Status Report – During active IV&V period, PCG delivers project status in a monthly report. This tracks planning, progress, outcomes and contractual requirements for PCG.***

We understand that at its core, IV&V is about risk mitigation. Because of the importance of risk identification, analysis and reporting is central to the Eclipse IV&V® framework. For this reason, our IV&V team continually looks to identify, document, report and monitor risks. Our IV&V team provides leadership with critical information that can be used to evaluate and take action on risks. This includes evaluating the likelihood that risks will occur, the impact to the project if the risk is realized, and development of mitigation strategies that can help offset risks. PCG's "exception-based reporting" helps the Replacement Project to focus on project anomalies and areas of non-compliance with OCSE and DWSS policies, and as well as industry standards that are critical to project success. This allows us to provide information to leadership as risks are identified, so that action can be taken quickly.

Additional details on individual IV&V activities required for the Replacement Project are described in the sections to follow.

3.6.2 Activities

3.6.2.1 Conduct initial IV&V Review of the Replacement Project. The Initial IV&V Review will commence within sixty (60) days from the date of contract award, with the first activity of the Initial IV&V Review being the onsite review. The IV&V Service Provider will be restricted to conducting its onsite review within a 10 calendar day period. This onsite portion of the Initial IV&V Review will include the following activities:

A. Submit to IV&V Contract Manager a schedule of onsite review activities to be performed with the Replacement Project and DWSS;

B. Submit to IV&V Contract Manager a list of Project Team and Stakeholder interviews to be performed, documentation required to review;

C. Submit to IV&V Contract Manager a list of Project Documentation to be provided for IV&V Service Provider review; and

D. Submit to IV&V Contract Manager a list of Project Meetings, etc., to be attended and observed by the IV&V Service Provider.

E. Upon completion of the onsite portion of the review, the IV&V Service Provider will leave the Project site and at their own place of business review and analyze collected Project artifacts and draft the Initial IV&V Review Report.

3.6.2.2 Create the Initial IV&V Review Report (Draft and Final).

A. An Initial IV&V Review Report (draft version) will be concurrently delivered to Federal OCSE and the IV&V Contract Manager sixty (60) calendar days after the start of the onsite portion of the Initial IV&V Review.

B. Federal OCSE will review this draft version and provide comments and ACF Priorities that will be incorporated to the draft version of the Initial IV&V Review Report and a revised report will be released to the State's Replacement Project and DWSS five (5) calendar days after receipt of ACF comments and Priorities to the draft version of the Initial IV&V Review Report.

C. Replacement Project and DWSS comments to the draft version of the Initial IV&V Review Report will be returned to the IV&V Service Provider within 20 calendar days of receipt of the draft version of the Initial IV&V Review Report.

D. The IV&V Service Provider will correct mistakes of fact to the draft version of the Initial IV&V Review Report, and append to the draft version all other Replacement Project and DWSS comments, and

redeliver the Initial IV&V Review Report, marked as Final, to OCSE, the IV&V Contract Manager, the Replacement Project and DWSS. This final version of the Initial IV&V Review Report deliverable concludes the Initial IV&V Review.

E. For each area evaluated, the report should contain the current status of the State's effort, including any pertinent historical background information. The report should also contain a detailed analysis of each area, which answers, at the least, the following general questions:

- *What is the State's current process in this area?*
- *What's good about the State's process?*
- *What about the State's process or technology needs improvement?*
- *Is the State making measurable progress in this area?*
- *Is the effort within the triple constraints of budget, scope, and schedule?*
- *What standards is the project following (State, industry [IEEE, SEI, ISO, etc.,]) internally?*
- *Are the appropriate documentation and other project artifacts accurate and up-to-date?*
- *Is there adequate Stakeholder involvement in the Project?*
- *Are best practices and metrics employed to identify issues, progress, performance, etc.?*

Responses should be quantified whenever possible. The report should also contain detailed recommendations in each area specifying what can be done immediately and in the long term to improve the State's operation. Any technologies, methodologies, or resources recommended should reflect industry standards and be appropriate for the unique circumstances and constraints of the Replacement Project. The recommendations should also specify a method of measuring the State's progress against the recommendations.

Perform Initial IV&V Review Activities and Develop Draft Report

PCG will perform all activities outlined in Sections 3.6.2.1 and 3.6.2.2. We know that over the last several months DWSS has been preparing and positioning itself to take on this significant project. To support project management needs, a PMO vendor was acquired. A Quality Assurance (QA) monitor has also been acquired to act as technical assistant to the State, and to assist and manage quality delivery of the Implementation vendor as well as assist the PMO vendor with monitoring implementation vendor deliverables for the entire project-related system development life cycle through transition to the DWSS' full operation of a modernized certified, statewide child support automated system.

In preparation for the Initial IV&V Review, PCG will provide the Replacement Project with a detailed schedule of onsite review activities, as well as a list of interviews to be performed, and request documentation for review. During the active assessment period, PCG will also attend project meetings deemed important to the scope of the assessment. PCG will provide a list of meeting to the Replacement Project that will be attended in advance of our participation.

The time spent by PCG onsite to conduct each review cycle is when our team interacts with the Replacement Project through meeting attendance and interviews to gather specific project process information. For this project, there will be an Initial Review and periodic reviews conducted every 6 months thereafter.

PCG will use Eclipse IV&V® to perform the initial analysis, with special consideration given to assessing methodologies and practices of the Implementation Vendor across critical areas of the project. The Initial IV&V Review will also include a review of the State's Project Management approach and execution, and the roles and responsibilities of it vendors.

During the onsite assessment period, PCG will review and analyze project artifacts and other information gathered. The IV&V Team will review the current status of the project in all IV&V activities, and the readiness of the Replacement Project team to manage a project of its magnitude. Our efforts will focus on early identification of potential risks, and the development of mitigation strategies to avert risk. Key areas that PCG will focus on include, but are not limited to:

- ***Assess the level of detail contained within All Replacement Project Plans. This includes whether they meet industry standards and best practices, and whether they consider all processing areas of Child Support and partnered agencies***
- ***State and contractor staffing levels***
- ***The DWSS organization capacity***
- ***The completeness of the Replacement Project schedule and the reasonableness with the order of replacement development workflow***

Here are a few more important points about our Initial IV&V Review process and activities:

- ***The Initial IV&V Review is supported by formal Interview Guides, Quality Checklists, and Evaluation Process Guides, based on the IV&V evaluation activities to be performed.***
- ***The IV&V Review Report format is presented to the Replacement Project at initiation through the formal DED process.***
- ***Our stakeholder interview process is formal and structured, and participants are provided questions in advance so that they can prepare for the interview; this enables better communication and ensures the information gathered is comprehensive across all task areas.***
- ***PCG IV&V findings are clearly presented in the IV&V Review Report and Assessment Workbook, and they tracked throughout the duration of the project.***
- ***Risk mitigation steps are included in our findings; they are actionable easily monitored as corrective steps are undertaken by the Replacement Project.***
- ***The IV&V Review Reports contain complete details of the work done during the 10-calendar day onsite assessment period.***
- ***The IV&V Review Report may also incorporate results of reviewing specific vendor deliverables, depending on the timing of the deliverables under review.***
- ***Once we've completed our initial interviews and documentation review during the 10-day onsite review cycle, we will perform the rest of our review and analysis remotely.***

Following the submission of the Initial and Periodic IV&V Review Report, our team will conduct a formal debriefing with the Replacement Project as requested. The report contains the current status of the Replacement Project's progress, including the State's activities, and a detailed analysis of each area reviewed. Where appropriate, background information may be included in order to improve understanding of any associated findings.

It is important to note that PCG will work with Replacement Project to ensure that our onsite IV&V time (and the subsequent timing our report) is not only compliant with Replacement Project and federal timeline requirements, but that is also align with the timing of major deliverables and/or decision points for the project.

Please refer to Section V.4.1 (Requirement IM-2, Conduct Initial Review) for additional information on our approach to conducting the Initial IV&V Review.

3.6.2.3 Conduct Periodic IV&V Review Activities. Periodic IV&V Reviews will commence six (6) months following the start of the previous IV&V review, with the first activity of the Periodic IV&V Review being the onsite review. The IV&V Service Provider will be restricted to conducting its onsite review within a 10 calendar day period. This onsite portion of the Initial IV&V Review will include the following activities:

A. Submit to IV&V Contract Manager a schedule of onsite review activities to be performed with State Project and Department;

B. Submit to IV&V Contract Manager a list of Project Team and Stakeholder interviews to be performed, documentation required to review;

C. Submit to IV&V Contract Manager a list of Project Documentation to be provided for IV&V Service Provider review, and,

D. Submit to IV&V Contract Manager a list of Project Meetings, etc., to be attended and observed by the IV&V Service Provider.

Upon completion of the onsite portion of the Periodic Review, the IV&V Service Provider will leave the Project site and at their own place of business review and analyze collected Project artifacts and draft the respective Periodic IV&V Review Report.

3.6.2.4 Create Periodic IV&V Review Reports (Draft and Final).

A. A Periodic IV&V Review Report (draft version) will be delivered to Federal OCSE and IV&V Contract Manager (at same time) sixty (60) calendar days after the start of the onsite portion of the respective Periodic IV&V Review.

B. Federal OCSE will review this draft version and provide comments and ACF Priorities that will be incorporated to the draft version of the Periodic IV&V Review Report and a revised report will be released to the Replacement Project and DWSS five (5) calendar days after receipt of ACF comments and Priorities to the draft version of the respective Periodic IV&V Review Report.

C. Replacement Project and DWSS comments to the draft version of the Periodic IV&V Review Report will be returned to the IV&V Service Provider within 20 calendar days of receipt of the draft version of the respective Periodic IV&V Review Report.

D. The IV&V Service Provider will correct mistakes of fact to the draft version of the respective Periodic IV&V Review Report, and append to the draft version all other Replacement Project and Department comments, and redeliver the Periodic IV&V Review Report, marked as final, to OCSE, the IV&V Contract Manager, the Replacement Project and DWSS. This final version of the respective Periodic IV&V Review Report deliverable concludes the respective Periodic IV&V Review.

E. For each area evaluated, the report should contain the current status of the State's effort, including any pertinent historical background information. The report should also contain a detailed analysis of each area, which answers, at the least, the following general questions:

- *What is the State's current process in this area?*
- *What's good about the State's process?*
- *What about the State's process or technology needs improvement?*

- *Is the State making measurable progress in this area?*
- *Is the effort within the triple constraints of budget, scope, and schedule?*
- *What standards is the project following (State, industry [IEEE, SEI, ISO, etc.,]) internally?*
- *Are the appropriate documentation and other project artifacts accurate and up-to-date?*
- *Is there adequate Stakeholder involvement in the Project?*
- *Are best practices and metrics employed to identify issues, progress, performance, etc.?*

Responses should be quantified whenever possible. The report should also contain detailed recommendations in each area specifying what can be done immediately and in the long term to improve the State's operation. Any technologies, methodologies, or resources recommended should reflect industry standards and be appropriate for the unique circumstances and constraints of the Replacement Project. The recommendations should also specify a method of measuring the State's progress against the recommendations.

F. The Periodic IV&V Review Reports should have follow-up sections providing quantified information on the progress that the State has made against the recommendations from the previous review. The follow-up information should also contain any additional and/or modified recommendations at the same level of detail as the initial recommendations. All report findings and recommendations should be historically traceable (with a clear and consistent method of identification/numbering) from the time they are first reported by the IV&V Service Provider until closure.

Perform Periodic IV&V Review Activities and Develop Report

PCG will perform all activities outlined in Sections 3.6.2.3 and 3.6.2.4. We will initiate periodic IV&V reviews six (6) months following the start of the previous IV&V review cycle. In general, PCG will use the same process detailed previously for the initial IV&V Review. This includes preparation for onsite periods, activities and methods used to execute on site activities, and preparation and submission of all findings as part of the final report and debrief. However, the specific focus areas for each Periodic IV&V Review will differ depending on the outcomes of the prior review, as well as specific timing of each in relation to the overall project lifecycle.

By the time the Periodic IV&V Reviews are initiated, it is expected that major project processes have been initiated, with planning complete and execution actively underway. As such, Periodic IV&V Assessments build upon the Initial IV&V Review, with a particular focus on assessment areas such as requirements management, systems testing, data conversion progress, system acceptance, and training. PCG will also evaluates certain deliverables (such as the project schedule) during each IV&V Periodic Assessment. This will provide a level of continuity amongst assessments that allows us to gauge progress over time.

Please refer to Section V.4.1 (Requirement IM-3, Conduct Periodic Review) for additional information on our approach to conducting the Periodic IV&V Review.

Upon completion of the onsite portion of the Periodic Review, PCG will leave the Project site and analyze collected Project artifacts and draft the respective Periodic IV&V Review Report. PCG's Periodic IV&V Review Report will be based on industry standards; it will utilize the format approved by the Replacement Project through the DED process; it will track progress-over time for prior review findings; and it will present clear and actionable findings and mitigation strategies resulting from the most recent assessment.

The Periodic IV&V Review Report will be provided to the federal OCSE and Replacement Project simultaneously, in accordance with timelines RFP and detailed in the IV&V Project Plan (i.e. within sixty (60) calendar days after the start of the onsite portion of each periodic IV&V review cycle).

Please refer to Section V.4.1 (Requirement IM-3, Conduct Periodic Review) for additional information on our approach to delivering the Draft Periodic IV&V Review Reports.

3.6.2.5 Conduct formal briefing presentations to the DWSS, CSEP, Replacement Project, and OCSE on the Respective IV&V Review Report. If desired by and requested by the Replacement Project team, CSEP, and DWSS, the IV&V Service Provider will prepare and deliver a debriefing related to the latest, respective (Initial or Periodic) IV&V Review Report's results to the Replacement Project team, CSEP, DWSS, and OCSE. Any such debriefing must be conducted within 5 calendar days of delivery of the final version of the respective (Initial or Periodic) IV&V Review Report. Debriefings prior to this milestone within the IV&V Services contract, whether during the course of an onsite review, or subsequent IV&V Service Provider review, analysis, and report creation timeframe, or prior to delivery of the respective IV&V Review Report under this contract, are prohibited.

Conduct Formal Briefing Presentations

PCG will conduct Formal Briefing Presentations to the DWSS, CSEP, Replacement Project, and OCSE following the submittal of our periodic IV&V Reports.

Briefings will be conducted within 5 calendar days of delivery of the final version of the respective (Initial or Periodic) IV&V Review Report. Briefings will be used to address any questions or provide clarification about the content presented in the associated Report.

Please refer to Section V.4.1 (Requirement IM-4, Management Briefing) for additional information on our approach to Formal Briefing Presentations.

3.6.2.6 Create Deliverable Observation Reports (DOR) as necessary. If desired and requested by the Replacement Project team, CSEP, and DWSS, the IV&V Service Provider will prepare and deliver a one-time, focused, specific Deliverable Observation Report to the IV&V Contract Manager (for delivery to the State Replacement Project, etc.,) and OCSE, at the same time, presenting an analysis of a prescribed deliverable or other task not specifically referenced by this scope of work. Examples of such focused Deliverables Observation Reports include: a network capacity, bandwidth, and throughput analysis; independent analysis of compliance of a project deliverable with contract specifications, etc. The Replacement Project team, CSEP, and DWSS may receive a debriefing on the results of such a DOR from the IV&V Service Provider only with the concurrence and attendance of OCSE.

Create Deliverable Observation Reports

As required by the RFP and clarified in Amendment #2, PCG will prepare two (2) DORs during the course of the Replacement Project. However, during the project, there may be situations where additional research and analysis is requested by the Replacement Project. In these situations, PCG will work with the Replacement Project to identify the scope, anticipated level effort, and required timing to support the requested services. Once approved, we will perform the desired services and report our findings in the DOR, and present findings in a debriefing if requested.

The DOR process is defined as part of the IVVMP. The scope and timing of each DOR will be based on the specific needs of the Replacement Project team, CSEP, and DWSS. Eclipse IV&V® outlines the basic process for the DOR, which includes:

- ***Verify that the format of the deliverable is compliant with the RFP and/or contract requirements;***
- ***Validate compliance with any applicable entry and exit criteria, quality standards, and best practices;***
- ***Verify data reported in the deliverable, when possible;***
- ***Communicate IV&V findings and recommendations; and***
- ***Recommend acceptance or rejection of the deliverable.***

This process is shown in further detail in the diagram below:

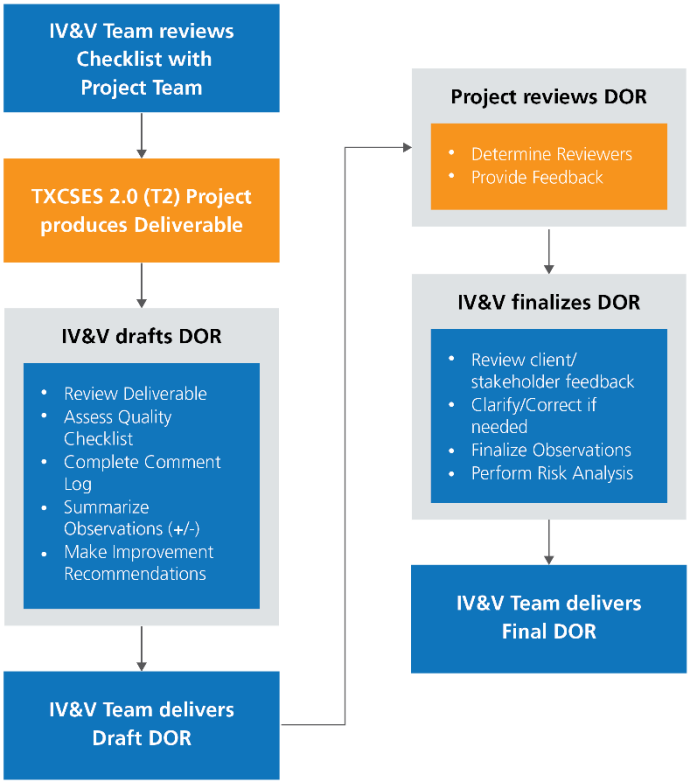


Figure V-3: Eclipse IV&V® DOR Process

Based on our prior experience supporting similar projects and systems, there are specific DORs that may be valuable to the Replacement Project. Therefore, we will present these recommendations to the project as appropriate. If approved, additional DORs will be documented in the IV&V Project Plan, and the PCG IV&V Team will prepare the requested DORs in accordance to this plan.

3.6.2.7 Archive documents. A complete CD-ROM archive of all IV&V Documents including draft and final reports, status briefings, exception reports, all versions of the Project Management Plan, Deliverable Observation Review (DOR) Reports, Monthly (Financial) Invoicing, Project Status Reports, and all project materials, documentation, artifacts, data, reports, forms, etc., collected by the IV&V Service Provider during the course of their latest IV&V Review. This complete archive is to be submitted with the respective final invoice for the IV&V Review period in question.

Archive IV&V Documents

Eclipse IV&V® outlines standardized processes for document storage and archival. The PCG team will ensure that our processes comply with Replacement Project policies and requirements outlined in the RFP. This includes maintaining a document repository on a platform that supports periodic updates as needed, according to the IV&V cycle and requested DORs. Processes used to administer document archival will be detailed in the IVVMP.

The PCG Team will have access to the various documents and documentation at all times. Upon completion of each IV&V review cycle, PCG will transfer the inventory of documents, including draft and final reports, status reports and briefings, exception reports, and various other documents to a CD-ROM for delivery to the IV&V Contract Manager.

Please see Sections V.1 (Ready the Project Environment) and V.3 (PCG IV&V Review Activities) for additional information on our approach to archiving project documents.

V.4 IV&V Requirements

3.6.3 IV&V Requirements

3.6.3.1 This section contains lists of requirements which detail specific topics for which IV&V is to be performed and reported on. All items in 5.5.3.1 through 5.5.3.11 are mandatory IV&V requirements for fulfilling related activities and considered part of this solicitation. The activities should be costed and scheduled in the bidder's IV&V Project Management Plan and reported on in the Initial and Periodic IV&V Reports.

PCG will meet all of the requirements as outlined in Section 3.6.3. This includes activities related to the following:

- ***IV&V Project Management (IM-1 through IM-4)***
- ***Replacement Project Management (PM-1 through PM-39)***
- ***Quality Management (QA-1 through QA-13)***
- ***Training (TR-1 through TR-9)***
- ***Requirements Management (RM-1 through RM-19)***

- ***Operating Environment (OE-1 through OE-14)***
- ***Development Environment (DE-1 through DE-8)***
- ***Software Development (SD-1 through SD-25)***
- ***System and Acceptance Testing (ST-1 through ST-15)***
- ***Data Management (DM-1 through DM-8)***
- ***Operations Oversight (OO-1 through OO-6)***

The following sections provide an overview of how our IV&V Team will comply with all of your project requirements.

V.4.1 IV&V Project Management

3.6.3.2 IV&V Project Management

IV&V Management Plan

IM-1: As the first deliverable the IV&V provider shall develop an IV&V Management Plan. This plan shall describe the activities, personnel, schedule, standards, and methodology for conducting the IV&V reviews. (see 3.5.1.1 for more details). Refer to VII.7 Project Management for information regarding the Independent Verification and Validation Management Plan (IVVMP.)

IV&V Management Plan (IM-1)

PCG will perform all activities outlined in RFP Section 3.6.3.2, IM-1.

The IV&V Management Plan and IV&V Schedule are the foundational tools for a successful IV&V project. Please see information provided in Sections VI.7 (Project Management) and V.2 (Planning and Administration) for our approach to developing the IV&V Management Plan (IVVMP) and IV&V Project Plan (Schedule).

Conduct Initial Review

IM-2: Prepare and deliver an Initial IV&V report on the required activities. Report on status of each activity. (see 3.6.2.1 and 3.6.2.2 for more details)

Conduct Initial Review (IM-2)

PCG will perform all activities outlined in RFP Section 3.6.3.2, IM-2.

For the Initial IV&V Review, PCG will be onsite to assess the Replacement Project's planning, preparation and initiation activities. This review will establish the foundation for subsequent Periodic IV&V Review cycles.

Please refer to Section V.3 (Conduct Initial Review) for additional information on our approach to conducting the initial review.

Conduct Periodic Review

IM-3: Prepare and deliver a Follow-up IV&V report on the required activities. Report on status of each activity and progress since the previous report. (see 3.6.2.3 and 3.6.2.4 for more details)

Management Briefing

Conduct Periodic Review (IM-3)

PCG will perform all activities outlined in RFP Section 3.6.3.2, IM-3.

PCG will prepare and deliver a follow-up IV&V report on the required activities and will report on the status of each activity and progress since the previous report. Periodic reviews will follow the same basic process outlined for the Initial Review.

Once the Periodic Review is complete, PCG will submit the Draft IV&V Periodic Report to OCSE and the IV&V Contract Manager at the same time. Once reviewed by OCSE, PCG will incorporate comments, as appropriate, to the Draft Periodic IV&V Report and submit a revised report to the State review team, after receipt of OCSE comments. Once comments are received, PCG will revise the Draft IV&V Periodic Report as necessary and redeliver the Quarterly IV&V Report, marked as Final, to OCSE and the State.

All activities will occur in compliance with timelines required by the RFP, and documented in the final IV&V Project Plan.

Please refer to Section V.3 (Conduct Periodic Review) and V.3 (Create Periodic IV&V Review Reports) for additional information on our approach to conducting the Periodic IV&V Review.

IM-4: *Prepare and deliver a formal presentation(s) on the status of the IV&V project. Presented as required, with at least ten (10) business days' notice. No more than once a month. (see 3.6.2.5 for more details).*

Management Briefing (IM-4)

PCG will perform all activities outlined in RFP Section 3.6.3.2, IM-4.

Within five (5) business days of a request by the State or OCSE, PCG will prepare and deliver a formal debriefing related to the most recent Periodic IV&V Report.

Refer to Section V.3 (Conduct Formal Briefing Presentations) for additional information on our approach to conducting the Periodic IV&V Review.

V.4.2 Replacement Project Management

The scope of the PCG's Replacement Project Management assessment will encompass several aspects, as discussed in the paragraphs below. These include project sponsorship, project management plans and procedures, project staffing / organization, risk management, organizational change management, communication management, and project estimating and scheduling, among others. The focus of our assessments, as laid out in PMBOK® 6th Edition knowledge areas is shown in the table.

Table V-2: Project Management Process

Project Management Knowledge Area	Project Management Processes	
Integration Management	***Project Plan Development***	***Taking the results of other planning processes and putting them into a consistent, coherent document.***
	Project Plan Execution	***Carrying out the project plan by performing the activities included therein.***
	Change Management	***Coordinating changes across the entire project.***
	Configuration Management	***Identifying and controlling configuration items.***
Scope Management	***Initiation***	***Committing the organization to begin the next phase of the project.***
	Scope Change Control	***Controlling changes to project scope.***
Time Management	***Activity Planning (Definition, Sequencing and Duration Estimating)***	***Identifying the specific activities that must be performed to produce the various project deliverables; identifying and documenting interactivity dependencies; estimating the number of work periods which will be needed to complete individual activities.***
	Schedule Development and Control	***Analyzing activity sequences, activity durations, and resource requirements to create the project schedule; controlling changes to the project schedule.***
Cost Management	***Resource Planning***	***Determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.***
	Cost Control	***Controlling changes to the project budget.***
	Cost Estimating	***Developing an approximation (estimate) of the costs of the resources needed to complete project activities. Cost Budgeting – allocating the overall cost estimate to individual work items.***

Project Management Knowledge Area	Project Management Processes	
Quality Management	***Quality Planning***	***Identifying which quality standards are relevant to the project and determining how to satisfy them.***
	Quality Control	***Monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.***
	Quality Assurance	***Evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.***
Human Resource Management	***Organizational Planning***	***Identifying, documenting and assigning project roles, responsibilities, and reporting relationships.***
	Team Development	***Developing individual and group skills to enhance project performance.***
	Staff Acquisition	***Getting the human resources needed assigned to and working on the project.***
Communications Management	***Communications Planning***	***Determining the information and communications needs of the stakeholders; who needs what information, when will they need it, and how will it be given to them.***
	Information Distribution	***Making needed information available to project stakeholders in a timely manner.***
	Performance Reporting	***Collecting and disseminating performance information. This includes status reporting, progress measurement, and forecasting.***
	Administrative Closure	***Generating, gathering, and disseminating information to formalize phase or project completion.***
Risk Management	***Risk Identification***	***Determining which risks are likely to affect the project and documenting the characteristics of each.***

Project Management Knowledge Area	Project Management Processes	
	Risk Quantification	***Evaluating risks and risk interactions to assess the range of possible project outcomes.***
	Risk Response Development	***Defining enhancement steps for opportunities and responses to threats.***
	Risk Response Control	***Responding to changes in risk over the course of the project.***
Contract Management	***Contract Administration***	***Managing the relationship with the contractor.***
	Contract Close-out	***Completing and settling the contract, including resolution of any open items.***

3.6.3.3 Project Sponsorship

PM-1: Assess and recommend improvement, as needed, to assure continuous executive stakeholder buy-in, participation, support and commitment, and that open pathways of communication exist among all stakeholders.

PM-2: Verify that executive sponsorship has bought-in to all changes which impact project objectives, cost, or schedule.

Project Sponsorship (PM-1 through PM-2)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM1 through PM2.

The term 'sponsor' denotes those managers or business leaders who are advocates, and are in a position of authority for the project. In this assessment, our IV&V team will verify that adequate leadership is represented and provided to promote project success, and as the project progresses, that executive sponsor(s) have bought-in to changes that impact the project scope, objectives, cost, or schedule. Based on our experience with CSE operations, we will focus on whether the Replacement Project's sponsorship model:

- ***Provides business context, expertise, and guidance to the project manager and the team;***
- ***Champions the project through strategic federal and state communication points, including "selling" and marketing the project throughout the organization to ensure capacity, funding, and priority for the project;***
- ***Acts as an escalation point for decisions and issues that are beyond the authority of the project manager;***
- ***Acts as an additional line of communication and observation with team members, customers, and other stakeholders; and***
- ***Acts as the link between the project, the business community, and strategic level decision-making groups.***

Based on our prior IV&V experience at DWSS, we know how best to effectively interact with Nova Murray, who is sponsor for the Replacement Project. Knowing DWSS' organization, we will also be in the position of identifying whether the Steering Committee and its governing processes are appropriate in relation to the complexity of the project. PCG's Project Sponsorship assessment verify:

- ***Executive leadership and key project sponsors have been identified;***
- ***Project governance documentation is sufficient given overall project goals and objectives;***
- ***Leadership and sponsor agreement with regard to documented project goals, objectives, risks, and constraints;***
- ***Communication processes are in place to effectuate leadership decisions; and***
- ***Executive sponsorship is actively involved in monitoring and approving the project baselines.***

3.6.3.3 *Management Assessment*

PM-3: Verify and assess project management and organization, verify that lines of reporting and responsibility provide adequate technical and managerial oversight of the project.

PM-4: Evaluate project progress, resources, budget, schedules, work flow, and reporting.

PM-5: Assess coordination, communication and management to verify agencies and departments are not working independently of one another and that they are following the communication plan.

Management Assessment (PM-3 through PM-5)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM3 through PM5.

The Management Assessment will be used to verify that project management activities and organization are consistent with the Project's Project Management Plan and are appropriate given the size and scope of the project. PCG's Management Assessment will be guided by PMBOK® 6th Edition and will focus on:

- ***Verifying that project management lines of reporting and responsibility provide adequate technical and managerial oversight of the project;***
- ***Evaluating project progress, resource utilization, budget, schedules against project baselines;***
- ***Verifying that communication processes are in place to implement leadership decisions and support the Replacement Project Team's ability to efficiently work together; and***
- ***Developing recommendations on how to improve the process and/or mitigate the impact of related issues and risks.***

3.6.3.3 *Project Management*

PM-6: Verify that a Project Management Plan is created and being followed. Evaluate the project management plans and procedures to verify that they are developed, communicated, implemented, monitored and complete.

PM-7: Evaluate the project reporting plan and actual project reports to verify project status is accurately traced using project metrics.

PM-8: Verify milestones and completion dates are planned, monitored, and met.

PM-9: Verify the existence and institutionalization of an appropriate project issue tracking mechanism that documents issues as they arise, enables communication of issues to proper stakeholders, documents a mitigation strategy as appropriate, and tracks issues to closure. This should include but is not limited to technical and development efforts.

PM-10: Evaluate the system's planned life-cycle development methodology or methodologies (waterfall, evolutionary spiral, rapid prototyping, incremental, etc.) to see if they are appropriate for the system being developed.

Project Management (PM-6 through PM-10)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM6 through PM10.

The Project Management assessment will be used to verify that project management processes and supporting tools are sufficient to meet the needs of the project. PCG's assessment will focus on the following:

- ***Verifying that a Project Management Plan is created and being followed;***
- ***Evaluating the project management plans and procedures to verify that they are developed, communicated, implemented, monitored and complete;***
- ***Evaluating project reporting plan and actual project reports to verify project status is accurately traced using project metrics;***
- ***Verifying milestones and completion dates are planned, monitored, and met;***
- ***Verifying the existence and institutionalization of an appropriate project issue tracking mechanism that documents issues as they arise, enables communication of issues to stakeholders, documents a mitigation strategy as appropriate, and tracks the issue to closure; and***
- ***Evaluating the system's planned life-cycle development methodology or methodologies (waterfall, evolutionary spiral, rapid prototyping, incremental, etc.) to see if they are appropriate for the Replacement Project.***

3.6.3.3 *Business Process Reengineering*

PM-11: Evaluate the project's ability and plans to redesign business systems to achieve improvements in critical measures of performance, such as cost, quality, service, and speed.

PM-12: Verify that the reengineering plan has the strategy, management backing, resources, skills and incentives necessary for effective change.

PM-13: Verify that resistance to change is anticipated and prepared for by using principles of change management at each step (such as excellent communication, participation, incentives) and having the appropriate leadership (executive pressure, vision, and actions) throughout the reengineering process.

Business Process Reengineering (PM-11 through PM-13)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM11 through PM13.

The Business Process Reengineering assessment will be used to evaluate the Replacement Project's activities to redesign business systems. PCG's assessment will focus on the following:

- ***Evaluating the Business Process Reengineering Plan to redesign business systems to achieve improvements in critical measures of performance, such as cost, quality, service, and speed;***
- ***Verifying the Business Process Reengineering Plan scope to determine adequate areas of coverage both operationally and organizationally***
- ***Verifying that the Business Process Reengineering Plan has the strategy, management backing, resources, skills, and incentives necessary for effective change;***
- ***Verifying that resistance to change is anticipated and prepared for by using principles of change management at each step and having the appropriate change management sponsorship throughout the business process reengineering process;***
- ***Verifying that the Business Process Reengineering Plan does not introduce undue risk to DWSS; and***
- ***Verifying that the Business Process Reengineering Plan takes into consideration of providing improved use of existing staff to ensure that existing staff skills can evolve as the system evolves and that historical knowledge is not lost in the process.***

3.6.3.3 *Risk Management*

PM-14: Verify that a Project Risk Management Plan is created and being followed. Evaluate the project's risk management plans and procedures to verify that risks are identified and quantified and that mitigation plans are developed, communicated, implemented, monitored, and complete.

Risk Management (PM-14)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM14.

PCG actively practices risk management when delivering IV&V services with the maintenance of findings and recommendations contained in our easy to use Risk Tracking Log. The log, like our IV&V reports, categorizes our recommendations into the major requirement areas (i.e., as reflected in Section 3.6.3 of your RFP). The strength of our risk tracking process is the development of actionable tasks to address each of our recommendations. The PCG action items developed from our Risk Tracking Log are specific tasks that support mitigation of the risks. Further, we encourage project leadership to accept or reject each action item, which PCG tracks to completion.

A risk is a potential event or situation that will likely adversely affect the Project to some degree at some point in the future. The characteristic uncertainty of a risk distinguishes it from an issue. An issue is a current challenge or problem immediately impacting the

Replacement Project to some degree. In other words, risks address potential problems and issues address existing problems. From a CSE perspective, samples of some large scale risks are:

- ***CSE system design and development order – there numerous considerations with regard to the order in which a CSE system could be replaced, as it relates to the CSE processing phases; and***
- ***Integration/interface partner readiness – partner agency planning, funding, and readiness for change can create unforeseen delays (e.g., Counties, courts).***

A key to risk management is having an understanding of all the potential risks to the project and ensuring that these risks and risk mitigation strategies are communicated to key project stakeholders on an ongoing basis. Risk analysis should begin early during project planning by determining or identifying the factors that may affect the project. Risk can impact a project in many different ways: project quality, manageability, cost, and schedule. Proper risk identification seeks to determine how the risk may affect the project and to document the project area(s) impacted by the identified risk.

PCG manages risks and issues throughout our projects, from beginning to end. As part of the initial IV&V review, a Baseline Risk and Issues list is developed. This baseline list establishes the Risk and Issues Log that will be used throughout the Project. As the Project progresses, PCG identifies new risks and issues, and tracks existing risks and issues to closure and completion. PCG provides the most recent Risk and Issues Log and reports all newly identified risks or issues in our monthly status reports and periodic IV&V reports.

Given the complexity of the Replacement Project, PCG is recommending a two-tiered risk management approach, meaning that not only will we track risks at the project level, but we will also track risks at the program level. This holistic approach ensures that risk tracking addresses things such as vendor deliverables as well as challenges arising at the Steering Committee level such as the availability of internal and external stakeholders or the effectiveness of the Project's governance structure, which directly impact project success.

Individual risks are identified not only during the course of deliverable reviews, but also through observation of project processes and meeting attendance. Newly identified risks and issues are included in the Risk and Issues Log (AKA Assessment Workbook) upon identification to facilitate early notice to the Project. Once risks are identified and characterized, both qualitative and quantitative factors are examined. Our analysis examines project conditions to determine the probability of the risk being realized and the impact to the project, if the risk is realized. Overall risk exposure is determined by finding the intersection of the probability rating and the impact rating.

The exposure rating is best represented as a risk-exposure rating matrix to determine the priority of each risk based on an assessment of probability of occurrence and magnitude of impact. Figure 7-1: Eclipse IV&V™ Risk Exposure Matrix below depicts the prioritization of risks based on this assessment.

Eclipse IV&V™ Risk Exposure Matrix

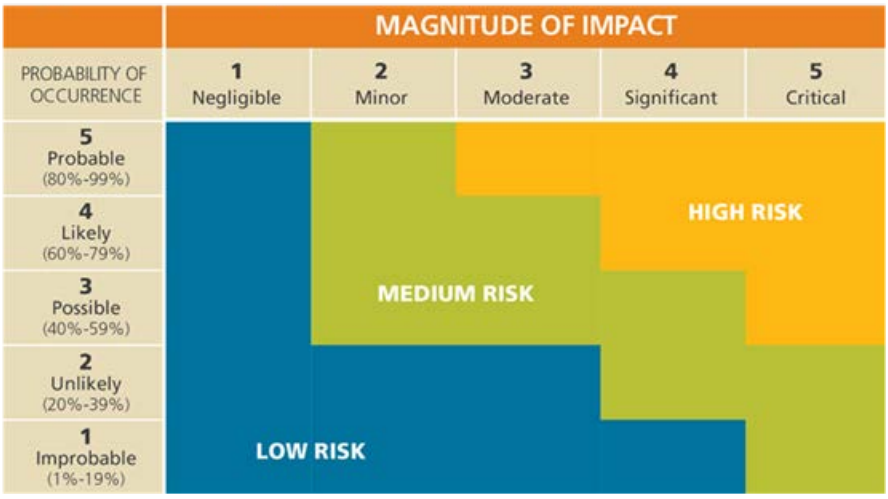


Figure V-4: Risk Exposure Matrix

Eclipse IV&V™ Risk Priority Definitions

RISK PRIORITY	DEFINITION
HIGH	Possibility of substantial impact to product quality, manageability, cost, or schedule. A major disruption is likely and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
MEDIUM	Possibility of moderate impact to product quality, manageability, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
LOW	Possibility of slight impact to product quality, manageability, cost, or schedule. Minimal disruption is likely and some oversight is needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

Figure V-5: Eclipse IV&V® Risk Priorities Definitions

PCG clearly documents risk, provides mitigation recommendations, and tracks risks to closure using a Risk and Issues Tracking Log. Mitigation recommendations include:

- ***Avoid – Risk avoidance involves eliminating the threat entirely.***
- ***Transfer – Risk transfer involves the transfer of some or all of the negative impact of a threat, along with responsibility, to a third party.***

- ***Mitigate – Risk mitigation involves reducing the probability or impact of an adverse risk event to an acceptable threshold.***
- ***Accept – Risk acceptance is adopted in the case where it is not possible or practical to eliminate the threat from a project. This strategy indicates that the project team has decided not to take steps to deal with a risk, has determined that the impact to deal with the risk is more detrimental than accepting it, or is unable to identify any other suitable response strategy.***

Risk management is a communications intensive effort. PCG's Risk and Issues Tracking Log contains fields such as those listed below, and will be tailored to meet the specific needs of your Replacement Project:

- ***Category***
- ***Description***
- ***Impact***
- ***Date Opened***
- ***IV&V Report or Cycle***
- ***Status***
- ***Status Date***
- ***Mitigation Actions***
- ***Mitigation Action Plan***
- ***Action Item Owner***

A major strength of the PCG risk tracking process is the development of action plans, or risk mitigation strategies. A single risk may have multiple action items or tasks to be completed to fully mitigate the risk. Each task is assigned an owner, and a due date to facilitate tracking of mitigation activity progress. PCG's IV&V strategy recommends that the project devise a method of evaluating the findings and recommendations made within every periodic IV&V report. Mitigation actions recommended by PCG as your IV&V partner should be either accepted or rejected. If an action is accepted, the Replacement Project may choose to create a task item within the Project Schedule to address it, or may find some risks are acceptable.

Issues are risks that have occurred. As such, issues should be resolved as soon as possible, lest they have a detrimental effect on the project. PCG's issue management process includes identification, resolution recommendations, and careful tracking in the Risk and Issue Tracking Log. Issues are shared at the Project's Risk and Issue Management meetings. All high priority/severity issues will have recovery plans, similar in nature to action plans developed for risks. Recovery plans consist of actionable tasks that must be taken to recover from, or resolve, the issue. Recovery from an issue may involve changes to the time, scope, quality and/or cost of the Project. In such instances, the recovery plan should go through the formal change control process to assure that proper governance and approval is obtained. In addition, issues will have associated exit criteria. Exit criteria define the conditions under which the issue can be considered resolved and closed. Each issue is assigned an owner, and each task to resolve the issue is assigned an owner. The issue owner may recommend closure when they feel that the recovery plan has been satisfied.

The Eclipse IV&V® Risk and Issue Management life cycle process is based on IEEE Standard 1540, Software Life Cycle Processes – Risk Management, on risk and issue management principles from ITIL and PMBOK, and lessons learned from previous projects with strong risk and issue management practices.

In conclusion, PCG's assessment will focus on the following:

- ***Verifying that a Project Risk Management Plan has been created and is being followed;***
- ***Evaluating the project's Risk Management Plan and procedures to verify that risks are being identified and quantified and that mitigation plans are developed, communicated, implemented, monitored, and complete;***
- ***Verifying that the initial and periodic risk assessments have been completed; and***
- ***Performing issue management as risks materialize.***

If PCG identifies a high-risk event, PCG will immediately notify the State of said event to ensure that the State is able to respond to the risk in a timely manner. Refer to Appendix IX.5 IV&V Risk Log (Sample Assessment) to see an example of how PCG identifies and tracks risks and issues.

3.6.3.3 *Change Management*

PM-15: Verify that a Change Management Plan is created and being followed. Evaluate the change management plans and procedures to verify they are developed, communicated, implemented, monitored, and complete; and that resistance to change is anticipated and prepared for.

Change Management (PM-15)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM15.

In its most fundamental form change management refers to controlling and managing the impact of a change. For example, Project Change Management provides a mechanism for controlling and managing changes that left unchecked could prevent the Replacement Project from accomplishing its objectives.

System/Configuration Change Management ensures that changes to IT systems have been adequately tested and controlled so as to minimize the risk that a change will cause an error or interruption in service. But it's just as critical to manage the impact of change on the people who perform the work. In this assessment area, PCG looks at the Replacement Project's actions to control the impact of change, manage change, and encourage adoption of the change.

- ***Verifying that a Project Change Management Plan has been created and is being followed; and***
- ***Evaluating the project's Change Management Plan and procedures to verify that changes are being identified and managed and that the Change Requests are developed, communicated, tested, implemented, monitored, and complete.***

3.6.3.3 *Communication Management*

PM-16: Verify that a Communication Plan is created and being followed. Evaluate the communication plans and strategies to verify they support communications and work product sharing between all project stakeholders; and assess if communication plans and strategies are effective, implemented, monitored and complete.

Communication Management (PM-16)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM16.

The Communication Management Assessment will be used to verify timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. PCG will focus on the following:

- ***Verifying that a Communication Plan is created and being followed;***
- ***Verifying that a stakeholder analysis was completed to ensure stakeholder expectations will be addressed in communication protocols;***
- ***Evaluating the Communication Plan and strategies to verify they support communications and work product sharing between all project stakeholders;***
- ***Assessing if communication plans and strategies are effective, implemented, monitored and complete; and***
- ***Consulting with all stakeholders and assessing the user involvement and buy-in regarding system functionality and the systems' ability to support program business needs.***

***Ms. Laurie Thornton**, our proposed IV&V Engagement Manager, holds Prosci® Change Management certification, which has become one of the most widely used approaches for managing the people side of change in corporations and government. As PCG TC's resident Organizational Change Management (OCM) specialist, Ms. Thornton provides change management advisory services across many of our projects.*

3.6.3.3 *Configuration Management*

PM-17: Review and evaluate the configuration management (CM) plans and procedures associated with the development process.

PM-18: Verify that all critical development documents, including but not limited to requirements, design, code and JCL are maintained under an appropriate level of control.

PM-19: Verify that the processes and tools are in place to identify code versions and to rebuild system configurations from source code.

PM-20: Verify that appropriate source and object libraries are maintained for training, test, and production and that formal sign-off procedures are in place for approving deliverables.

PM-21: Verify that appropriate processes and tools are in place to manage system changes, including formal logging of change requests and the review, prioritization and timely scheduling of maintenance actions.

PM-22: Verify that mechanisms are in place to prevent unauthorized changes being made to the system and to prevent authorized changes from being made to the wrong version of the system.

PM-23: Review the use of CM information (such as the number and type of corrective maintenance actions over time) in project management.

Configuration Management (PM-17 through PM-23)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM17 through PM23.

PCG will enhance the success of the configuration outcomes by monitoring documents, project artifacts and vendor practices for compliance to:

- ***CSEP business and program expectations and requirements***
- ***DHHS Enterprise Program objectives***
- ***Federal, State and industry regulations, standards and best practices***

Configuration is often referenced in the context of modifying products (e.g., CCSAS) to meet an organization's (e.g., CSEP's) specific business requirements. These activities in conjunction with any custom developed code will produce a production-ready solution at the completion of the project. While this is an essential activity, it should not be thought of as the only configuration-related discipline required to support the Project.

In our experience supporting many solution deployments, PCG has learned that Configuration Management as a service management process to establish and maintain the integrity of solution baselines, throughout their life cycle, should also be included as a core component of the SDLC. Configuration management as defined in CMMI for Services V1.3 includes: configuration identification, configuration (change) control, configuration status accounting, and configuration audits. Implementation of a CMP during Implementation with consideration for compatibility with processes and procedures in use by DWSS will greatly enhance the efficiency of the development outcomes.

PCG's approach to review, evaluate and assess the vendor's configuration practices as indicated in the Replacement Project requirements as well as compliance with State and federal regulations, guidelines and industry best practice. The objective of comprehensive review and consideration is to identify any risks to system-wide consistency and compatibility during introduction of CCSAS. Some examples of potential risks are:

- ***Configuration of field and role based security – risks and constraints can arise if planning and conversion of this information is not strategically completed;***
- ***Workflow configurations – consideration to CSE specific processing and mandatory information can become interrupted if in-depth holistic planning is not considered;***

The Configuration Management Assessment verifies that there are mechanisms in place to establish and maintain system requirements, design, development and operational information. PCG's Configuration Management Assessment will focus on the following:

> ***Mr. Ruben Ramos****, one of our key IV&V personnel on your Replacement Project, brings real-life program experience having worked as a child support enforcement officer for the State of Texas OAG for seven years, and as a Consortia Project Lead on the CCSAS Project. He has led teams in design, test, and issue management in child support, health and human services and desktop application systems.*

- ***Reviewing and evaluating the configuration management (CM) plans and procedures associated with the development process;***
- ***Verifying that all critical development documents, including but not limited to requirements, design, code and job control language (JCL) are maintained under an appropriate level of control;***
- ***Verifying that the processes and tools are in place to identify code versions and to rebuild system configurations from source code;***
- ***Verifying that appropriate source and object libraries are maintained for training, test, and production and that formal sign-off procedures are in place for approving deliverables;***
- ***Verifying that appropriate processes and tools are in place to manage system changes, including formal logging of change requests and the review, prioritization, and timely scheduling of maintenance actions;***
- ***Verifying that mechanisms are in place to prevent unauthorized changes being made to the system and to prevent authorized changes from being made to the wrong version; and***
- ***Reviewing the use of CM information in project management.***

Project Estimating and Scheduling

PM-24: Evaluate and make recommendations on the estimating and scheduling process of the project to ensure that the project budget and resources are adequate for the work-breakdown structure and schedule.

PM-25: Review schedules to verify that adequate time and resources are assigned for planning, development, review, testing and rework.

PM-26: Examine historical data to determine if the project/department has been able to accurately estimate the time, labor and cost of software development efforts.

Project Estimating and Scheduling (PM-24 through PM-26)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM24 through PM26.

Assessments of the Project Estimating and Schedule will be used to validate that project resources are utilized properly for the project to remain on time and on budget. PCG will focus on the following:

- ***Verifying the budget and resources meet the project's needs;***
- ***Comparing schedules against planning, development, review, testing and rework task to verify sufficient time and resources are allocated; and***
- ***Review of DWSS historical data from previous projects to determine if the State has been able to conduct accurate estimates for time, labor, and cost of software development efforts.***

3.6.3.3 *Project Personnel*

PM-27: Examine the job assignments, skills, training and experience of the personnel involved in program development to verify that they are adequate for the development task.

PM-28: Evaluate the State's hiring plan for the project to verify that adequate human resources will be available for development and maintenance.

PM-29: Evaluate the State's personnel policies to verify that staff turnover will be minimized.

Project Personnel (PM-27 through PM-29)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM27 through PM29.

Assessments of the Project Personnel will be used to verify that project resources are utilized properly for the project, and that they are available at the right times. PCG will focus on the following:

- ***Compare staff assignments versus staff qualifications to determine if the right mix of resources have been made to achieve the project's goals;***
- ***Review and evaluate the project's staffing plan to determine if the project will be able to hire that ample staff from development through maintenance of the solution; and***
- ***Review and evaluate the State's personnel policies to verify that staff turnover will be minimized.***

3.6.3.3 *Project Organization*

PM-30: Verify that lines of reporting and responsibility provide adequate technical and managerial oversight of the project.

PM-31: Verify that the project's organizational structure supports training, process definition, independent Quality Assurance, Configuration Management, product evaluation, and any other functions critical for the project's success.

Project Organization (PM-30 through PM-31)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM30 through PM31.

Assessments of Project Organization will be used to verify that project resources, organizational structure, and supporting human resource processes meet current and ongoing program needs. PCG will focus on the following:

- ***Verifying that technical and managerial governance structure provides adequate technical and managerial project oversight; and***
- ***Verifying that the project's organizational structure consists of rules and polices designed support a variety of tasks and activities including, but not limited to, training, process definition, Quality Assurance, Configuration Management, product evaluation and other critical functions.***

3.6.3.3 *Subcontractors and External Staff*

PM-32: Evaluate the use of sub-contractors or other external sources of project staff (such as an IS staff member from another State organization) in project development.

PM-33: Verify that the obligations of sub-contractors and external staff (terms, conditions, statement of work, requirements, standards, development milestones, acceptance criteria, delivery dates, etc.) are clearly defined.

PM-34: Verify that the subcontractors' software development methodology and product standards are compatible with the system's standards and environment.

PM-35: Verify that the subcontractor has and maintains the required skills, personnel, plans, resources, procedures and standards to meet their commitment. This will include examining the feasibility of any offsite support of the project

PM-36: Verify that any proprietary tools used by subcontractors do not restrict the future maintainability, portability, and reusability of the system.

Subcontractors and External Staff (PM-32 through PM-36)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM32 through PM36.

Assessments of subcontractors and external staff will be used to verify that project resources and organizational structure meet current and ongoing program needs. PCG will focus on the following:

- ***Evaluating that the sub-contractors and other external resources roles, responsibilities, and other obligations are clearly defined during various phases of the project;***
- ***Evaluate subcontractor resource management plans to determine if the subcontractors is meeting their contractual obligations including but not limited to, maintaining the expected skillsets, staffing levels, plans, procedures and standards;***
- ***Evaluate that development methodologies used by subcontractors' are aligned with the project's standards and the State's environments; and***
- ***Verifying the use of subcontractors' proprietary tools does not restrict the future systems maintainability, portability, and reusability.***

3.6.3.3 *State Oversight*

PM-37: Verify that State oversight is provided in the form of periodic status reviews and technical interchanges.

PM-38: Verify that the State has defined the technical and managerial inputs the subcontractor needs (reviews, approvals, requirements and interface clarifications, etc.) and has the resources to supply them on schedule.

PM-39: Verify that State staff have the ultimate responsibility for monitoring project cost and schedule

State Oversight (PM-37 through PM-39)

PCG will perform all activities outlined in RFP Section 3.6.3.3, PM37 through PM39.

Oversight assessments will be used to verify that project oversight is provided in the form of status reviews and technical interchanges. PCG will focus on the following:

- ***Verifying that the project conducts ongoing reviews of various status and technical aspects of the project;***

- ***Verifying that project oversight is defined in such a manner as to validate that technical and managerial input is readily available for the subcontractor to complete their assigned tasks as scheduled; and***
- ***Verifying that the DWSS not only has the ultimate responsibility for monitoring project cost and schedule, but that the staff executes their duties according to the schedule and defined project governance.***

V.4.3 Quality Management

Quality Assurance

QA-1: *Evaluate and make recommendations on the project's Quality Assurance plans, procedures and organization.*

QA-2: *Verify that QA has an appropriate level of independence from project management.*

QA-3: *Verify that the QA organization monitors the fidelity of all defined processes in all phases of the project.*

QA-4: *Verify that the quality of all products produced by the project is monitored by formal reviews and sign-offs.*

QA-5: *Verify that project self-evaluations are performed and that measures are continually taken to improve the process.*

QA-6: *Monitor the performance of the QA contractor by reviewing its processes and reports and performing spot checks of system documentation; assess findings and performance of the processes and reports.*

QA-7: *Verify that QA has an appropriate level of independence; evaluate and make recommendations on the project's Quality Assurance plans, procedures and organization.*

QA-8: *Verify that the QA vendor provides periodic assessment of the CMM activities of the project.*

QA-9: *Evaluate if appropriate mechanisms are in place for project self-evaluation and process improvement.*

Quality Assurance (QA-1 through QA-9)

PCG will perform all activities outlined in RFP Section 4.3, QA-1 through QA-9.

The PCG QA Assessment will verify that quality standards are established in accordance with DWSS, OCSE, and industry standards, and are being implemented consistently throughout the project. We understand that DWSS has acquired a QA vendor who will work with and report to CSEP's Project Management Team to develop a quality management plan, monitor project tasks and activities, and report on deviations from the approved project management plan. PCG's IV&V services will be yet another element of DWSS' risk mitigation strategy for the Replacement Project. In recognition of that, our QA Assessment will focus on the following:

- ***Verifying that metrics are collected by the QA vendor are analyzed and used to measure and improve quality throughout the life of the project;***
- ***Validate that the QA vendor provided appropriate metrics to measure compliance with requirements and project plans, standards, and process development procedures;***
- ***Validate that quality assurance reports provided by the QA Vendor include recommended solutions to quality problems;***
- ***Providing quality assurance and support services for the duration of the contract;***

> ***Ms. May Fung****, one of our key IV&V personnel on your Replacement Project, brings 4 years of quality assurance experience on the CCSAS Project. Her responsibilities included serving as a technical lead of the Quality Assurance team, reviewing requirements, design and testing of developed system, and advising DCSS on quality of system development life cycle activities.*

- ***Evaluating and making recommendations on the project's Quality Assurance plans, procedures, and organization;***
- ***Verifying that the QA vendor monitors the fidelity of all defined processes in all phases of the project;***
- ***Verifying that the quality of all products produced by the project is monitored by formal reviews and sign-offs;***
- ***Verifying that project self-evaluations are performed and that measures are continually taken to improve the process;***
- ***Monitoring the performance of the QA team by reviewing its processes and reports and performing checks of system documentation; assessing findings and performance of the processes and reports;***
- ***Verifying that QA has an appropriate level of independence from project management;***
- ***Verifying that the QA vendor provides periodic assessment of the CMM activities of the project and that the project takes action to reach and maintain the CMM level as defined by the State; and***
- ***Evaluating if appropriate mechanisms are in place for project self-evaluation and process improvement.***

Process Definition and Product Standards

QA-10: *Review and make recommendations on all defined processes and product standards associated with the system development.*

QA-11: *Verify that all major development processes are defined and that the defined and approved processes and standards are followed.*

QA-12: *Verify that the processes and standards are compatible with each other and with the system development methodology.*

QA-13: *Verify that all process definitions and standards are complete, clear, up-to-date, consistent in format, and easily available to project personnel*

Process Definition and Product Standards (QA-10 through QA-13)

PCG will perform all activities outlined in RFP Section 4.3, QA-10 through QA-13.

The Process Definition and Product Standards Assessment will be used to evaluate the appropriateness of proposed development processes and product standards for the project:

- ***Reviewing and making recommendations on all defined processes, the order of development, and product standards associated with the system development;***
- ***Verifying that all major development processes are defined and that the defined and approved processes and standards are followed in development;***
- ***Verifying that the processes and standards are compatible with each other, aligned with business processing order, and with the system development methodology;***
- ***Verifying that all process definitions and standards are complete, clear, up-to-date, consistent in format, and easily available to project personnel; and***
- ***Verifying that enough time is built into the schedule to adhere to the overall process standards within system development***

V.4.4 Training

3.6.3.5 User Training and Documentation

TR-1: Review and make recommendations on the training provided to system users. Verify sufficient knowledge transfer for maintenance and operation of the new system.

TR-2: Verify that training for users is instructor-led and hands-on and is directly related to the business process and required job skills.

TR-3: Verify that user-friendly training materials and help desk services are easily available to all users.

TR-4: Verify that all necessary policy and process and documentation are easily available to users.

TR-5: Verify that all training is given on-time and is evaluated and monitored for effectiveness, with additional training provided as needed.

User Training and Documentation (TR-1 through TR-5)

PCG will perform all activities outlined in RFP Section 3.6.3.5, TR-1 through TR-5.

PCG will perform IV&V of user training preparation, design, development, implementation, evaluation techniques, and content management. PCG will conduct a series of Training Assessments that will align with the SLDC phase of each Replacement Project component, and will aim to verify the following:

- ***A detailed needs analysis is conducted prior to training design that identifies:***
  - ***Stakeholders***
  - ***All training audiences***
  - ***Training needs and requirements***
  - ***Responsibilities (i.e., Responsibility Assignment Matrix)***

- ***Required supplemental materials (i.e., job aids)***
- ***Evaluation techniques***
- ***Remediation approach***

- ***A Training Plan is developed by the vendor, approved by the State, and managed to include details on training analysis, design, development, implementation, and evaluation;***
- ***All training requirements – as stated in the RFP or SOW – are satisfied by the vendor;***
- ***Training content is fully traceable to contractual requirements and relevant project documentation (i.e., design documentation, policy and process redesign, etc.);***
- ***A training schedule for content design, development, and delivery is created, approved by the State, and adhered to by the vendor;***
- ***Training is delivered via the medium and/or channel specified and agreed to by the State;***
- ***Training quality metrics and key performance indicators are satisfied***
- ***Industry standards and best practices are considered;***
- ***Sufficient knowledge transfer is performed to enable the State to assume M&O responsibilities;***
- ***Training, policy, and business process documentation is clear, accurate, current, managed, and readily available to all system users;***
- ***Materials (i.e., FAQs, reference guides) and resources (i.e., Help Desk) are available and thorough enough in detail to provide easily accessible, multi-channel help to system;***
- ***Training program evaluation techniques are clearly defined and executed; and***
- ***Remediation, update, and ongoing training efforts are clearly defined and executed.***

Developer Training and Documentation

TR-6: Review and make recommendations on the training provided to system developers.

TR-7: Verify that developer training is technically adequate, appropriate for the development phase, and available at appropriate times.

TR-8: Verify that all necessary policy, process and standards documentation is easily available to developers.

TR-9: *Verify that all training is given on-time and is evaluated and monitored for effectiveness, with additional training provided as needed.*

Developer Training and Documentation (TR-6 through TR-9)

PCG will perform all activities outlined in RFP Section 3.6.3.5, TR-6 through TR-9.

PCG will perform the same assessment as described in User Training and Documentation (TR-1 through TR-5) above except that we will ensure that system developers are being trained.

V.4.5 Requirements Management

3.6.3.6 Requirements Management

RM-1: Evaluate and make recommendations on the project's process and procedures for managing requirements.

RM-2: Verify that system requirements are well-defined, understood and documented.

RM-3: Evaluate the allocation of system requirements to hardware and software requirements.

RM-4: Verify that software requirements can be traced through design, code and test phases to verify that the system performs as intended and contains no unnecessary software elements.

RM-5: Verify that requirements are under formal configuration control.

Requirements Management (RM-1 through RM-5)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-1 through RM-4.

Requirements processes support the identification, documentation, analysis, traceability, prioritization, communication, control and maintenance of project requirements. To obtain strong requirements, a meaningful definition and management process is needed to ensure that elicitation sessions engage team members in a productive, efficient manner, which will also help in managing stakeholder expectations as participants develop a more complete view of the project's requirements and challenges.

For a project involving multiple sub-projects such as the Replacement Project, consideration must be given both to managing requirements within a subproject as well managing those requirements that will be reused or shared across projects.

The purpose of this assessment is to review requirements management processes, including traceability, and to conduct an analysis of the requirement characteristics (also referred to as a goodness analysis).

Specific tasks include:

- ***Verify that a Requirements Management Plan (RMP) exists and that it addresses initiation, planning, development, baseline, change management, traceability, and validation/verification;***
- ***Verify that a Project Requirements Manager role exists and is responsible for requirement management;***

> ***Ms. Maribeth Pollard,*** *one of our CCSAS SMEs, provided task leadership and support to DCSS' Financial Accounting and Child Support Enforcement staff for Business Process Analysis and Re-Engineering activities associated with the implementation of the CCSAS. This included examining the existing functions and processes and providing a strategic view of where DCSS needed to be in the future within financial accounting and reporting as DCSS moves forward with the State's Child Support Program.*

- ***Verify that the project business stakeholders have been adequately informed of the project charter and scope in order to avoid creation of requirements that do not align with the State's goals;***
- ***Evaluate and make recommendations about the RMP processes and procedures for managing system requirements;***
- ***Validate that the project is following the documented processes;***
- ***Verify that a requirements repository(ies) exists, is being used, and supports requirements management across all Replacement Projects (e.g., reusability, shared requirements, and so forth);***
- ***Verify that the RMP addresses how traceability will be managed during the different phases of the SDLC and projects;***
- ***Evaluate and verify that requirements are under formal configuration control; and***
- ***Evaluate and verify that software requirements can be traced through design, code, and test phases to verify that the system performs as intended and contains no unnecessary software elements.***

Quality requirements are critical to the success of every system project to help ensure that the requirements are documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design. Our assessment verifies that each reviewed requirement contains the characteristics of an individual requirement and a requirement set, as defined by IEEE 29148-2011.

Security Requirements

RM-6: Evaluate and make recommendations on project policies and procedures for ensuring that the system is secure and that the privacy of client data is maintained.

RM-7: Evaluate the project's restrictions on system and data access.

RM-8: Evaluate the project's security and risk analysis.

RM-9: Verify that processes and equipment are in place to back up client and project data and files and archive them safely at appropriate intervals.

Security Requirements (RM-6 through RM-9)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-6 through RM-9.

PCG's independent assessment services are informed by NIST Special Publication 800-53 R4, Security and Privacy Controls for Federal Information Systems and Organizations, and NIST Special Publication 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations. In Nevada, we performed an Independent Security Assessment of DWSS' HCR EE system in conformance with objectives outlined in the CMS Catalog of Minimum Acceptable Risk Controls for Exchanges – Exchange Reference Architecture Supplement Version

Mr. Benjamin Robinson, *our Security SME, brings practical experience in conducting security assessments based on the foundations of NIST, FERPA, FIPS, and IRS Publications.*

1.0 dated August 1, 2012 to NIST 800 53 Rev 3 Compliance. We have assessed security requirements in several other states, including Delaware, Hawaii and Washington.

Assessment of security requirements is approached from both the perspective of assuring that the project requirement includes requirements that ensure security of the system(s) and privacy of client data as well as security of project data. Using State and Department security policies and procedures, relevant State and federal security and privacy requirements and standards, we will evaluate that the project requirements appropriately meet security needs.

Specific tasks include:

- ***Evaluate and verify project security for managing requirements and performing the risk analysis on each requirement;***
- ***Evaluate and verify that processes and equipment are in place to back up project information and files and archive them safely at appropriate intervals;***
- ***Evaluate and make recommendations on project policies and procedures for ensuring the system is secure and the privacy of client information is protected; and***
- ***Evaluate and verify project restrictions to control system and information access.***

Requirements Analysis

RM-10: Verify that an analysis of client, State and federal needs and objectives has been performed to verify that requirements of the system are well understood, well defined, and satisfy federal regulations.

RM-11: Verify that all stakeholders have been consulted as to the desired functionality of the system, and that users have been involved in prototyping of the user interface.

RM-12: Verify that all stakeholders have bought-in to all changes which impact project objectives, cost, or schedule.

RM-13: Verify that performance requirements (e.g. timing, response time and throughput) satisfy user needs

RM-14: Verify that user's maintenance requirements for the system are completely specified.

Requirements Analysis (RM-10 through RM-14)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-10 through RM-14.

Obtaining systems that meet project objectives and user needs starts with a complete set of requirements that cover business and technical needs, foster efficacy of business processes, and provide for efficient and straightforward ongoing maintenance of the system. Our approach to the Requirements Analysis tasks is to observe requirements elicitation or Joint Application Requirements (JAR) sessions, providing assistance in facilitation where required while maintaining the level of independence required from an IV&V contractor. We will also validate that the requirements analysis documentation accurately and completely reflects the outcome of the requirements efforts conducted. We will interview stakeholders to assess user involvement and buy-in regarding requirements definition; this is to assure that stakeholders and other key users understand the

significance that requirements hold in obtaining the system functionality and ability to meet program needs.

We will identify the applicable standards and regulations at the beginning of the requirements effort and track that each has been met through one or more requirements. We expect that the requirements management tool will support the identification and tracking of these requirements.

Specific tasks include:

- ***Verify that a requirements analysis of State and federal requirements and objectives has been performed to verify that the system requirements are well understood, well- defined, and meet federal and state regulations;***
- ***Verify that stakeholders have been consulted about the desired functionality, and users have been involved in prototyping the user interface;***
- ***Evaluate change control/management processes for requirements to assure that changes that impact project objectives, cost, and/or schedule can be identified, tracked, and follow an approval process;***
- ***Verify that stakeholders have bought-in to all changes which impact project objectives, cost, or schedule;***
- ***Verify that performance requirements, such as timing, response time, and throughput, meet user requirements;***
- ***Verify that user maintenance requirements for the system are completely specified; and***
- ***Validate requirements documentation from the implementation vendor.***

Interface Requirements

RM-15: Verify that all system interfaces are exactly described, by medium and by function, including input/output control codes, data format, polarity, range, units, and frequency.

RM-16: Verify approved interface documents are available and that appropriate relationships (such as interface working groups) are in place with all agencies and organizations supporting the interfaces.

Interface Requirements (RM-15 through RM-16)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-15 through RM-16.

This purpose of this assessment task is to assure that all system interfaces and integration are identified, documented, and tracked. PCG examines system interface efforts to determine that requirements exist to account for all critical interfaces/integrations, particularly those that require custom formats. Our approach begins with a review of a list of any existing system interfaces/integrations from legacy systems, along with newly identified interfaces/integrations through the implementation RFPs and through requirements definition. These inputs are compared to defined requirements, and schedules.

We observe interface working group sessions and documentation over time to assure that all interfaces/integrations are accounted for and documented, and that relationships with other agencies and organizations are in place and that those entities are aware of their obligations (if any) and the project timeline.

Specific tasks include:

- ***Evaluate interface requirements for completeness (all interfaces identified);***
- ***Evaluate interface design/description documents for content (medium, function, type of interface, file type, format, data elements, polarity, scope, direction, and other appropriate information);***
- ***Verify input/output control codes, range, units and frequency;***
- ***Verify that agreements are in place between externally interfacing systems/agencies/organization that clearly define the scope and requirements (format, timing, error handling, and so forth) for the interfaces;***
- ***Evaluate the dependencies of interfaces are supported;***
- ***Analyze data structure and attribute properties and mapping to validate support of the design; and***
- ***Verify that interfaces are designed to support project configuration management.***

Requirements Allocation and Specification

RM-17: Verify that all system requirements have been allocated to either a software or hardware subsystem.

RM-18: Verify that requirements specifications have been developed for all hardware and software subsystems in a sufficient level of detail to ensure successful implementation.

Requirements Allocation and Specification (RM-17 through RM-18)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-17 through RM-18.

Categorizing requirements is a key portion of a robust requirements management plan. In typical SDLCs, requirements are first grouped, or categorized, by business function or need. This ensures that all requirements for a given business purpose are identified. Once the requirements have been defined and approved, they must then be associated with, or allocated to, a software or hardware subsystem. This allows the requirement to be assigned to the proper teams of developers and analysts for construction, testing, and implementation. The allocation of requirements to a subsystem also permits analysis of the requirements by subsystem to assure that all specifications for the subsystem have defined in sufficient detail to successfully implement the system. Stated differently, categorizing requirements by business function assures the business function has been fully specified; allocating requirements by subsystem assures that the technical subsystem has been fully specified.

The purpose of this assessment activity is to assure that each requirement has been allocated to a subsystem, and that each subsystem has a complete set of requirement specifications. Specific tasks for this assessment include:

- ***Evaluate and verify the allocation of system requirements to hardware and software subsystems; and***
- ***Evaluate requirements specifications by subsystem to assure completeness of the requirement set.***

Reverse Engineering

RM-19: *If a legacy system or a transfer system is or will be used in development, verify that a well-defined plan and process for reengineering the system is in place and is followed. The process, depending on the goals of the reuse/transfer, may include reverse engineering, code translation, re-documentation, restructuring, normalization, and re-targeting.*

Reverse Engineering (RM-19)

PCG will perform all activities outlined in RFP Section 3.6.3.6, RM-19.

When an existing system, either a legacy or transfer system, is used in development, there may be requirements inherent in that existing system that must be identified and documented for the system. While there are many methods to derive or harvest requirements or business rules from an existing system, the key success factor is to define the plan to conduct the work. The plan will outline the methods to be used, the validation and approval processes, and the approach to identifying target portions of the existing system to be harvested.

The purpose of this assessment is to verify that the reverse engineering plan is in place and that it is reasonable for the system and scope of the project. Specific tasks include:

- ***Verify that a reverse engineering plan has been developed;***
- ***Verify that the reverse engineering plan describes the plan, methods, and processes to be used - which may include code translation, re-documentation, restructuring, normalization, and re-targeting;***
- ***Evaluate whether the methods and processes to be used are reasonable and sufficient for the project scope;***
- ***Verify that the plan is being followed; and***
- ***Verify that the requirements harvested from the reverse engineering effort are documented according to the RMP.***

V.4.6 Operating Environment

3.6.3.7 System Hardware

OE-1: Evaluate new and existing system hardware configurations to determine if their performance is adequate to meet existing and proposed system requirements.

OE-2: Determine if system hardware is compatible with the State's existing processing environment, if it is maintainable, and if it is easily upgradeable. This evaluation will include, but is not limited to, CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers and storage devices.

OE-3: Evaluate current and projected vendor support of the hardware, as well as the State's hardware configuration management plans and procedures.

System Hardware (OE-1 through OE-3)

PCG will perform all activities outlined in RFP Section 3.6.3.7, OE-1 through OE-3.

The PCG System Hardware evaluation will provide the State with the right assurances and recommendations to verify the system hardware is adequate to support service level agreements and other requirements. A core component of our approach includes identifying risks and providing mitigation strategies in our assessments. Steps associated with this activity include:

- ***Review the system hardware performance requirements and assess baseline performance against requirements. Determine if and where performance gaps may exist in the hardware configuration relative to existing and proposed system requirements;***
- ***Validate the hardware is adequately sized to vendor specifications;***
- ***Validate hardware compatibility with existing processing environments (i.e. storage area network, backup systems, network infrastructure) based on our review of the baseline hardware configuration inclusive of new and existing components;***
- ***Validate that model numbers and internal components are supported and identify end-of-life dates, as applicable, based on our review of the baseline hardware configuration inclusive of new and existing components. Components include server CPUs and other processors, memory, network interface controllers, network cabling, routers, switches, printers, and storage devices***
- ***Review and evaluate the State's hardware configuration management plans and procedures against internal State standards and best practice frameworks such as the Information Technology Information Library (ITIL®) and to the extent possible IEEE 828 Software Configuration Management Plans.***

System Software

OE-4: Evaluate new and existing system software to determine if its capabilities are adequate to meet existing and proposed system requirements.

OE-5: Determine if the software is compatible with the State's existing hardware and software environment, if it is maintainable, and if it is easily upgradeable. This evaluation will include, but is not limited to, operating systems, middleware, and network software including communications and file-sharing protocols.

OE-6: Current and projected vendor support of the software will also be evaluated, as well as the State's software acquisition plans and procedures.

System Software (OE-4 through OE-6)

PCG will perform all activities outlined in RFP Section 3.6.3.7, OE-4 through OE-6.

PCG will provide the State with the right assurances and recommendations to support a robust and reliable system software implementation. Steps associated with this activity include:

- ***Review the current and proposed system technology architecture and software with a focus on technology tools, standards and protocols to allow technology integration. Such categories include:***
  - ***Software design***
  - ***Software maintenance***
  - ***Software construction***
  - ***Software configuration management***
  - ***Software testing***
  - ***Software quality***
  - ***Software engineering***
- ***Review the existing and proposed system requirements with a focus on the system software architecture, and categorizing the specific requirements and performing a forward trace to verify requirements are addressed within the technology;***
- ***Review the software relative to the State's current hardware and software standards for software configuration and existing system implementations; and***
- ***Review the current and projected software management processes, including review of cost of ownership, licensing, maintenance resources, vendor support policy, and release schedule.***

As a result of this review, PCG will be able to confirm whether software is:

- ***Compatible with the State's existing hardware and operating systems, middleware, and network software environment;***
- ***Maintainable; and***
- ***Easily upgradeable.***

This evaluation will include, but is not limited to, including.

Database Software

OE-7: Evaluate new and existing database products to determine if their capabilities are adequate to meet existing and proposed system requirements.

OE-8: Determine if the database's data format is easily convertible to other formats, if it supports the addition of new data items, if it is scalable, if it is easily refreshable and if it is compatible with the State's existing hardware and software, including any on-line transaction processing environment.

OE-9: Evaluate any current and projected vendor support of the software, as well as the State's software acquisition plans and procedures.

Database Software (OE-7 through OE-9)

PCG will perform all activities outlined in RFP Section 3.6.3.7, OE-7 through OE-9.

PCG will provide the State with the proper assurances and recommendations to verify the database software meets the associated requirements and needs to implement the system successfully. Steps associated with this activity include:

- ***Assess the database software to verify that that database products capabilities are adequate to meet existing and proposed system requirements***
- ***Review the data technology architecture, as this guides the selection and integration of data-related technology. Data technology architecture defines standard tool categories, preferred tools in each category, and technology standards and protocols for technology integration. These categories in the data technology architecture include:***
    - ***Database management systems (DBMS)***
    - ***Extract – Transform – Load (ETL) tools***
    - ***Database management utilities***
    - ***Data quality analysis and data cleansing tools***
    - ***Data modeling and model management tools***
    - ***Business Intelligence software for reporting and analysis***
    - ***Meta-data management software, including meta-data repositories***
- ***Review the State's current hardware and software standards / implementation for database software configuration, with an emphasis on on-line transaction processing environments. After a full review of the proposed data design, an analysis will be performed, identifying any 'gaps' in technology or architecture between the current configuration and the proposed system;***
- ***Review the proposed Data Definition Language (DDL), and report on the DBMS specific objects and concepts in use, and provide analysis on other DBMS systems for portability (including support of new data items, scalability, and refreshable of the data); and***
- ***Review the current and projected data operations management processes, including review of cost of ownership, licensing, maintenance resources, vendor support policy and release schedule.***

System Capacity

OE-10: Evaluate the existing processing capacity of the system and verify that it is adequate for current statewide needs for both batch and on-line processing.

OE-11: Evaluate the historic availability and reliability of the system including the frequency and criticality of system failure.

OE-12: Evaluate the results of any volume testing or stress testing.

OE-13: Evaluate any existing measurement and capacity planning program and evaluate the system's capacity to support future growth.

OE-14: Make recommendations on changes in processing hardware, storage, network systems, operating systems, COTS software, and software design to meet future growth and improve system performance.

System Capacity (OE-10 through OE-14)

PCG will perform all activities outlined in RFP Section 3.6.3.7, OE-10 through OE-14.

The PCG System Capacity evaluation will provide the State with the right assurances and recommendations to verify the system capacity is adequate to support service level agreements and other requirements. A core component of our approach includes identifying risks and providing mitigation strategies in our assessments. Steps associated with this activity include:

- ***Verify, through review of existing online and batch performance reports and system capacity planning exercises, the system will perform as required. Verify the existing reporting mechanisms capture relevant and accurate data that are not skewed by using statistical "trickery" such as averaging out long-running transactions or the use of misleading performance criteria such as "90th percentile";***
- ***Review and evaluate application service delivery, including availability and reliability, against service level agreements, service targets, or other existing quantifiable measures. Our review will include an evaluation of the frequency and type of system failure insomuch as data is available from the State. Prioritization or ranking of the criticality of the failures will include a two-pronged approach: 1) criticality from a hardware / software centric viewpoint (i.e. whether the failure is likely to occur again, and what the technical implications of the failure are) and 2) criticality from a viewpoint centered on the State's business priorities (i.e. what the failure means to business processing and meeting the goals of the State);***
- ***Review performance (estimation, load, stress, and endurance) test methodologies and test results as measured against requirements. As part of this review, verify the performance test environment was accurately calibrated against existing performance delivery in production. Verify load test results result in compliant performance delivery and that stress test results exercise the system to its breaking point such that thresholds for component failure can be established. Verify endurance testing is structured to identify gaps such as memory leaks that may occur only under lengthy system operation;***
- ***Evaluate the holistic design and individual components of the entire solution (inclusive of hardware and operating system software of servers, storage, networks, desktops/laptops, and printers) and recommend changes based on industry standards, best practices, and fitness for purpose; and***
- ***Evaluate the use of COTS and other software in terms of their ability to meet current and future needs of the State. Current and future needs of the State must include forward-thinking designs that are sustainable even as the pace of change in technology quickens. In addition to good design, hardware, and software, it is essential that solid capacity management processes be in place in order to manage the inevitable changes that will occur during the life of the project.***

V.4.7 Development Environment

3.6.3.8 Development Hardware

DE-1: Evaluate new and existing development hardware configurations to determine if their performance is adequate to meet the needs of system development.

DE-2: Determine if development hardware is maintainable, easily upgradeable, and compatible with the State's existing development and processing environment. This evaluation will include, but is not limited to, CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers and storage devices.

DE-3: Current and projected vendor support of the hardware will also be evaluated, as well as the State's hardware configuration management plans and procedures.

Development Hardware (DE-1 through DE-3)

PCG will perform all activities outlined in RFP Section 3.6.3.8, DE-1 through DE-3.

The Development Hardware evaluation will provide the State with the right assurances and recommendations to verify the development hardware is adequate to support development activities and other requirements. A core component of our approach includes identifying risks and providing mitigation strategies in our assessments. Steps associated with this activity include:

- ***Review the hardware performance requirements and assess baseline performance against requirements. Determine if and where performance gaps may exist in the hardware configuration relative to existing and proposed requirements;***
- ***Validate the hardware is adequately sized to vendor specifications;***
- ***Validate hardware compatibility with existing processing environments (i.e. storage area network, backup systems, network infrastructure) based on our review of the baseline hardware configuration inclusive of new and existing components;***
- ***Validate that model numbers and internal components are supported and identify end-of-life dates, as applicable, based on our review of the baseline hardware configuration inclusive of new and existing components. Components include server CPUs and other processors, memory, network interface controllers, network cabling, routers, switches, printers, and storage devices***
- ***Review and evaluate the State's hardware configuration management plans and procedures against internal State standards and best practice frameworks such as the ITIL®, Microsoft Operations Framework and to the extent possible IEEE 828-2005 Software Configuration Management Plans.***

Development Software

DE-4: Evaluate new and existing development software to determine if their capabilities are adequate to meet system development requirements.

DE-5: Determine if the software is maintainable, easily upgradeable, and compatible with the State's existing hardware and software environment.

DE-6: Evaluate the environment as a whole to see if it shows a degree of integration compatible with good development. This evaluation will include, but is not limited to, operating systems, network

software, CASE tools, project management software, configuration management software, compilers, cross-compilers, linkers, loaders, debuggers, editors, and reporting software.

DE-7: Evaluate language and compiler selection with regard to portability and reusability (ANSI standard language, non-standard extensions, etc.)

DE-8: Evaluate current and projected vendor support of the software, as well as the State's software acquisition plans and procedures.

Development Software (DE-4 through DE-8)

PCG will perform all activities outlined in RFP Section 3.6.3.8, DE-4 through DE-8.

PCG will provide the State with the right assurances and recommendations to support a robust and reliable system software implementation. Steps associated with this activity involve review of the current and proposed system technology architecture and software with a focus on technology tools, standards and protocols to allow technology integration (i.e., design, maintenance, construction, configuration management, testing, quality, and engineering), including:

- ***Review the existing and proposed system requirements with a focus on the system software architecture, and categorizing the specific requirements and performing a forward trace to verify requirements are addressed within the technology;***
- ***Review the software relative to the State's current hardware and software standards for software configuration and existing system implementations;***
- ***Review of software integration and review of language and compiler selection with regard to portability and reusability; and***
- ***Review the current and projected software management processes, including review of cost of ownership, licensing, maintenance resources, vendor support policy, and release schedule.***

V.4.8 Software Development

3.6.3.9 High-Level Design

SD-1: Evaluate and make recommendations on existing high level design products to verify the design is workable, efficient, and satisfies all system and system interface requirements.

SD-2: Evaluated the design products for adherence to the project design methodology and standards.

SD-3: Evaluate the design and analysis process used to develop the design and make recommendations for improvements. Evaluate design standards, methodology and CASE tools used and make recommendations.

SD-4: Verify that design requirements can be traced back to system requirements.

SD-5: Verify that all design products are under configuration control and formally approved before detailed design begins.

High-Level Design (SD-1 through SD-5)

PCG will perform all activities outlined in RFP Section 3.6.3.9, SD-1 through SD-5.

The High-Level Design assessment will verify the system design follows the intent and requirements of the system. PCG follows an industry and best practices approach to evaluation, taking into account both the initial development and the long-term maintainability of the system. Steps associated with this activity include:

> ***Mr. Paul Wertheim,*** *one of our CCSAS and Legacy Transition SMEs, helped develop the CCSAS system in California as a certified Accenture Technology Architect and has intimate knowledge of the technical architecture and technologies used in the solution. This includes expert knowledge of secure internet applications, conducting phased implementations, and executing automated testing as applied to*

- ***Review the vendor's proposed high-level design with an emphasis on the viability of the design, system efficiency, scalability, maintainability and completeness;***
- ***Review the vendor's design standards, process and practices and tools to verify the most effective coverage of design topics for system and system interface requirements, and the most effective use of resources and time;***
- ***Review the vendor's design deliverables for adherence to the project's requirements, defined practices and methodologies as well as industry and best practices for design;***
- ***Validate that all design output products have been classified as configurable items and are accurately tracked per the Configuration Management Plan; and***
- ***Verify the Requirements Traceability Matrix is correctly populated, updated regularly, and traceable back to the source requirements.***

Detailed Design

SD-6: Evaluate and make recommendations on existing detailed design products to verify that the design is workable, efficient, and satisfies all high level design requirements.

SD-7: Evaluate design products for adherence to the project design methodology and standards.

SD-8: Evaluate the design and analysis process used to develop the design and make recommendations for improvements.

SD-9: Design standards, methodology and CASE tools used will be evaluated and recommendations made.

SD-10: Verify that design requirements can be traced back to system requirements and high level design.

SD-11: Verify that all design products are under configuration control and formally approved before coding begins.

Detailed Design (SD-6 through SD-11)

PCG will perform all activities outlined in RFP Section 3.6.3.9, SD-6 through SD-11.

The Detailed Design Assessment will verify the system design follows the intent and requirements of the project. The steps in this activity closely mirror the activities for the high-level design evaluation. PCG follows an industry and best practices approach to

evaluation, taking into account both the initial development and the long-term maintainability of the system. Steps associated with this activity include:

- ***Review the vendor's proposed detailed design with an emphasis on the viability of the design, system efficiency, scalability, maintainability, and completeness;***
- ***Review the vendor's design deliverables for adherence to the project's requirements, defined practices and methodologies as well as industry and best practices for design;***
- ***Review the vendor's design standards, process and practices and tools to verify the most effective coverage of design topics, and the most effective use of resources and time;***
- ***Review the vendor's design deliverables for adherence to project standards, high-level design requirements, architecture requirements and alignment with original technical proposal;***
- ***Review the vendor's tools and corresponding outputs for completeness, adherence to stated methodologies and appropriateness of tool choice and use;***
- ***Validate that all design output products have been classified as configurable items and are accurately tracked per the Configuration Management Plan; and***
- ***Verify the Requirements Traceability Matrix is correctly populated, updated regularly, and traceable back to the source requirements.***

Job Control

SD-12: Perform an evaluation and make recommendations on existing job control and on the process for designing job control.

SD-13: Evaluate the system's division between batch and on-line processing with regard to system performance and data integrity.

SD-14: Evaluate batch jobs for appropriate scheduling, timing and internal and external dependencies.

SD-15: Evaluate the appropriate use of OS scheduling software.

SD-16: Verify that job control language scripts are under an appropriate level of configuration control.

Job Control (SD-12 through SD-16)

PCG will perform all activities outlined in RFP Section 3.6.3.9, SD-12 through SD-16.

The Job Control Assessment will verify the job control system and structure is adequate to support service level agreements and other requirements. Steps associated with this activity include:

- ***Review and evaluate job control processes including job structures, job control, dependencies between jobs, and monitoring, troubleshooting, escalation, and restarts of job failures;***
- ***Review and evaluate dependencies and potential conflicts between batch jobs (including evaluation of batch jobs for appropriate scheduling, timing and internal and external dependencies) and on-line processing;***

- ***Evaluate appropriate use of OS scheduling software;***
- ***Review and evaluate the products used to control job scheduling and the design and capability of the scheduling software to meet the potentially complex requirements of the system; and***
- ***Verify that the process for managing job control language scripts are included in the Configuration Management Plan and are managed in the configuration management tool selected by the project.***

Code

SD-17: Evaluate and make recommendations on the standards and process currently in place for code development.

SD-18: Evaluate the existing code base for portability and maintainability, taking software metrics including but not limited to modularity, complexity and source and object size.

SD-19: Evaluate code documentation for quality, completeness (including maintenance history) and accessibility.

SD-20: Evaluate the coding standards and guidelines and the project's compliance with these standards and guidelines. This evaluation will include, but is not limited to, structure, documentation, modularity, naming conventions and format.

SD-21: Verify that developed code is kept under appropriate configuration control and is easily accessible by developers.

SD-22: Evaluate the project's use of software metrics in management and quality assurance.

Code (SD-17 through SD-22)

PCG will perform all activities outlined in RFP Section 3.6.3.9, SD-17 through SD-22.

The Code Assessment will verify the system source code developed and provided meets the associated requirements and standards needed to implement the system successfully. Steps associated with this activity include:

- ***Review coding standards used during the code development process of the project against industry best practices and project requirements to include, but not limited to, structure, documentation, modularity, naming conventions and format;***
- ***Evaluate the existing code base with attention to the areas of portability, maintainability, modularity, and adherence to project standards;***
- ***Evaluate the documentation, both in-line and hard/soft-copy, of the code to assure that there is sufficient quality, completeness, and accessibility for future maintenance of the system;***
- ***Verify the configuration management of the code for the various environments and verify that the developers have easy access to the correct and most current code base; and***
- ***Evaluate that the project has chosen and is using the proper software metrics with regard to management and quality assurance.***

Unit Test

SD-23: Evaluate the plans, requirements, environment, tools, and procedures used for unit testing system modules.

SD-24: Evaluate the level of test automation, interactive testing and interactive debugging available in the test environment.

SD-25: Verify that an appropriate level of test coverage is achieved by the test process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented.

Unit Test (SD-23 through SD-25)

PCG will perform all activities outlined in RFP Section 3.6.3.9, SD-23 through SD-25.

The Unit Test Assessment will verify the development team is successful in Unit Test of the software under development. Steps associated with this activity include:

- ***Evaluate the proper plans, requirements, environment, tools, and procedures are in place and being used by the development team to properly Unit Test system modules;***
- ***Evaluate the level of automation, interactive testing, and debugging by the development team is sufficient in the test environment;***
- ***Verify that all code is Unit Tested by the development team, all test results are consistent and correct, the correct code has been tested, and that adequate documentation exists for Unit Testing; and***
- ***Verify that the process for managing unit test scripts are included in the Configuration Management Plan and are managed in the configuration management tool selected by the project.***

V.4.9 System and Acceptance Testing

3.6.3.10 System Integration Test

ST-1: Evaluate the plans, requirements, environment, tools, and procedures used for integration testing of system modules.

ST-2: Evaluate the level of automation and the availability of the system test environment.

ST-3: Verify that an appropriate level of test coverage is achieved by the test process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented, including formal logging of errors found in testing.

ST-4: Verify that the test organization has an appropriate level of independence from the development organization.

System Integration Test (ST-1 through ST-4)

PCG will perform all activities outlined in RFP Section 3.6.3.10, ST-1 through ST-4.

The PCG IV&V test analysts will perform an assessment of the implementation vendor's System Test Plan and results. It will include an evaluation of the document, its content, and the planned approach/methodology for conducting testing. It will also indicate the level of conformance to the applicable State and industry standards. Before the conclusion

of DD&I's System testing, PCG will provide an Independent System Test Evaluation Assessment. PCG will evaluate vendor testing to determine if the software satisfies the criteria established in the test plan. PCG's assessments will focus on the following:

- ***Evaluating the test plans, requirements, environments, tools and procedures used for integration testing;***
- ***Evaluating the level of automation and the availability of the system test environment;***
- ***Verifying that an appropriate level of test coverage is achieved by the test process, verify test results, the correct code configuration has been tested and that the tests are appropriately documented including logging of defects found during testing; and***
- ***Verifying that the test organization has an appropriate level of independence from the development organization.***

Ms. Donna Kurtz, *one of our key IV&V personnel, brings over 23 years' public sector experience and excels in providing IV&V services in the areas of testing, problem resolution, defect management and change management. Donna brings extensive CCSAS experience. She wrote and executed test scripts, identified and documented defects, provided testing results, and assessed all of the Vendor's test-related deliverables (e.g., plans, reports, results, etc.) in her IV&V testing roles.*

Pilot Test

ST-5: Evaluate the plans, requirements, environment, tools, and procedures for pilot testing the system.

ST-6: Verify that a sufficient number and type of case scenarios are used to ensure comprehensive but manageable testing and those tests are run in a realistic, real-time environment.

ST-7: Verify that test scripts are complete, with step-by-step procedures, required pre-existing events or triggers, and expected results.

ST-8: Verify that test results are verified, that the correct code configuration has been used, and that the tests runs are appropriately documented, including formal logging of errors found in testing.

ST-9: Verify that the test organization has an appropriate level of independence from the development organization.

Pilot Test (ST-5 through ST-9)

PCG will perform all activities outlined in RFP Section 3.6.3.10, ST-5 through ST-9.

PCG will perform an assessment of the System Test Plan regarding integration and pilot testing. Activities will include:

- ***Evaluation of testing documentation, its content, and the planned approach and methodology for conducting testing;***
- ***Conformance with applicable State and industry standards;***
- ***Evaluation of testing plans and procedures for compliance with industry standards and verification that the following entrance criteria is completed:***
    - ***All pilot test scenarios have been executed and passed;***
    - ***The Pilot Plan is approved by the project stakeholders;***

- ***The Training Plan has been finalized and is placed under configuration management. Training sessions are planned for the Pilot participants;***
- ***The Pilot database is loaded with appropriate live ("Day 1") data for targeted counties;***
- ***The designated software build version is placed in configuration management and identified as Initial Pilot build;***
- ***All reported defects have been satisfactorily addressed; and***
- ***All remaining defects have been prioritized and placed in a build schedule.***

- ***Verification that there is a sufficient number and type of case scenarios necessary for comprehensive testing; and***
- ***Verification that testing is being conducted in a realistic, real-time environment.***

Interface Testing

ST-10: Evaluate interface testing plans and procedures for compliance with industry standards.

Interface Testing (ST-10)

PCG will perform all activities outlined in RFP Section 3.6.3.10, ST-10.

PCG will perform an assessment of the DD&I's vendor's Interface Test Plan. It will include an evaluation of the document, its content, and the planned approach and methodology for conducting testing. It will also indicate the level of conformance to the applicable State and industry standards.

Acceptance and Turnover

ST-11: Verify that acceptance procedures and acceptance criteria for each product are defined, reviewed, and approved prior to test and the results of the test must be documented. Acceptance procedures must also address the process by which any software product that does not pass acceptance testing will be corrected.

ST-12: Verify that appropriate acceptance testing based on the defined acceptance criteria is performed satisfactorily before acceptance of software products.

ST-13: Verify that the acceptance test organization has an appropriate level of independence from the implementation vendor.

ST-14: Verify that training in using the contractor-supplied software is on-going throughout the development process, especially if the software is to be turned over to State staff for operation.

ST-15: Review and evaluate implementation plan.

Acceptance and Turnover (ST-11 through ST-15)

PCG will perform all activities outlined in RFP Section 3.6.3.10, ST-11 through ST-15.

Steps to accomplish these acceptance and turnover activities are:

- ***Verifying and validating that acceptance procedures and acceptance criteria for each product are defined, reviewed, and approved prior to test and the results of the test are documented;***
- ***Verifying that acceptance procedures address the process by which any software product that does not pass acceptance testing have been or will be corrected;***
- ***Verifying that appropriate acceptance testing based on the defined acceptance criteria is performed satisfactorily before acceptance of software products;***
- ***Verifying that the acceptance test organization has an appropriate level of independence from the subcontractor;***
- ***Verifying that training, using the contractor-supplied software is on-going throughout the development process and***
- ***Reviewing and evaluating the Implementation Plan to validate it includes all the activities required to plan and execute the transition to operations.***

V.4.10 Data Management Oversight

3.6.3.11 Data Conversion

DM-1: Evaluate the State's existing and proposed plans, procedures and software for data conversion.

DM-2: Verify that procedures are in place and are being followed to review the completed data for completeness and accuracy and to perform data clean-up as required.

DM-3: Determine conversion error rates and if the error rates are manageable.

DM-4: Make recommendations on making the conversion process more efficient and on maintaining the integrity of data during the conversion.

Data Conversion (DM-1 through DM-4)

PCG will perform all activities outlined in RFP Section 3.6.3.11, DM-1 through DM-4.

The Data Conversion assessment will be used to verify the data conversion plans, process, procedures and software and supporting tools are sufficient to meet the needs of the project. PCG's experience with CSE specific conversion activities (e.g., collections, financials, cases, historical records) will assist in identifying high risk areas of consideration. PCG's assessment will focus on the following:

- ***Evaluating the State's existing and proposed plans, procedures and software for data conversion;***
- ***Verifying that procedures are in place and are being followed to review the converted data for completeness and accuracy and to perform data clean-up as required;***
- ***Assist with identification of high risk conversion areas and determining conversion error rates and if the error rates are manageable;***
- ***Making recommendations on making the conversion process more efficient and on maintaining the integrity of data during the conversion.***

Mr. David Ruddy, *one of our senior child support subject matter experts, has a long history of supporting California's complicated transition from 58 county legacy systems to a single statewide system, CCSAS. During this time, Mr. Ruddy served as the Project Manager for three legacy data conversion and migration efforts. This required the complex translation, migration and reconciliation of complete financial transaction history – a first of its kind for California at that time. Mr. Ruddy is also experienced at maintaining and operating production child support systems, having served as Operations Manager for a 10-county child support system (KIDZ), as well as California's automated State/Federal data sharing interface (Interim Federal Case Registry).*

Database Design

DM-5: Evaluate new and existing database designs to determine if they meet existing and proposed system requirements.

DM-6: Recommend improvements to existing designs to improve data integrity and system performance.

DM-7: Evaluate the design for maintainability, scalability, refreshability, concurrence, normalization (where appropriate) and any other factors affecting performance and data integrity.

DM-8: Evaluate the project's process for administering the database, including backup, recovery, performance analysis and control of data item creation.

Database Design (DM-5 Through DM-8)

PCG will perform all activities outlined in RFP Section 3.6.3.11, DM-5 through DM-8.

The Database Design assessment will be used to evaluate the project's ability to design the database. PCG's assessment will focus on the following:

- ***Evaluating new and existing database designs to determine if they meet existing and proposed system requirements;***
- ***Recommending improvements to existing designs to improve data integrity and system performance;***
- ***Evaluating the design for maintainability, scalability, refresh ability, concurrence, normalization (where appropriate), and any other factors affecting performance and data integrity; and***
- ***Evaluating the project's process for administering the database, including backup, recovery, performance analysis, and control of data item creation.***

V.4.11 Operations Oversight

3.6.3.12 Operational Change Tracking

OO-1: Evaluate statewide system's change request and defect tracking processes.

OO-2: Evaluate implementation of the process activities and request volumes to determine if processes are effective and are being followed.

Operational Change Tracking (OO-1 through OO-2)

PCG will perform all activities outlined in RFP Section 3.6.3.12, OO-1 through OO-2.

Change management, or change control, is the process by which changes are made to a system. These may be in the form of system enhancements, modifications and/or defect corrections. An effective change control process ensures that all system changes are implemented in a controlled manner, following a pre-defined framework that mitigates the risk to the system.

PCG will review all change control processes, including how changes are identified, documented, assessed, approved, executed and implemented. This includes verification that all Replacement Project participants involved in change control are following documented and approved processes. This includes, but is not limited to, processes for:

- ***Documenting requirements;***
- ***Conducting business and technical analysis of proposed changes;***
- ***Assigning priority and scheduling;***
- ***Monitoring and reporting progress; and***
- ***Documenting test results and deployment readiness.***

Customer & User Operational Satisfaction

OO-3: Evaluate user satisfaction with the system to determine areas for improvement

Customer & User Operational Satisfaction (OO-3)

PCG will perform all activities outlined in RFP Section 3.6.3.12, OO-3.

PCG will review evaluate user satisfaction with system to determine areas for improvement. This may include a review of survey results conducted by the implementation vendor, work session documentation, test results and user feedback, training outcomes, etc. PCG will consider the information available, and whether satisfaction levels appear consistent with the phase of the project, the complexity of the functionality being reviewed, and factors key factors.

Operational Goals

OO-4: Evaluate impact of the system on program goals and performance standards.

Operational Goals (OO-4)

PCG will perform all activities outlined in RFP Section 3.6.3.12, OO-4.

PCG will evaluate the impact of the system on State goals and performance standards. Steps associated with this activity include:

- ***Verify the existing goals and performance standards;***
- ***Verify that the implementation vendor has identified any performance gaps;***
- ***Verify that the system will be configured to assure that the goals and performance standards will continue to be met; and***
- ***Verify that additional goals / performance standards have been considered based on the enhanced functionality to be provided by the new system.***

Operational Documentation

OO-5: Evaluate operational plans and processes.

Operational Documentation (OO-5)

PCG will perform all activities outlined in RFP Section 3.6.3.12, OO-5.

PCG utilizes the ITIL® framework as a point of reference for service management (operational) process reviews. ITIL® is used because it is commonly accepted as best practice, is well documented and provides a referenceable baseline of processes that have been demonstrated to work in a broad segment of industry (public sector, private sector and academia).

PCG will evaluate day-to-day operations, procedures and related documentation to verify adherence to required processes, both initially and long-term. Steps associated with this activity include:

- ***Verify that operational plans and processes have been properly documented;***
- ***Verify that documented plans, processes and protocols are being followed;***
- ***Identify and validate roles and responsibilities;***
- ***Verify conformity of each deliverable to overall quality and industry standards;***
- ***Review the process for maintaining:***
    - ***Licensing agreements***
    - ***Maintenance agreements***
    - ***Expected equipment and software maintenance needs***
    - ***Planned system growth rates/capacity per central equipment needs***
- ***Review the meeting and tracking of performance objectives;***
- ***Verify and validate completeness and timeliness of status reports;***

- ***Review operational communication plans including escalation processes and procedures;***
- ***Verify resources are appropriately assigned to tasks and current resources are not over allocated;***
- ***Identify any limitations, restrictions or resource constraints;***
- ***Verify and validate that discrepancies are being tracked; and***
- ***Verify that corrective measures are being taken in instances where plans and processes are not being followed.***

Operational Processes and Activity

OO-6: Evaluate implementation of the process activities including backup, disaster recovery and day-to-day operations to verify the processes are being followed.

Operational Processes and Activity (OO-6)

PCG will perform all activities outlined in RFP Section 3.6.3.12, OO-6.

The IV&V Team will evaluate operational recovery plans and processes including backup, disaster and recovery plans in the following areas:

- ***Completeness, comprehension and detail;***
- ***Recovery resource requirements;***
- ***Recovery operations, responsibilities, and procedures;***
- ***Backup scheduling and procedures;***
- ***Offsite storage;***
- ***Emergency responsiveness; and***
- ***Backup and recovery reporting.***

A critical part of handling any serious emergency situation is in the management of the Disaster Recovery Phase. By definition, the Disaster Recovery Phase is likely to involve, to a significant degree, external emergency services. The priority during this phase is the safety and well-being of the employees and other involved persons, the minimization of the emergency itself, the removal or minimization of the threat of further injury or damage and the re-establishment of external services. IV&V will review in detail the following procedures to verify they provide the flexibility to respond to disasters of various magnitudes including the most severe disaster, destruction of the Production Data facility.

The following should be documented procedures that would be utilized during the Disaster and Recovery Phase:

- ***Identification of Potential Disaster Status;***
- ***Involvement of Emergency Services;***
- ***Assessing Potential Business Impact of the Emergency;***
- ***Mobilizing the Disaster Recovery team;***

- ***Notification to Management and Key Employees;***
- ***Maintain Event Log during Disaster Recovery Phase;***
- ***Disaster Recovery Phase Report;***
- ***Server Power and Network Connectivity;***
- ***Implement Fail Over from Server or Site;***
- ***Restore Server from Backup; and***
- ***Equipment Replacement.***

The Business Recovery Phase will either follow directly from the Disaster Recovery Phase or will be directly initiated after a serious emergency incident affecting normal business operations that does not need a Disaster Recovery Phase. The Business Recovery Phase involves the restoration of normal business operations after an unexpected event that has disrupted all or part of the business process. IV&V will verify that the necessary Business Recovery procedures will be detailed within the Disaster Recovery Plan. These include:

- ***Managing the Business Recovery Phase;***
- ***Mobilizing the Business Recovery team;***
- ***Assessing extent of damage and business impact;***
- ***Monitoring progress;***
- ***Handing Business Operations Back to Regular Management;***
- ***Preparing Business Recovery Phase Report;***
- ***Business Recovery Activities;***
- ***Facilities electric power restoration;***
- ***Communications systems restoration; and***
- ***Implement alternate business activities or work-a-rounds.***

VI. COMPANY BACKGROUND AND REFERENCES

VI.1 Vendor Information

4.1.1 Vendors shall provide a company profile in the table format below.

Question	***Response***
Company name:	***Public Consulting Group, Inc.***
Ownership (sole proprietor, partnership, etc.):	***Corporation***
State of incorporation:	***Commonwealth of Massachusetts***
Date of incorporation:	***Dec. 4, 1986***
# of years in business:	***31***
List of top officers:	***William Mosakowski, President*** ***Tony Brown, Vice President*** ***Stephen Skinner, Principal*** ***John J. Shaughnessy Director*** ***Kathleen Fallon, Director*** ***Grant A. Blair, Director*** ***Daniel T. Heaney, Treasurer***
Location of company headquarters:	***Sacramento, California*** ***Boston, Massachusetts***
Location(s) of the office that shall provide the services described in this RFP:	***2150 River Plaza Drive, Ste. 380*** ***Sacramento, CA 95833***
Number of employees locally with the expertise to support the requirements identified in this RFP:	***PCG Technology Consulting has 115 technology staff, with more than 60 consultants based in Sacramento CA. In addition, we have 74 staff who are certified IV&V practitioners performing IV&V services nationally.***
Number of employees nationally with the expertise to support the requirements in this RFP:	***PCG Technology Consulting has 74 technology staff who are certified IV&V practitioners.***
Location(s) from which employees shall be assigned for this project:	***2150 River Plaza Drive, Ste. 380*** ***Sacramento, CA 95833***

4.1.2 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.

PCG is licensed to do business in the State of Nevada.

4.1.3 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:	***Nv20021466314***
Legal Entity Name:	***Public Consulting Group, Inc.***

Is "Legal Entity Name" the same name as vendor is doing business as?

Yes	***Yes***	No	

4.1.4 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.

PCG has read and understood

4.1.5 Has the vendor ever been engaged under contract by any State of Nevada agency?

Yes	***Yes***	No	

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.

Question	***Response***
State agency contact name:	***Gloria Macdonald***
Dates when services were performed:	***May 2010 – June 2012***
Type of duties performed:	***Health Benefit Exchange Planning Support***
Total dollar value of the contract:	***$942,709***

Question	***Response***
Name of State agency:	***DHHS Division of Welfare and Supportive Services***

State agency contact name:	***Dave Stewart***
Dates when services were performed:	***August 2012 – March 2015***
Type of duties performed:	***Provide IV&V services on the Health Care Reform Eligibility Engine Project***
Total dollar value of the contract:	***$2,919,168***

Question	***Response***
Name of State agency:	***DHHS Mental Health and Developmental Services Division***
State agency contact name:	***Rachel Richards***
Dates when services were performed:	***July 2011 – July 2015***
Type of duties performed:	***Provide cost allocation plan development, maintenance, and reporting services to the Division.***
Total dollar value of the contract:	***$9,900***

Question	***Response***
Name of State agency:	***DHHS Aging and Disability Services Division***
State agency contact name:	***Kim Huys***
Dates when services were performed:	***July 2011 -- present***
Type of duties performed:	***Provide cost allocation plan development, maintenance, and reporting services to the Division.***
Total dollar value of the contract:	***$9,900***

Question	***Response***
Name of State agency:	***DHHS Health Care Financing and Policy Division***
State agency contact name:	***Lynn Carrigan***
Dates when services were performed:	***April 2009 – present***
Type of duties performed:	***Reviewed and revised the Division's cost allocation plan, developed PCG's AlloCAP™ database, reviewed time tracking procedures, supported DHCFP in CAP Amendments. Provided consulting services around the impact of federal health care reform on the Nevada state Medicaid population and program.***

Total dollar value of the contract:	***$2,197,709***

Question	***Response***
Name of State agency:	***University of Nevada Medical School, Mojave Adult/Child Family Services***
State agency contact name:	***Jim Parcells***
Dates when services were performed:	***August 2010 – present***
Type of duties performed:	***Targeted Case Management (TCM) Time Study; cost allocation support.***
Total dollar value of the contract:	***$314,620***

Question	***Response***
Name of State agency:	***DHHS Division of Child and Family Services***
State agency contact name:	***Priscilla Colegrove***
Dates when services were performed:	***July 2011 - Present***
Type of duties performed:	***Provide cost allocation plan development, maintenance, and reporting services to the Division.***
Total dollar value of the contract:	***$9,900***

Question	***Response***
Name of State agency:	***Department of Education***
State agency contact name:	***Amanda Pinter***
Dates when services were performed:	***September 2014***
Type of duties performed:	***Provide training for Department staff.***
Total dollar value of the contract:	***$2,000***

Question	***Response***
Name of State agency:	***Silver State Health Insurance Exchange***
State agency contact name:	***Djana Qaja***
Dates when services were performed:	***November 2012 – June 2015***
Type of duties performed:	***IV&V services for the design, development and implementation of the Exchange's IT solution.***
Total dollar value of the contract:	***$1,921,850***

Question	***Response***
Name of State agency:	***Department of Health Care Financing and Policy***
State agency contact name:	***Laurie Squartsoff***
Dates when services were performed:	***July 2014 – June 2016***
Type of duties performed:	***Provide cost allocation plan development, maintenance, and reporting services to the Division.***
Total dollar value of the contract:	***$20,000***

4.1.6 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?

No.

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.

Not Applicable.

4.1.7 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?

Yes		No	***X***

4.1.8 Vendors shall review and provide if awarded a contract the insurance requirements as specified in Attachment D, Insurance Schedule for RFP 3475.

PCG has reviewed and will provide the insurance requirements upon contract award.

4.1.9 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.

PCG IV&V Experience

PCG is a management and technology consulting firm that specializes in IV&V services. PCG is the only IV&V provider in the nation that offers an IV&V Training and Certification Program to our practitioners, and we are recognized across the nation as a leading provider of IV&V services to state agencies on large-scale information technology projects. In fact, more than 60% of our Technology Consulting division's revenues derive from providing IV&V services to entities in the public sector – which includes Nevada DWSS.

Below is a partial list of our most recent IV&V engagements.

Table VI-1: PCG's Recent IV&V Engagements

#	Project Name	Customer Name
1	Integrated Eligibility Engine Project	Nevada Department of Health and Human Services
2	Health Insurance Exchange IV&V Services	Nevada Silver State Health Insurance
3	Automated Child Support Enforcement System (ACSES) Migration Project	Colorado Office of IT
4	Electronic Health Records IV&V Services	Colorado Department of Corrections
5	Integrated Parks and Wildlife System IV&V Services	Colorado Department of Natural Resources
6	Workers Compensation Mainframe Migration and Modernization IV&V Services	Colorado Department of Labor and Employment
7	Port of Entry Business Systems Replacement IV&V Services	Colorado Department of Public Safety
8	Colorado Financial Reporting System Modernization Project IV&V Services	Colorado Office of IT
9	Michigan Child Support Enforcement System IV&V Services	Michigan Department of Health and Human Services
10	MMIS Cloud Enablement & Migration Project IV&V Services	Michigan Department of Health and Human Services
11	Bridges Eligibility System M&O Assessment/IV&V Services	Michigan Department of Health and Human Services

#	Project Name	Customer Name
12	Statewide Automated Child Welfare Information System (SACWIS) Assessment/IV&V Services	Michigan Department of Health and Human Services
13	Kauhale Online Eligibility Assistance (KOLEA) Solution IV&V Services	Hawaii Department of Human Services
14	Behavioral Health Case Management Solution IV&V Services	Hawaii Department of Health Services
16	Medicaid Eligibility Modernization Project IV&V Services	Delaware Department of Health and Social Services
17	Medicaid Enterprise System (DMES) Project IV&V Services	Delaware Department of Health and Social Services
18	Medicaid Enterprise Modernization Project IV&V Services	Louisiana Department of Health and Hospitals
19	Eligibility and Enrollment System IV&V Services	Alabama Department of Health Services
20	Medicaid Integrated Eligibility System IV&V Services	Iowa Department of Human Services
21	Affordable Care Act Implementation Project IV&V Services	Montana Department of Public Health and Human Services
22	MMIS Replacement Project IV&V Services	California Department of Health Care Services
23	Child Welfare Services New System CWS-NS IV&V Services	California Department of Social Services
24	Personal Duress Alarm System (PDAS) IV&V Services	California Department of State Hospitals
25	California Financial Information System (FI$Cal) IV&V Services	California Office of the Chief Information Officer
26	21st Century Project IV&V Services	California Office of the Chief Information Officer
27	Automated Collection Enhancement System (ACES) IV&V Services	California Employment Development Department
28	Unemployment Insurance Modernization (UIMOD) Project	California Employment Development Department
29	Continued Claims Redesign (CCR) Project	California Employment Development Department
30	Case Management Information and Payrolling System (CMIPS) II Project	California Department of Social Services
31	Correctional Health Electronic Health Records Project IV&V Services	Georgia Technology Authority / Department of Corrections

#	Project Name	Customer Name
32	Healthcare Eligibility IV&V Services	Georgia Technology Authority / Department of Community Health
33	PARCC Consortium IV&V Services	The Partnership for Assessment of Readiness for College and Careers (PARCC)
34	Eligibility Service and ACES Remediation (ESAR) Project IV&V Services	Washington Department of Social and Health Services
35	Health Benefit Exchange IV&V Services IV&V Services	Washington Health Benefit Exchange
36	Background Check System (BCS) Project IV&V Services	Washington Department of Social and Health Services
37	Toll Division Customer Service Center Back Office System IV&V Services	Washington Department of Transportation

Because our firm has been dedicated to serving the public sector for over 30 years, our mission is to help states implement IT solutions to meet federal and state requirements that support family-first programs such as CSE. We help our clients ensure children have the financial and medical support of both their parents, foster responsible behavior towards children, and reduce welfare costs. In essence, by helping states implement modernized IT solutions, we help to make is as easy as possible for children to have the financial support of both parents as they grow up.

PCG Child Support Experience Details

PCG's Technology Consulting (formerly Eclipse Solutions, Inc.) was formed in 1996 and was focused on providing technology support services performed multiple child support services to California as it transitioned from its 58 County distributed child support model (administered by each County's District Attorney's office) to a statewide integrated child support system (administered by the California Department of Child Support Services).

During the years that followed, our staff supported all aspects and phases of California CSE system transition (e.g., filing, case initiation, locate, parental establishment, order processing, enforcement, collections, interfaces/integration, Federal/state reporting), This included transition planning and management, data conversion, and production system maintenance and operations support.

Most importantly, PCG's has a long and successful history providing support for State and county agencies transitioning to Nevada's chosen transfer system - the California Child Support Automated System, Child Support Enforcement (CCSAS/CSE).

One project of particular note was the California CSE Consortia Project Lead (CPL) Project. On this project, we provided 6 skilled and experienced managers to the State of California. These managers were directly responsible for actively managing all aspects of the transition from the disparate county systems to an interim solution, and then to the CCSAS single statewide system.

As part of their leadership responsibilities, the our CPL managers were responsible for:

- ***Design, development, testing and deployment of interfaces to support the interim solution***

- ***Legacy data conversion***
- ***Facilitating negotiations between the counties and the System Integrator developing the new system***
- ***Statewide deployment of CCSAS hardware, software, and network***
- ***Development, deployment and integration of the statewide IVR and call routing solution in 58 counties and the state centralized call center; and***
- ***Supported migration/conversion of county data leading up to, and as a part of the CCSAS project.***
- ***Please note that two of our former CPL managers, Mr. Ruben Ramos and Mr. Jonathan Taylor have been included in our NV CSE Replacement Project I V&V proposal. Mr. Ramos will serve as a Key Staff member of the IV&V Team, and Mr. Taylor will provide support as a CSE SME.***

In addition to the CPL project, PCG staff also provided critical business analysis and support California's transition to CCSAS. This included:

- ***Providing task leadership and support to DCSS' Financial Accounting and Child Support Enforcement staff for Business Process Analysis and Re-Engineering activities associated with the implementation of the CCSAS. This included examining the existing functions and processes and providing a strategic view of where DCSS needed to be in the future within financial accounting and reporting as DCSS moves forward with the State's Child Support Program.***
- ***Providing data verification support and provided guidelines, bulletins, user guides, and alerts instructing users how to perform Child Support Enforcement business within the Statewide Systems. This required extensive knowledge of the legacy systems as well as the CCSAS processes for problem and issue tracking, management and reporting.***
- ***Analyzed modifications to the Child Support Enforcement (CSE) system to implement the federal Deficit Reduction Act (FDRA). PCG's extensive knowledge and understanding of the CSE system allowed the team to more quickly and thoroughly complete the analysis of the system, and verify no strengths, weaknesses or opportunities were missed.***
- ***Developed user guides, provided training on the new system, and researched systems issues. When production defects were identified they were logged and "work-arounds" were subsequently developed to ensure the LCSA staff could complete the required case management and financial management necessary to support program participants.***
- ***Provided operational support and issue resolution for a wide variety of case management and financial management problems and design considerations.***

Please note that that one of our staff who supported the Business Analysis and Re-Engineering Project, Ms. Maribeth Pollard, is one of the SMEs on our Replacement Project IV&V team.

PCG also provided technical support services for multiple CSE systems in California. Specifically, our staff:

- ***Managed operations of the KIDZ production child support system for 10 local child support agencies (LCSAs) in California. The KIDZ application supported case management and financial transactions for 1,450 end users managing a combined caseload of 241,000 cases. On this project, our staff for all aspects of daily operations, which included database management; network administration; testing; help desk and user support; training; and data analysis and reporting. In addition, the operations team provided onsite support for individuals counties during their conversion to KIDZ from their legacy applications, as well as their conversion from KIDZ to the CASES system (as part of the overall CCSAS migration). The operations team was ultimately responsible for decommissioning the KIDZ system, including facilities, hardware, and software.***

Please note that our KIDZ Production Operations Manager, Mr. David Ruddy, is one of the SMEs on our Replacement Project IV&V team.

- ***Managed, maintained, and decommissioned the Interim Federal Case Registry (IFCR) System. IFCR linked 58 local child support agencies (LCSAs) in California with a national database of Title IV-D case information, and supported California's efforts to enforce child support orders on non-custodial parents located outside California. The IFCR system processed more than 60 million child support records annually. The IFCR was responsible for maintaining the link between California's LCSAs, the State, and federal Child Support data repositories during this time.***

Please note that our IFCR Maintenance and Operations Manager, Mr. David Ruddy, is one of the SMEs on our Replacement Project IV&V team.

- ***Provided project management, process mapping, data mapping, business analysis, application development, testing, and onsite transition support on Orange, Yolo and Yuba County Automated Child Support Data Mapping and Extraction Projects. Supported data clean-up efforts through design, development, testing, implementation, operation, and maintenance of programs to cleanse incorrect data or supply missing data. These projects resulted in the successful migration of more than 125,000 active child support cases, 36 million records and $1.2 billion in financial accounts across the three county systems. In all instances, more than 99+% of all cases were successfully converted to the target systems.***

Please note that the former County Conversion Manager, Mr. David Ruddy, and Lead Conversion Analyst, Ms. Maribeth Pollard, are SMEs on our Replacement Project IV&V team.

4.1.10 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.

Since 1996, PCG has provided IV&V services for more than 100 design, development and implementation (DDI) projects across the US to support our clients as they implement complex IT solutions to respond to changing environments and new legislative requirements.

As active members of various organizations that develop and maintain IT standards and best practices, PCG endorses their use whenever practical. For this project, PCG will leverage the federal OCSE's Automated System for Child Support Enforcement: A Guide for States, as well other industry standards from PMI, IEEE, Software Engineering Institute (SEI), CMMI, ITIL®, National Institute of Standards and Technology (NIST), Control Objectives for Information and related Technology (COBIT), and the International Organization for Standardization (ISO) standards.

The following figure shows where we have provided IV&V services to our clients across the nation.

"The body of worked performed by PCG TC involved working closely with the State to plan and procure a new integrated eligibility system, and then to provide technical oversight of the developed system to ensure it was successful. PCG TC has completed all of their engagements on-time, on-budget and with successful results. I would highly recommend PCG TC for all covered activities."

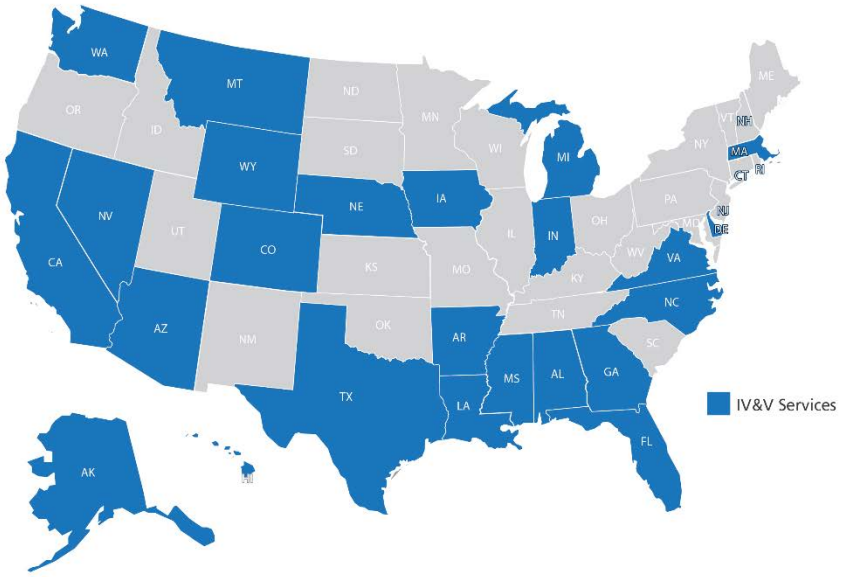


Figure VI-1: PCG's National Project List

4.1.11 Financial information and documentation to be included in accordance with Section 11.5, Part III – Confidential Financial Information.

4.1.11.1 Dun and Bradstreet Number
4.1.11.2 Federal Tax Identification Number
4.1.11.3 The last two (2) years and current year interim:

A. Profit and Loss Statement
B. Balance Statement

PCG has provided the required financial information in the appropriate proposal version.

VI.2 Subcontractor Information

4.2.1 Does this proposal include the use of subcontractors?

Yes		No	***No***

VI.3 Business References

4.3.1 Vendors should provide a minimum of three (3) business references from similar projects performed for private, state and/or large local government clients within the last three (3) years.

4.3.2 Business references shall show a proven ability of line items 4.3.2.1 – 4.3.2.16

4.3.3 Vendors shall submit Attachment E, Reference Questionnaire to their business references.

PCG has sought four (4) business references that demonstrate our ability to successfully support the Replacement Project. These include:

- ***Colorado Division of Child Support Enforcement - IV&V Services for the Automated Child Support Enforcement System (ACSES) Migration Project***
- ***Nevada Silver State Health Insurance Exchange - IV&V Services for the Business Operations Solution Projectw***
- ***Delaware Department of Health and Social Services - IV&V Services for HHS Systems Replacement Projects***
- ***Michigan Department of Health and Human Services - IV&V Services for Child Support Enforcement System (MiCSES) Maintenance and Operations (and other IV&V engagements)***

PCG's references submitted Business Reference Questionnaires directly to the State of Nevada, Purchasing Division, as required by the RFP.

"PCG provided IV&V services on our project to migrate our legacy Child Support Enforcement System to a new platform. The work completed by PCG's team met all of the requirements of the IV&V scope of work and was performed on-time, on-budget, and in a supportive manner. PCG evaluated the vendor's work to manage requirements, execute testing, and prepare/deliver training. The impact of the migrated system to the legacy stakeholders was also evaluated by PCG during the course of the project. PCG's deliverables include bi-monthly assessment reports as well as checklists defining entry and exit criteria for each testing phase."

Craig Goellner, Colorado Dept. of Human Services, Division of Child Support Services

4.3.4 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.

PCG has read and understood that it is our responsibility to ensure that the completed forms are received by the Purchasing Division on or before the deadline specified in the RFP timeline.

4.3.5 The State reserves the right to contact and verify any and all references listed regarding the quality and degree of satisfaction for such performance.

PCG has read and understands that the State has the right to contact and verify our professional references.

VI.4 Staff Skills and Experience Required

VI.4.1 Project Manager Qualifications

4.4.1 Project Manager Qualifications

The Project Manager assigned by the awarded vendor to the engagement shall have:

4.4.1.1 A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector;

4.4.1.2 A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;

4.4.1.3 A minimum of two (2) years of experience with systems analysis and design;

4.4.1.4 A minimum of two (2) years of experience with systems development and implementation;

4.4.1.5 Completed at least one (1) project within the past three (3) years that involved designing business processes and procedures and developing new systems to support the new business processes; and

4.4.1.6 Completed at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders.

PCG's IV&V Project Manager will be Ms. Pauline Palmer. As a Key Staff position, Ms. Palmer meets or exceed all Project Manager qualification requirements.

Ms. Palmer is a Certified Project Manager with over 20 years' experience managing highly complex projects from conception to implementation. This includes expertise in project management, process mapping, application and system requirements definition, and system development lifecycles - from "cradle to grave." Ms. Palmer has recent and relevant experience as an IV&V Project Manager. This includes serving as an IV&V Project Manager for a recent project with Nevada DWSS and the Nevada Healthcare Exchange. Ms. Palmer also served as the IV&V Project Manager for Guam, where she provided planning support for their Child Support Enforcement system. Ms. Palmer has worked multiple projects with DWSS including developing the RFP to acquire the Nevada Healthcare Exchange System Integrator provided solution, lead the team that developed the Health Care Reform Eligibility Engine Project RFP, and assisted the Exchange to develop an Request for Proposal to acquire a marketing vendor.

Please see Section VII (Proposed Staff Resumes) for detailed PCG Key Staff and support staff resumes.

Please see Appendix, IX.1 (Key Staff Qualifications Matrix) for additional information about our proposed IV&V Team meets or exceeds all requirements for this project.

VI.4.2 Individual Verification Services Team Member Qualifications

4.4.2 Individual Verification Services Team Member Qualifications

4.4.2.1 The IV&V Team Member for Verification Services assigned by the awarded vendor must have significant experience with industry standard and best practices regarding quality, quality assurance, and quality control principles and techniques:

4.4.2.2 A minimum of two (2) years of IV&V experience on projects involving the implementation of new business processes and procedures and new automated systems to support the new business processes;

4.4.2.3 A minimum of two (2) years of IV&V experience on projects relating to the implementation of secure Internet applications;

4.4.2.4 Completed at least one (1) project within the past three (3) years that involved the receipt, installation, operation and maintenance of computer equipment and software for a Child Support Enforcement or similar large systems;

4.4.2.5 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;

4.4.2.6 Completed at least one (1) project within the past three (3) years that assessed training plans involving the development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems;

4.4.2.7 A minimum of two (2) years of IV&V experience related to system and user acceptance tests utilizing automated testing tools for a similar sized project;

4.4.2.8 Completed at least one (1) project within the past three (3) years that involved determining the readiness of the system production;

4.4.2.9 Broad experience with technical writing;

4.4.2.10 Demonstrated knowledge of Title IV, Part D of the Social Security Act;

4.4.2.11 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009;

4.4.2.12 Completed at least (1) project within the past three (3) years that involved determining the readiness of the system production;

4.4.2.13 A minimum of five (5) years of experience leading data cleansing and conversion for a similar sized project;

4.4.2.14 A minimum of four (4) years of experience conducting system and user acceptance tests for a similar sized project;

4.4.2.15 Demonstrated knowledge of Title IV, Part D of the Social Security Act; and

4.4.2.16 Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.

PCG is proposing Ms. Laurie Thornton as PCG's Engagement Manager, and Mr. Ruben Ramos, Ms. May Fung, and Ms. Donna Kurtz, as IV&V Analysts. As Key Personnel, each project team member meets or exceed all Replacement Project requirements.

As a result, our proposed Key Personnel IV&V Project Team brings the following to the replacement project:

- ***Direct NOMADS Experience – The Team understands Nevada's system that provides functionality to support its Child Support Program and DWSS' technical environment.***
- ***Direct CCSAS Experience – The Team knows California's Child Support Automated System and legacy transition processes, and has knowledge of the SOA***

infrastructure/framework and industry and public sector (federal, state, DHS) requirements.

- ***Extensive IV&V Experience – The Team has supported large IV&V systems engagements, similar in size to Replacement Project, across multiple states.***
- ***Proven Collaborative Abilities – The Team has a proven ability to work with implementation vendors and other project entities (e.g., Project Management Offices, Quality Assurance staff, federal regulators) for large, complex system development projects.***

In addition, PCG has included three additional teams that will work with Key Personnel to provide subject matter expertise and support in three critical areas. These include:

- ***CCSAS & Legacy Transition – provides CCSAS system and transition experience, federal OCSE knowledge processes and policy. This team has extensive experience supporting California's transition to CCSAS.***
- ***NOMADS & DWSS – provides expertise in Nevada's eligibility system, NOMADS, and DHHS specific programs and policies.***
- ***Technical and Architecture Advisors – provides expertise in technical architecture, system development, system performance, security; and hardware / software installation - with a specific focus on both legacy and future technologies relevant to the Replacement Project.***

The diagram below shows the organizational structure for our proposed PCG IV&V Team:

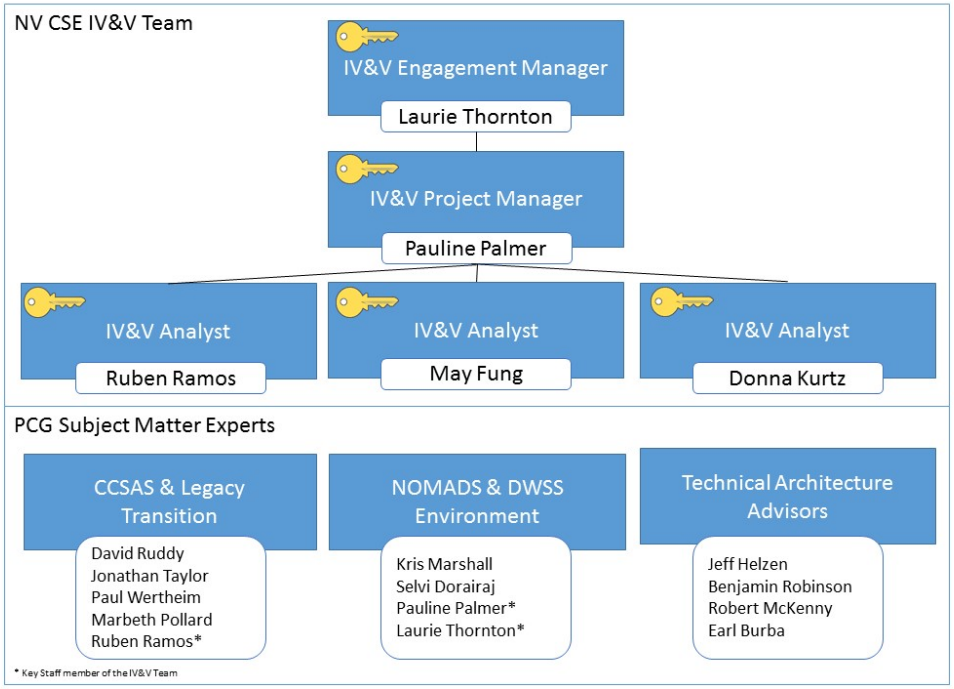


Figure VI-2: PCG's Project Organization Chart

PCG Subject Matter Experts

CCSAS & Legacy Transition

David Ruddy – Legacy data conversion; system maintenance and operations; county transition support

Jonathan Taylor – Transition leadership; federal policy; vendor management

Maribeth Pollard – Legacy data conversion; business process improvement; financial analysis; county transition support

Paul Wertheim – CCSAS application design and functionality

Ruben Ramos – Transition leadership; federal policy; vendor management

PCG Subject Matter Experts

NOMADS & DWSS Environment

Selvi - Testing, requirements management, federal certification support

Kris - Requirements management, training, knowledge transfer, configuration management, system architecture, hardware and software

Laurie - Strategy, governance

Pauline - Project management, communication planning, quality assurance/control, risk management, change management, transition management

PCG Subject Matter Experts

Technical Architecture Advisors

Benjamin Robinson – Security; database design, performance and management

Earl Burba – System and acceptance testing

Jeff Hellzen – System design and architecture; application development; system performance

Robert McKenny – Technical Architecture

The sections below provide a high level overview of the unique skill sets of our IV&V Team's Key Personnel, as well as other support staff and SMEs that may be called upon to provide peer reviews, findings validation, and other specialized support as required (and approved by the State).

IV&V Team (Key Personnel)

The following are Key Personnel of the PCG IV&V Team:

- ***Laurie Thornton (Engagement Manager) – Ms. Thornton fills one of our Key Personnel positions and brings significant IV&V experience to your project. She has proven her leadership skills in this role at DWSS, as well as other major systems implementation projects in California, Hawaii, Delaware and Michigan. In all instances, she is responsible for overseeing the quality of PCG's deliverables as well as resourcing our engagements to ensure that PCG's services exceed client expectations. In addition to her IV&V experience, Ms. Thornton worked with Pauline Palmer and Ruben Ramos (see below) in Guam, bringing recent child support experience to your project.***
- ***Pauline Palmer (Project Manager) – Please see Section V.4.1 (Project Manager Qualifications) or a summary of Ms. Palmer's recent and relevant experience.***
- ***Ruben Ramos (IV&V Analyst) – Mr. Ramos is one of our Key Staff positions with extensive experience spanning over 18 years. As a member of our team, Mr. Ramos brings IV&V experience gained from multiple large IT system implementation projects. Mr. Ramos' program knowledge includes health and human services programs and related technology systems, including Child Support, Welfare and Medicaid eligibility and case management systems in California, Texas, Montana, Iowa, Arizona, Louisiana, Tennessee, and US Territories. He has experience with the CCSAS system having served as a Consortia Project Lead in support of California's efforts to develop a single statewide child support system. A former Texas Child Support Enforcement Officer himself, Mr. Ramos offers unique real-life program experience and an intimate understanding of the Child Support program as a whole and of the systematic functional and operational needs required to support it. His extensive experience is supported by strong written and verbal communication skills.***
- ***May Fung (IV&V Analyst) – Ms. Fung is another one of our Key Personnel positions, bringing thirty-two years of experience in software engineering lifecycle with consistently increasing responsibilities in requirements management, oversight, quality assurance, test management and program development and implementation. Her experience includes engagements for state agencies across the nation including California, Delaware, Michigan, and US Virgin Islands. She is currently serving as a Senior IV&V Consultant for the Michigan Department of Health and Human Services, responsible for performing IV&V deliverable reviews in the areas of requirements, design and testing.***

  Ms. Fung has 4 years of experience providing quality assurance expertise in the support of the California Child Support Automation System (CCSAS) Project. Her responsibilities included serving as a technical lead of the Quality Assurance team, reviewing requirements, design and testing of developed system, and advising FTB and DCSS on quality of system development life cycle activities. She reviewed the

interdependencies between all projects by examining the testing, risk management process, planning, resource utilization, and budgets and schedule management of each project and the effect each project had on the overall CCSAS portfolio.

- ***Donna Kurtz (IV&V Analyst) – Ms. Kurtz is a Consultant within PCG's Technology Consulting practice, specializing in project management, IV&V, quality assurance, and testing services. As a PCG Consultant, she has performed assessments and evaluations in the areas of Requirements Management, Change Management, Testing, Implementation, and Training. Prior to joining PCG's Technology Consulting practice, Ms. Kurtz had over 23 years of public sector experience as a state employee in various departments, including the California Department of Child Support Services (CA DCSS). During her 5 years at CA DCSS, she was a member of the California Child Support Automation System (CCSAS) Project. This project implemented a new secured internet application, which included a phase implementation that required coordination between the old and new system environments. Ms. Kurtz' roles included acting as lead in the Child Support Enforcement Network (CSENet) Interstate/International and Core Financial functional areas. She brings a strong child support background, with a demonstrated knowledge of Title IV, Part D of the Social Security Act the Automated Systems for Child Support Enforcement: A Guide for States 2009. She has experience in all phases of the system development life cycle including project management, research, analysis, problem resolution, testing, defect management, change management, design and development, testing, implementation, training, and closure. She has many years of experience working successfully with state's governmental staff and numerous system integrators on large-scale technology projects. Donna's strengths are in her organization, communication, coordination, team-building, and relationship skills. CCSAS & Legacy Transition Team***

The following are our CCSAS & Legacy Transition SMEs:

- ***David Ruddy – Mr. Ruddy is a PMI certified Project Management Professional (PMP) with 20 years of experience supporting public sector agencies. During his consulting career, Mr. Ruddy has been responsible for successfully delivering projects encompassing all aspects of project management, system requirements and design, business process engineering, systems development and testing, data conversion, and implementation support.***

  As a production maintenance / operations manager, Mr. Ruddy has managed large project teams and diverse stakeholder groups in fast paced, "mission critical" production environments. As operations manager for California's 13 county KIDZ Child Support System. Mr. Ruddy also managed the Interim Federal Case Registry (Child Support) in California. In both instances, Mr. Ruddy was responsible for managing business and technical system operations. This included system, database and network administration; hardware and software installation, management and decommissioning; interface management; call center; system and acceptance testing; training; and release management.

- ***Paul Wertheim – Mr. Wertheim is a trusted advisor and project manager providing IV&V and project management services for more than 10 IV&V projects. These projects were focused in the human services and workforce development work areas, and used a variety of reporting formats including monthly, quarterly, and***

semi-annual reports to federal oversight agencies such as CMS, ACF and USDOL. Mr. Wertheim is a certified Eclipse IV&V™ Professional who understands the value of combining IV&V checklists and standards with real-world experience to provide actionable recommendations to clients. In addition to extensive IV&V experience, Mr. Wertheim brings broad project management and delivery experience spanning multiple teams, locations, and industries in the public and private sectors. He has been involved with large, complex software projects exceeding $400M in investment and managed teams of 80+ people.

Mr. Wertheim helped develop the CCSAS system in California as a certified Accenture Technology Architect and has intimate knowledge of the technical architecture and technologies used in the solution. This includes expert knowledge of secure internet applications, conducting phased implementations, and executing automated testing as applied to child support enforcement systems. Mr. Wertheim's detailed knowledge of the CCSAS system will assist the NV CSE in assessing and prioritizing risks that may arise from transitioning the solution to Nevada. This includes understanding the decision-making process, detailed design context, and mitigating or limiting factors that went into the original CCSAS design, which will help Nevada avoid re-inventing the wheel or making similar mistakes.

- ***Maribeth Pollard – • Ms. Pollard brings over eighteen years' experience working on large data and information systems projects. Ms. Pollard has participated in all aspects of the system development life cycle (SDLC), in a wide range of technical, business, leadership and oversight positions. During this time, Ms. Pollard has accumulated more than fifteen years of experience working with California and Arizona health and human services agencies, including IV-A, IV-E, IV-D, and Child Care and Protective Services.***

  Ms. Pollard has over six years of extensive knowledge of the business and technical aspects of Child Support systems from her work with SACCS, ARS, CASES, KIDZ, IDB-R and CCSAS systems. Ms. Pollard has worked with initiate, locate, establishment, Enforcement, collections, reporting, conversion, interfaces/integration, testing, and implementation of child support systems. Her experience is rounded out with her extensive experience with the Arizona Welfare Technical Eligibility Systems (AZTECS) and its integration with Child Support.

  During her tenure of service with the State of Arizona, Ms. Pollard worked with the Family Investment Initiative (FII) project, which served as a conduit for the consumer to apply for multiple services, including Child Support. Through the FII Project, Ms. Pollard worked with Child Support interfaces and eligibility compliance as it relates to Title IV-A and IV-D coverage.

  Jonathon Taylor – Mr. Taylor brings over twenty years' IT management experience, which includes serving as a Senior Project Manager on our engagement with the California Department of Child Support to manage the transition from six Consortia child support applications to CCSAS, Nevada's chosen transfer solution. There, he provided project management, coordination, facilitation and communication of child support enforcement consortia and consortia systems to support DCSS objectives and integration with the CCSAS project. Mr. Taylor's responsibilities included the project management of a team that directed maintenance, operations,

and enhancement efforts, and provided leadership and governance over the Local Child Support Agency and consortia level conversion activities.

NOMADS and DWSS Environment Team

The following are our NOMADS and DWSS Environment SMEs:

- ***Kris Marshall – Ms. Marshall brings her experience on DWSS' HCR-EE project where she performed analyses to include: concept, design, test (oversight of system and user acceptance tests), installation—computer equipment and software (receipt, installation, operation, maintenance), system readiness, operation, and maintenance.***

  Ms. Marshall has over 13 years of experience with systems development and integration, successfully fulfilling numerous roles including: project manager, enterprise architect, technical architect, lead technical, business processes/procedures and implementations analyst, quality assurance manager (quality assurance/quality control), and as an independent project oversight consultant (IPOC). She has participated in the implementation of integrated solutions to modernize legacy systems (mainframe technology) through the development of n-tier based solutions (secured internet applications) built from leading-edge technologies.

- ***Selvi Dorairaj – Ms. Dorairaj has over 20 years of IT experience in both California and international agencies. She has worked in all phases of the system development lifecycle in both traditional and agile environments including Requirements, Business Analysis, Testing and Implementation, Independent Verification and Validation (IV&V), and Quality Assurance (QA). She has extensive experience in requirements elicitation and gap analysis, system design and development, testing and implementation activities, project management (using different Software Development Life Cycle (SDLC) methodologies), and healthcare and social services program knowledge. She has provided oversight on both customized and Commercial Off-The-Shelf (COTS) systems as well as legacy conversion projects and phased implementations.***

  Ms. Dorairaj has supported several PCG IV&V projects as the lead IV&V Technical Analyst for Requirements and Testing. In this role, she provided technical and testing expertise supporting requirements management and test planning, execution, and validation efforts at all test levels (including unit testing, system testing, user acceptance testing, and regression testing). As part of the IV&V team that supported DWSS' Health Care Reform Eligibility Engine (HCR-EE) Project, Ms. Dorairaj provided oversight over testing and has experience with NOMADS and the DWSS environment. Additionally, she has program knowledge of Medicaid, CHIP, SNAP and TANF. She played a key role in developing PCG's approach to CMS' IV&V testing requirements (including development of processes and checklists) and participated in IV&V attestation work for Wave Testing and End-to-End Testing for two state marketplace exchanges, including Nevada. Additionally, she performed independent test planning and execution efforts for CMS 834 testing and CMS Blueprint testing (State of Washington's Health Benefits Exchange). She also has extensive background with CMS processes including gate reviews. She works closely with her clients (state, vendors, and reporting entities) to provide timely

reviews and recommendations to help ensure that requirements are being met and verified.

Ms. Dorairaj is certified by the American Software Testing Qualifications Board in both traditional and agile testing and is also a certified Project Management Professional.

Technology Architecture Advisors

The following are our Technical Architecture Advisors:

- ***Jeff Hellzen – Mr. Hellzen is the Chief Technologist for Public Consulting Group, Inc. He performs project leadership and support roles for PCG government and private sector customers with specific emphasis on software development practices, architectural assessments, and technical reviews. As part of these design and architecture reviews, particular emphasis is put on the software development process and system design, as early detection of problems is the most cost effective way to reduce system errors and maximize system performance. Mr. Hellzen has over 26 years IT experience, including 16 years on state and federal government projects involving technical assessments and technical verification and validation of multi-year, multi-million dollar development projects. His experience also includes 10 years of technical management for a variety of private sector companies where he was responsible for all aspects of Information Technology (IT) and consulting on next generation software systems and industry standards.***
- ***Robert McKenney – Robert McKenney, a Director located in our Sacramento office, will serve as a Technical Architecture (TA) subject matter expert (SME) for this project. Mr. McKenney has over 16 years' experience leading business and technical architecture teams in both the public and private sectors. He has extensive experience in the design, development and implementation of advanced technologies and governance processes to meet customer, financial and competitive demands. His training as a Naval Nuclear Engineering Officer enables him to understand complex systems and interactions with tremendous attention to detail. His Master's degree in Business Finance from Johns Hopkins University gives him an uncommon insight and holistic understanding of performance-based business results when assessing IT investments and project portfolios. Mr. McKenney has over 10 years' experience in project management, oversight, and independent verification & validation (IV&V), applying his attention to detail, insight, and understanding to large-scale TA projects at public organizations. He specializes in analyzing functional and informational overlap and integration of COTS, MOTS, and custom systems, with a talent for rapidly identifying the root cause of issues and presenting actionable mitigations and recommendations to maximize business results. His broad range of experience makes him a well-rounded collaborator when working with executives/managers and/or system integration vendors to assess and verify a system is built correctly, as well as validating the system meets program operational and business needs.***
- ***Benjamin Robinson – Mr. Robinson, a Senior Consultant with Public Consulting Group's security team. Specializing in information security and data architecture, he has over 20 years' information technology experience. Benjamin is experienced***

providing technical assessments of architecture and design, conducing risk assessments, security assessments using security control standards including the NIST Special Publications 800 Series, information security policy and procedure audits, security testing including vulnerability assessments and penetration testing, and development of information security programs.

- ***Earl Burba – Mr. Burba, a resident of Denver, Colorado, has over 30 years of extensive experience in the science and information technology industry with expertise in systems design, requirements analysis, test management and oversight, independent verification and validation (IV&V), and quality assurance (QA) of large, complex, and multi-faceted systems and applications. Mr. Burba has experience in projects in all phases of the Software Development Lifecycle (SDLC) and all testing types (Unit, Functional, System, Integration, Performance/Stress/Load, User Acceptance, Pilot, and Regression). He has experience reviewing, assessing, and evaluating Test Plans to IEEE standards (IEEE 829.2008), evaluating requirements, environments, automated and manual tools, and procedures associated with Integration, Pilot and UAT testing. He has also lead and managed testing efforts and reported metrics regarding test coverage at a code and requirements level, pass/fail results from testing, and defect tracking. Additionally, he has experience in verification of code configuration and management as well as documenting test cases/scripts using automated tools as well as manual methods of documentation (spreadsheets). Also, Mr. Burba has been involved in, and has experience with, projects through the turnover process from vendor to client, which involves assuring that all acceptance criterium has been successfully met, all artifacts archived, all documentation approved and delivered by the vendor, and any deferred or accepted defects documented and approved prior to sign-off and delivery. Finally, he has worked with training vendors and state personnel in verifying that there is a valid training plan in place and that it is being effectively followed to assure that users or the solution can maintain, and operated the system following go-live and turnover.***

  Mr. Burba has a strong ability to analyze, develop, and institute needed procedures and policies for the projects he leads. He also possesses outstanding interpersonal and tested negotiation skills to help build lasting and supportive client/associate/management relationships. Finally, Mr. Burba has extensive experience in leading efforts, writing technical documentation, developing, analyzing and validating architecture and design documents and models. Please see Section VII (Proposed Staff Resumes) for additional information.

Please see Appendix IX.1 (Key Staff Qualifications Matrix) for additional information.

VI.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.

Please see Section VII (Proposed Staff Resumes) for IV&V Key Staff and Support Staff resumes.

VI.6 Preliminary IV&V Project Plan

4.6.1 Vendors shall submit a preliminary project plan as part of the proposal, including, but not limited to:

4.6.1.1 Gantt charts that show all proposed project activities;

4.6.1.2 Planning methodologies;

4.6.1.3 Milestones;

4.6.1.4 Task conflicts and/or interdependencies;

4.6.1.5 Estimated time frame for each task identified in Section 4, Scope of Work; and

4.6.1.6 Overall estimated time frame from project start to completion for both vendor and State activities, including strategies to avoid schedule slippage.

4.6.2 Vendors shall provide a written plan addressing the roles and responsibilities and method of communication between the contractor and any subcontractor(s).

4.6.3 The preliminary project plan shall be incorporated into the contract.

4.6.4 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.

PCG's Preliminary IV&V Project Plan (Project Schedule), which generally reflects the sequence of our activities and IV&V review cycles, is included in Attachment VIII.

Upon execution of the contract, PCG will work jointly with Replacement Project management to develop and finalize tasks, activities, and responsibilities in the creation of the detailed project schedule.

This detailed project schedule, developed in Microsoft Project, will assign resources and timelines to all IV&V tasks, account for State observed holidays, and will align with the implementation vendor's schedule as appropriate.

We will incorporate the State's comments and fixed deadlines into the final Detailed Project Schedule, which will be submitted to the State Project Manager for approval within the initial 30 days of project activities.

The project schedule will offer the Project and PCG team members' access to project data to assist them in performing their IV&V responsibilities. The schedule will depict:

- ***Work breakdown structure***
- ***Expected completion date of each task***

- ***Milestones***
- ***Task interdependencies***
- ***Estimated time frames***
- ***Overall estimated project time frames for Contractor and State activities***

Throughout the project, the PCG Team will maintain the work plan and schedule and review proposed updates with the Nevada project management team to finalize tasks, activities and responsibilities.

Please see Section V.2 (Planning and Administration, Develop the IV&V Management Plan) and VI.7 (Project Management) for additional information regarding the finalization and maintenance of the IVVMP and Schedule.

4.6.5 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.

PCG will document all risks and mitigations identified, and include them as part of our Written Status Reports. The process for managing Risks as part of the Written Status Report process will be included in the IVVMP. Potential risks that we will particularly be watchful for, by SDLC phase, are listed below:

Initiation, Concept and Planning

- ***Lack of an approved Project Charter defining understanding of scope, roles and responsibilities, decision making processes and schedule leads to confusion among project stakeholders, inefficient management processes, ineffective prioritization and schedule delays.***
- ***Lack of an integrated project work plan and baselined schedule leads to misunderstandings between project partners (i.e. the State, system integrator, external partners) and schedule delays.***
- ***Lack of resource management planning (e.g., right person, right time, right level of effort) leads to inappropriate resource allocations and schedule delays.***
- ***Lack of clear documentation defining the Project's management of processes, roles and responsibilities, communication, etc., leads to ineffective management activities, schedule delays and uncertainty among staff.***
- ***Lack of agreements with the Project's interface partners (clear objectives, roles, etc., as defined in vehicles such as Memorandum of Understandings and Service Level Agreements), leads to difficulty and delay in meeting project commitments.***
- ***Lack of tracking dependencies amongst deliverable and clear deliverable expectation documentation (DEDs) leads to deliverable delays and often project delays***

Requirements, Analysis, and Design

- ***Lack of a formal Requirements Management Plan (including requirements approval, clarification, traceability, etc.) leads to misunderstandings, schedule delays and requirements not being met as intended.***

- ***Requirements containing high-level descriptions rather than specific details (concrete terms, measurable, testable) make it difficult to fully test and signoff on whether a requirement has been met.***
- ***Insufficient input to and missed information (from key stakeholders, County SMEs) during software design in requirements definition leads to missing requirements and difficulty developing test scripts resulting in problems during system testing and schedule delays.***
- ***Incomplete and unknown design leads to insufficient infrastructure to meet expected timeframes and inadequate support of heavy processing impacting internal systems and interfaces.***
- ***Unnecessarily complex design leads to inefficient development, testing and maintenance impacting both the Project and the interface partners.***
- ***Incomplete traceability and/or documentation of requirements to design, test scripts, training documentation or source code, results in incorrect assumptions, undocumented decisions, and additional times required to research and understand requirements, and a lack of common understanding about requirements.***
- ***Incomplete traceability of design and impact to organizational change leads to gaps in processes and potential delays to implementation***

Development, and Testing

- ***Lack of adhering to good scope, change and configuration management processes leads to incomplete and delayed deliverables. Pressure may be applied by various stakeholders to redefine scope and goals, re-baseline schedules, etc., and the project control that has been established can be threatened. The remediation strategy is to sustain the project control processes that have been established and used within prior project phases.***
- ***Lack of well-defined coding standards or not following organization or industry best practices, and/or lack of system developers following established and documented standards, leads to redundant and inefficient code, as well as difficulties maintaining code.***
- ***Lack of proper and comprehensive build manifest documentation impacts development time, quality of deployment and consistency of documentation and quality between builds.***
- ***Lack of a comprehensive Master System Test planning (including Integration, Regression, System and Performance details) consistent with organization, project or industry standards, leads to extended or incomplete testing activities, as well as the inability to validate test success or failure.***
- ***Lack of adequate and thorough test phase acceptance (entry and exit) criteria leads to uncertainty of when testing is completed, and provides insufficient support and readiness for moving into subsequent phases.***
- ***Lack of conversion verification and validation leads to inherent member and case processing constraints***

Implementation

- ***Lack of a complete Implementation plan and clear Go/No Go criteria consistent with industry, organization or project standards leads to insufficient resource planning and organizational readiness, resulting in delays to the project schedule and increased user dissatisfaction.***
- ***Inadequately defined Maintenance and Operations plans to assure availability, and lack of clearly defined roles and responsibilities, leads to longer system downtime and user dissatisfaction.***
- ***Lack of clearly defined Final System acceptance criteria, communicated or understood by all parties, results in delays and disagreements in gaining system acceptance.***
- ***Lack of a complete Knowledge Transfer and Training Plan, consistent with organization, project or industry standards, results in decreased system maintainability, longer resolution time, longer system down time, increased user dissatisfaction, and uncertainty of roles and responsibilities.***
- ***Lack of sufficient and adequate training results in users unable to properly and effectively use the system, increased customer support levels, inefficient workflow, and overall user dissatisfaction.***

PCG tracks all of the project risks and issues in a log, and tracks each one to resolution, providing proposed plans to mitigate the potential risks and recommended strategies for managing the risks. Please see Appendix IX.5 IV&V Risk Log (Sample Assessment), which illustrates how this is done.

4.6.6 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.

PCG's IV&V team is based in Sacramento California, and will travel to the project site as required to perform all IV&V activities required by the RFP and/or participate via teleconference (as appropriate and approved by the Replacement Project). During our 10-day onsite review cycles, our Project Manager and Key Personnel (direct reports) will be onsite, full-time on your project site. We will maintain active communication with the Replacement Project throughout the project to ensure that our participation is appropriate for the circumstances.

Please see Section V.2 (Planning and Administration, Participate in Meetings and Promote Effective Communications) for additional information.

VI.7 Project Management

Vendors shall describe the project management methodology and processes utilized for:

4.7.1 Project integration to ensure that the various elements of the project are properly coordinated;

4.7.2 Project scope to ensure that the project includes all the work required and only the work required to complete the project successfully;

4.7.3 Time management to ensure timely completion of the project. Include defining activities, estimating activity duration, developing and controlling the project schedule;

4.7.4 Management of contractor and/or subcontractor issues and resolution process;

4.7.5 Responding to and covering requested changes in the project time frames;

4.7.6 Responding to State generated issues;

4.7.7 Cost management to ensure that the project is completed within the approved budget. Include resource planning, cost estimating, cost budgeting and cost control;

4.7.8 Resource management to ensure the most effective use of people involved in the project including subcontractors;

4.7.9 Communications management to ensure effective information generation, documentation, storage, transmission and disposal of project information; and

4.7.10 Risk management to ensure that risks are identified, planned for, analyzed, communicated and acted upon effectively.

PCG's Approach to Managing IV&V Projects

The PMBOK® 6th Edition defines project management as "the application of knowledge, skills, tools, and techniques to project activities to meet project requirements." In other words, project management encompasses the standards, processes, procedures, and supporting tools necessary to plan, monitor, and execute project life cycle phases. In addition, project management for IV&V goes beyond managing the daily activities of the project team. It involves monitoring and communicating the project status, ensuring the timeliness and quality of IV&V deliverables and identifying and resolving issues before the project is affected. PCG has four basic project management objectives that we deliver as the foundation of any sound project management methodology.

- ***Understand the Goal - Deliver high quality end products that address business objectives, and meet end user requirements;***
- ***Proactive Management - Identify potential problems before they develop, and initiate appropriate corrective action;***
- ***Effective Communication - Timely and accurate communication to project participants and stakeholders throughout the entire project; and***
- ***Deliver Results - Complete all deliverables on schedule and within budget.***

These tenets reinforce the team's commitment that starts on day one. We believe that success is realized when a project is delivered on time, within scope, and on budget.

Our IV&V approach for the NV Replacement Project begins with the preparation of a comprehensive IV&V Project Plan (schedule) for providing IV&V services. The schedule adheres closely to the project phases and knowledge areas (as applicable) as outlined within the PMBOK® 6th Edition and as depicted in PCG's Project Management Methodology displayed in the figure below.

The PCG Project Manager is the central point of contact throughout the engagement and will ensure that activities are completed according to the project work plan.

PCG's project management methodology employs a structured process that encompasses five industry standard processes groups that interact over the life of the project:

Figure VI-3: PCG Project Management Methodology

- ***Initiation - Begins at project conception and focuses on building the foundation of the project. Project goals and objectives are established, and sponsors and executive management are aligned. The IVVMP and IV&V Project Plan are created, and processes for monitoring progress and resolving issues are established;***
- ***Planning – Centers on formalizing the IVVMP and IV&V Project Plan. The PCG Project Manager finalizes project requirements and workload estimates, defines risks and contingencies, acquires project resources, establishes communication protocols, verifies deliverable expectations, and implements management tools;***
- ***Execution – Occurs throughout the life of the project, beginning with the allocation of human resources and assignment of work tasks. The PCG Project Manager directs project activities and administers project policy according to the IVVMP and IV&V Project Plan. Execution is an iterative process and we will re-plan to accommodate unforeseen changes in priority or scope;***
- ***Control – Occurs throughout the life of the project. The focus is on tracking progress against the plan, and controlling scope, schedule, budget, and staffing needs. The PCG Project Manager works with the Nevada project team to forecast project needs and execute corrective actions to overcome project challenges; and***
- ***Closeout - Formalizes Nevada's acceptance of the project. Lessons learned are documented, transition activities are completed, and all documentation is formally accepted and transitioned to operations.***

While the specific skills and tasks of the team may vary by project, PCG's underlying methodology remains universally applicable. PCG's planning deliverables will be modeled

after successful PCG IV&V engagements, specific Nevada needs, PMBOK® 6th Edition, and IEEE standards.

Based on the PCG Team's IV&V experience, we have identified potential challenges that could impact task activities. We have also identified a response of how our IV&V Team would overcome those challenges. During project initiation, we identify known project risks and develop mitigation strategies, risk ratings, priorities, risk owners, etc. The following potential issues will be discussed with the Nevada project team to begin the collaborative process. PCG is committed to working with Nevada and its stakeholders and to be as flexible as possible in identifying and mitigating project risks. PCG monitors all risks and issues. As State generated issues arise, PCG shall report on these issues and make recommendations where needed.

The following factors may impact the Replacement Project; they are presented along with PCG's approach to mitigating potential risk and impact.

- ***Ambitious Project Scope and Schedule - To mitigate Replacement Project schedule issues, PCG will work with the Replacement Project Team to confirm project priorities upon initiation and after each major milestone. PCG will look to confirm that the Replacement Project has establish a capable project governance model to enable decision-making and escalate issues in a timely manner. PCG will also review risk management and change management approach to anticipate potential problems and recommend mitigation them accordingly;***
- ***Changes in State and Federal Regulations - Political uncertainties and CSE legislation, policies and funding may alter the priorities established by the project. PCG will work with the Replacement Project to identify the impact of changes caused by external factors. Where appropriate, our IV&V Team may provide recommendations for mitigating funding, scope, and/or implementation impacts;***
- ***Managing Scope "Creep" - Lack of stringent requirements management may result in schedule delays, cost overruns or the implementation of a system that does not meet business needs. This risk is compounded if there are undocumented requirements for current legacy system functionality which will need to be identified and cataloged. PCG will work with the Nevada project team to verify that scope, schedule, requirements and cost baselines are established using requirements traceability matrices. Once the baselines are established, PCG will evaluate change management procedures to document all impacts to the scope baseline and help determine corrective actions;***
- ***Agency, Program and Staffing Changes - Over the life of a project, budget and other impacts require staffing changes, reorganizations and program modifications. Changes in staff assigned to the project, especially if replacements are not named in a timely manner, can have a significant impact on the project. PCG will review the project charter including the vision, mission and goals for the project. Once the scope is baselined, PCG will confirm that the Replacement Project is using approved Change Management process to document all changes that occur that impact time, cost and quality. If changes in Replacement Project personnel will impact project timelines, PCG will provide recommendations as appropriate that could minimize the impact on the project;***

- ***Managing Stakeholder Expectations -*** ***Each stakeholder has objectives for the new Replacement Project. The PCG Team is experienced at understanding the difference the "nice-to-have" and the "necessary-to-have" and will leverage that expertise when evaluating the need for future system updates or replacement. PCG's team will verify that Nevada has a well-developed list of project priorities with a rationale for how these priorities are ranked and their overall relevance to the goals of the project. As appropriate, PCG will provide recommendations for decision criteria that could be used by the Replacement Project to achieve its objectives.***
- ***Agreement among Project Participants*** ***- PCG understands that new systems can transform programs. They are often met with resistance by one or more project participants. As identified, PCG will communicate areas of observed or likely resistance to Replacement Project, and as appropriate provide recommendations that could mitigate the impact.***

Independent Verification and Validation Management Plan

For each IV&V project, PCG produces an IVVMP that outlines the approach to delivering the results of the IV&V assessments. The IVVMP describes the IV&V assessment procedures, checklists, and other tools used during the engagement. It also includes a detailed schedule of tasks required to complete IV&V assessments and related activities.

The IVVMP will be delivered within the first thirty (30) days from the date of contract award and will contain the following:

- ***PCG's organization chart(s), which that includes PCG's corporate structure, PCG's proposed IV&V Team, and key members of the State Replacement Project team;***
- ***Key resource contact list that includes names, addresses and other contact information to be used for dispute resolution and customer feedback;***
- ***IV&V staffing Plan that includes roles and responsibilities for State, PCG, sub-contractor staff;***
- ***Attachments of resumes of all IV&V Key Staff;***
- ***A schedule describing the first twelve (12) months of IV&V activity, including tasks, activities, deliverables, and milestones, and shall show the schedule's critical path;***
- ***A detailed description of all deliverables and an associated DED that describes the expected format, content, and organization to be developed and delivered for the next two IV&V Reviews (12 months); and***
- ***As Appendices, all applicable, project lifecycle-appropriate IV&V Checklists, based upon the Activities Tables from Section below, to be utilized during the first twelve (12) months of IV&V activity. IV&V Checklists are presented in Question and Answer format and include elements to be reviewed, observed, monitored, and commented on, with regard to all aspects of applicable industry standards.***

The IVVMP will be prepared in conformance with Replacement Project IV&V requirements, PMBOK® 6th Edition, federal OCSE Requirements, State standards, and other applicable standards.

PCG will present a draft IVVMP to the project during a document walkthrough within ten (10) business days of the Project Kick Off meeting. The document walkthrough will involve a thorough review of the draft deliverable. A comment matrix will be used so that the project staff can document and consolidate written feedback to the draft deliverable within five (5) business days or within the schedule requested by the project.

PCG anticipates the submission of one draft and one final version of the IVVMP. PCG will update the IVVMP after receipt of comments from the project staff, and submit it for final review and approval within five (5) days of receipt of comments.

Both the narrative IVVMP and the Project Schedule will be maintained throughout the life of the project. PCG will request the project's approval of all changes to the plan and schedule prior to making any update.

Project Schedule

PCG has included our Preliminary IV&V Project Plan (schedule) for the Replacement Project, which accounts for State observed holidays and generally follows the sequence of our RFP requirements, showing the logical flow of the tasks, in the figure below.

Please see Attachment VIII (Preliminary IV&V Project Plan) for additional information.

VI.8 Quality Assurance

4.8 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.

Please refer to Section IV.1.5.3 for details regarding Quality Assurance.

VI.9 Metrics Management

4.9 Vendors shall describe the metrics management methodology and processes utilized to satisfy State requirements as outlined in Section 4, Scope of Work of this RFP. The methodology shall include the metrics captured and how they are tracked and measured.

PCG utilizes a metrics management process that is flexible, scalable, and customizable to project needs. The team will review the standard PCG project metric matrix and customize it to DWSS management's goals, project risk areas and expected outcomes – with a focus on identifying the right set of metrics to provide the most value to the Replacement Project. Using this approach, PCG will be able to generate measures that are useful - but not overly burdensome.

Based on ITIL® and ISO/SEC 20000, this process is based on a continual improvement lifecycle, which is intended to provide process metrics and techniques to help align technical objectives with business objectives in order to create value by making processes and services more efficient as well as effective by:

- ***Aligning with project objectives and verify the results;***
- ***Maintain compliance requirements for business operations; and***
- ***Help drive project efficiencies, effectiveness and quality.***

PCG follows a simple four-step project metric design process:

- ***Customize PCG project metric matrix to the project;***
- ***Determine methods and tools for measurement;***
- ***Design reporting format, delivery and frequency; and***
- ***Implement project metric reporting.***

Individual metrics in the matrix are evaluated to determine:

- ***Objective – why do we want to measure this?***
- ***Drivers – what behavior are we seeking by measuring this?***
- ***Frequency – how often will we measure and report this information?***
- ***Sources – where will the information for the measure come from?***
- ***Formula – how will we calculate the measure?***
- ***Outcomes – what things may need to be adjusted based on the derived measure?***

The matrix also provides:

- ***Insight into what is working well;***
- ***Potential areas for focus to improve current status;***
- ***Improved ability to communicate performance to stakeholders;***
- ***Increased transparency;***
- ***Trends marking improvement (or decline) in project processes; and***
- ***Flexibility to meet specific and changing project needs.***

PCG metrics are driven from both IV&V data (i.e., the IV&V findings log is a detailed Risk/Issue tracking log that contain risks and issues, risk analysis findings, mitigation strategies with action tasks, expected timeframes and responsible parties) as well as project data.

IV&V data is captured throughout the lifecycle of the project and will be used to build customizable dashboards that support various degrees of detail for both internal project team distribution as well as external stakeholders. Each dashboard provides graphical representations of historical trending as well as metrics specific to each assessment area in order to provide overall indicators of potential downstream impacts to the project.

PCG will provide the methodology for measurement, metrics standards, and a set of suggested measures for the project and customize performance reporting materials (e.g., dashboards) that will be incorporated into the project metrics section of the IVVMP.

In addition, PCG obtain metrics data from the State's QA Monitor and the QA Vendor, in order to verify that the metrics available to the State and OCSE are comprehensive and useful.

Please see Appendix IX.4 Project Metric Matrix for a sample set of project metrics.

VI.10 Design and Development Process

Vendors shall describe the methodology, processes and tools utilized for:

4.10.1 Analyzing potential solutions, including identifying alternatives for evaluation in addition to those suggested by the State;

4.10.2 Developing a detailed operational concept of the interaction of the system, the user and the environment that satisfies the operational need;

4.10.3 Identifying the key design issues that shall be resolved to support successful development of the system; and

4.10.4 Integrating the disciplines that are essential to system functional requirements definition.

This section is not applicable to this solicitation, per the State's response to Amendment 1. However, PCG will verify and report that work is progressing and deliverables are produced by the implementation vendor using the tools and processes outlined in this proposal.

Vendors shall describe the methodology, processes and tools utilized for:

4.11.1 Control of changes to requirements, design and code;

4.11.2 Control of interface changes;

4.11.3 Traceability of requirements, design and code;

4.11.4 Tools to help control versions and builds;

4.11.5 Parameters established for regression testing;

4.11.6 Baselines established for tools, change log and modules;

4.11.7 Documentation of the change request process including check in/out, review and regular testing;

4.11.8 Documentation of the change control board and change proposal process; and

4.11.9 Change log that tracks open/closed change requests.

This section is not applicable to this solicitation, per the State's response to Amendment 1. However, PCG will verify and report that work is progressing and deliverables are produced by the implementation vendor using the tools and processes outlined in this proposal.

VI.11 Peer Review Management

Vendors shall describe the methodology, processes and tools utilized for:

4.12.1 Peer reviews conducted for design, code and test cases;

4.12.2 Number of types of people normally involved in peer reviews;

4.12.3 Types of procedures and checklists utilized;

4.12.4 Types of statistics compiled on the type, severity and location of errors; and

4.12.5 How errors are tracked to closure.

This section is not applicable to this solicitation, per the State's response to Amendment 1. However, PCG will verify and report that work is progressing and deliverables are produced by the implementation vendor using the tools and processes outlined in this proposal.

VI.12 Project Software Tools

4.13.1 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.

PCG uses an array of software tools to effectively assess technical processes and components of IT systems, and manage the IV&V work efforts.

Microsoft Office Suite:

- ***Microsoft Outlook is used mainly as an email application, it also includes a calendar, task manager, contact manager, note taking, journal, and web browsing.***
- ***Microsoft Word is a widely used commercial word processor. Microsoft Word is a component of the Microsoft Office suite of productivity software. This software will be used for document and artifact creation.***
- ***Microsoft Excel is a software program that allows users to organize, format and calculate data with formulas using a spreadsheet system. This software will be used for document and artifact creation.***
- ***Microsoft PowerPoint is presentation software developed by Microsoft. The program uses slides to convey information rich in multimedia. This software will be used for document and artifact creation.***
- ***Microsoft Visio is a diagramming and vector graphics application that includes a variety of pre-drawn shapes and picture elements that can be dragged and dropped onto the illustration. This software will be used for document and artifact creation.***
- ***Microsoft Project is a project management software program that is designed to assist a project manager in developing a plan, assigning resources to tasks, tracking progress, managing the budget, and analyzing workloads. This software will be used for documentation and project tracking.***
- ***Microsoft Access is a database management system (DBMS) from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software-development tools.***
- ***Microsoft SharePoint is a browser-based collaboration and document management platform content management system that allows organizations to establish centralized, password protected space for document sharing (Internal to PCG).***

Adobe Acrobat is a family of application software that allows the viewing, printing and management of portable document files (PDF). This software will be used for document and artifact creation.

Cisco WebEx is a company that provides on-demand collaboration, online meeting, web conferencing and videoconferencing applications.

The Requirements Traceability Matrix (RTM) tool is a document that links requirements throughout the validation process. The purpose of the Requirements Traceability Matrix is to verify that all requirements defined for a system are tested in the test protocols.

4.13.2 Costs and training associated with the project software tools identified shall be included in Attachment I, Project Costs.

All cost information has been provided with Attachment 1 Project Costs.

VII. PROPOSED STAFF RESUMES (ATTACHMENT H)

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 Attachment H Resumes have been provided for Team PCG beginning on the next page.

VII.1 Laurie Thornton, IV&V Engagement Manager

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Laurie Thornton***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Engagement Manager***		
# of Years in Classification:	***7***	**# of Years with Firm:**	***12***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE

Information should include a brief summary of the proposed individual's professional experience.

PCG is proposing Ms. Laurie Thornton to serve as our Engagement Manager for this project. In this role, Laurie brings significant experience with industry standards and best practices regarding Independent Verification and Validation (IV&V) and quality assurance. She has proven her leadership skills in this role in Nevada, specifically the Division of Welfare and Supportive Services (DWSS), and on other major systems implementation projects in California, Hawaii, Delaware and Michigan. In all instances, she is responsible for overseeing the quality of PCG's deliverables as well as resourcing these engagements to ensure that PCG's services are provided on a timely basis and exceed client expectations.

Ms. Thornton brings close to 30 years of public sector consulting experience and in the last 5 years has led, or is currently leading PCG's IV&V projects on large system implementations in the States of Delaware, Hawaii, Michigan, and Montana. All of these complex projects have involved the implementation of: new business processes, secure Internet applications, and phased implementation schedules. On these engagements, Ms. Thornton has led PCG's IV&V Team to assess: training plan development and delivery to support the implementation of new business processes and systems, data cleansing and/or conversion, system and user acceptance tests utilizing automated testing tools, and system readiness.

Ms. Thornton also brings planning experience in the Child Support industry at the state and local levels, and is knowledgeable of the Automated Systems for Child Support Enforcement: A Guide for States (2009), and Title IV-D requirements.

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.

Timeframe: 8/2015 to Present
Company Name: Michigan Department of Health and Human Services, IV&V Services for Systems Modernization Projects
Company Location: Lansing, MI
Position Title: Engagement Manager

Project Description: Overseeing PCG's team of professionals to provide IV&V services comprised of technical, validation (testing), and evaluation assessments to ensure Michigan's cloud-based MMIS and secondary IT systems and services meet federal certification requirements and are performing to the State's defined design, cost, schedule, and performance specifications/capabilities. PCG's services focus on the following review areas:

- Project Management
- Quality Management
- Requirements Management
- Software Development
- Development Environment
- System and Acceptance Testing
- Data Sharing/Management
- System Readiness
- Training Plans
- Operations/Business Environment
- Security

In addition to providing project-specific services, PCG is also performing a series of assessments of the MDHHS Program Management Offices and operations for Medicaid eligibility and enrollment (including BRIDGES, the core solution and MiBRIDGES, the internet application) the Statewide Automated Child Welfare Information System (including SACWIS and MiSACWIS), and Michigan's Child Support Enforcement System (including CSES and MiCSES). In all of these instances, Ms. Thornton participates in writing technical assessment reports and assuring quality.

Hardware/Software: Sparx Enterprise Architect and MS Office Suite

Timeframe: 8/2015 to Present
Company Name: Delaware Department of Health and Social Services, IV&V Services for HHS Systems Replacement Projects
Company Location: New Castle, DE
Position Title: Engagement Manager

Project Description: Overseeing PCG's team to provide IV&V services on two large-scale projects – a new modular Medicaid Management Information System (MMIS) to replace Delaware's legacy system, and incremental (phased) modernization of its Medicaid eligibility system (e.g., upgrades to its Application for Social Services and Internet Screening Tool known as ASSIST, and creation of a Master Client Index (MCI) database which serves as a statewide identifier for Delaware-provided services).

On these engagements, PCG provides semi-annual reports to offer independent and unbiased assessments of the projects' true status, performance trends, compliance with applicable standards and policies, and compliance with program expectations and requirements. PCG's IV&V risk-based services address multiple aspects of the SDLC, which include reviewing the system integrator's project management, project requirements, system architecture, design, testing, system readiness, training and organizational change management, data management, and system security. Ms. Thornton participates in

developing and writing periodic IV&V and technical assessment reports to assure quality throughout the project.

Hardware/Software: MS Office Suite

Timeframe: 7/2012 – 1/2014
Company Name: Nevada Department of Health and Human Services, Division of Welfare and Supportive Services, IV&V Services for Health-Care Reform Eligibility Engine
Company Location: Carson City, NV
Position Title: Engagement Manager

Project Description: Led PCG's IV&V projects to assist the State of Nevada to implement the Affordable Care Act – one that would result in a new business rules engine to store all of the eligibility rules for publicly-subsidized health coverage programs at the Department of Health and Human Services, DWSS, and another that would provide the technical infrastructure for an online marketplace and customer service center to support the operations of the Silver State Health Insurance Exchange. PCG provided IV&V services on both of these projects which required the implementation of new business processes and procedures, and were implemented using a phased approach. The primary goals of these IV&V projects were to:

- Provide independent review and analysis of all of the management, operational and technical activities, verifying and validating that activities and services conform to program expectations as documented in the requirements;
- Confirm that all intermediate and final application software deliverables strictly adhered to the business and technical requirements and user expectations;
- Review the development of delivery of training plans;
- Validate system and user acceptance testing;
- Evaluate system readiness;
- Validate the effectiveness of system implementation activities; and
- Confirm that all system development activities and processes adhere to regulations, industry standards and best practices.

Using our well-tested IV&V methodology based on IEEE 1012-2012 and our internal toolset, PCG provided unbiased assessments of the projects' true status to increase the probability for success by forewarning Nevada's stakeholders of real or potential adverse situations, ensuring the project is properly structured, and all necessary project plans, resources, personnel and other critical components have been identified, created, addressed and obtained prior to implementation. On these projects, Ms. Thornton participated in developing and writing IV&V and technical assessment reports to assure quality.

Hardware/Software: IBM SPSS, and MS Office Suite

Timeframe: 7/2014 to 5/2016
Company Name: Government of Guam, Office of the Attorney General, Child Support Enforcement Division, Project Planning for Absent Parent Automated System Information (APASI)
Company Location: Tamuning, Guam
Position Title: Senior Advisor

Project Description: Provided planning services to replace the CSED's Absent Parent Automated System Information (APASI). The purpose of the Feasibility Study/Alternatives Analysis (FSA) was to provide an objective and analytical evaluation of child support system implementation options for Guam CSED. The FSA included the study results and provided a recommendation regarding which of the evaluated alternatives should undergo additional analysis as part of a separate Cost Benefit Analysis (CBA). As an initial component of the planning effort, an assessment of the current business, functional and technical condition of the CSED organization and APASI was completed. The assessment documented deficits in relation to unreliable data, inadequate interfaces, flawed financial design, lack of automated workflow processes, customer service constraints, lack of usability, out of date technology, manual report generation,

and a lack of current system documentation. Based on CSED's needs, a set of functional and technical requirements were developed and documented.

Four alternatives were considered for CSED that met the Health and Human Services (DHHS) Administration for Children and Families (ACF) requirements and consisted of a variety of design and implementation possibilities. Transferring an existing federally certified system from another state, and making minimum changes to align the system with Guam's requirements was considered, resulting in the identification of a subset of candidates for further consideration, including the California Child Support Automated System (CCSAS).

Hardware/Software: MS Office Suite

Timeframe: 1/2013 to 12/2015
Company Name: Hawaii Department of Human Services, IV&V Services for Integrated Eligibility System Replacement Project
Company Location: Honolulu, HI
Project Title: Engagement Manager

Project Description: Overseeing PCG's team to provide IV&V services to support Hawaii's implementation of the Kauhale (Community) Online Eligibility Assistance (KOLEA) system, a multi-phased project with a first release that went live Oct. 1, 2013 and converted all the Medicaid functionality from the legacy system to KOLEA. The remaining releases added enhanced functionality and automation to KOLEA. These enhancements, which involved the implementation of new business processes and procedures, included updating the online benefits application, consolidating and updating notices, automating business rules and decision making processes, enhancing security processes and procedures, creating an enterprise content management system, and developing a customer relationship management system.

PCG project activities focus on reviewing the system integrator's project management, requirements management, quality management, operating environment, design and development activities, testing, data management, training, and security activities.

The IV&V Team participates in meetings, reviews vendor deliverables, and conducts interviews with vendors and State staff. Ms. Thornton participates in developing and writing periodic IV&V and technical assessment reports to assure quality throughout the project.

SW/HW Tools: MS Office Suite

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of California, Davis
Bachelor of Arts, Psychology
June 1980

California Polytechnic University, San Luis Obispo
Master of Business Administration
June 1983

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Professional, Certification #1324180, March 2010 (valid thru 3/24/19)

ADKAR Organizational Change Management, March 2014

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

Microsoft Office Suite:
- MS Project
- MS Visio
- MS Office Suite
- MS SharePoint.

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Karen Parker, Deputy Director
MI Department of Health & Human Services
Phone: (517) 241-5555; Fax: n/a
ParkerK7@michigan.gov

Randy Chau, MedQUEST Project Manager
HI Department of Human Services
Phone: (808) 692-7951; Fax: n/a
RChau@medicaid.dhs.state.hi.us

David N. Stewart, MBA
Deputy Administrator, Health Information, Technology and Analytics
Nevada Department of Health and Human Services
Division of Health Care Financing and Policy | Administration
Phone: (775) 684-3703; Fax: n/a
d.stewart@dhcfp.nv.gov

VII.2 Pauline Palmer, IV&V Project Manager

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Pauline Palmer***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***IV&V Project Manager***		
# of Years in Classification:	***14***	**# of Years with Firm:**	***14***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE

Information should include a brief summary of the proposed individual's professional experience.

Ms. Palmer is a Certified Project Manager with over 20 years' experience managing highly complex projects from conception to implementation. Ms. Palmer has expertise in project management, process mapping, application and system requirements definition, and system development lifecycles from concept to implementation and Independent Verification and Validation. She has managed teams that delivered assessments of all project phases including design, development, and implementation of large scale, enterprise technology projects. A successful IV&V identifies high-risk areas early; provides State management and the federal government an objective analysis to deal with system development issues and to make informed decisions; provides management with improved and objective visibility into the progress and quality of the development effort; and reduces errors in delivered products and increases probability of project success. The assessments include validation against State and federal requirements to ensure that deficiencies and risks are identified and that best practice recommendations are provided to ensure compliance. Ms. Palmer's experience also includes excellent facilitation and problem solving skills and project management mentoring structured towards the client's environment, and the ability to work well with State and federal agencies.

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.

Timeframe: 8/2016 to Present
Company Name: Washington, Department of Health and Social Services (DSHS), Provider Compensation Subsystem and Services (PCSS)
Company Location: Olympia, WA
Position Title: Sr. Project Manager

Project Description: The Individual ProviderOne (IPOne) system is the secure internet application that allows Individual Providers to submit timesheets, receive pay for hours worked for in-home clients, and allows providers to manage Medicaid claims. Washington DSHS has contracted with Public Consulting Group, Public Partnerships LLC to provide the IPOne Solution. On this project, Ms. Palmer is working with State and PCG leadership and project staff to optimize existing process and define new business processes / procedures, and checklists, and developing training plans to implement the new business processes. Tasks include managing overall optimization timeline, technical writing, developing To-Be process, analyzing systems and processes in order to identify and implement optimized solutions. Processes include Configuration Management, Capacity Planning, Change Management, System Outage, Escalation, Requirements Management, Release Management, Code Deployment, Data Fixes, Release Management, Incident/Defect Management, System and User Acceptance Testing, and Escalation. Duties also include assisting the client to define Quality/Quality Assurance / Quality Control procedures and reports. Ms. Palmer serves as key resource for communication between the State and DSHS to ensure expectations are met. Ms. Palmer provides project management mentoring to ensure best practice methodologies are utilized to optimize operational processes.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 10/2011 to 03/2014 and 9/2015 to 8/2016
Company Name: California Health Benefit Exchange (Covered California), Business and Operations Planning Services
Company Location: Sacramento, CA
Position Title: Senior Project Manager

Project Description: Provided project management services for the ongoing operations of Covered California which includes manual and secure internet applications to manage the Exchange. Services include defining and reengineering business processes/procedures, developing training plans for the processes, procurement planning, RFP development, technical writing, system and process analysis, risk management, and other project management duties as needed. Duties also included solution analysis for sales, marketing, and external community outreach programs.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 7/2014 to 5/2016
Company Name: Government of Guam, Office of the Attorney General, Child Support Enforcement Division, Project Planning for Absent Parent Automated System Information (APASI)
Company Location: Tamuning, Guam
Position Title: Business Analyst

Project Description: Provided planning services for the purpose of analyzing, developing, and writing planning documents to upgrade or replace CSED's Absent Parent Automated System Information (APASI) in accordance with Guam and federal Child Support/Title IV-D requirements. Planning services also include the following Feasibility Study and Alternative Analysis, Cost Benefit Analysis, Requirements Analysis and Definition, Alternatives Analysis, Determining Risks and Effects, assessing and integrating future

compliance standards and laws, high-level conceptual design, development of performance measures, and producing IAPD documents. Duties also included analysis to determine the best approach for the phased implementation for the proposed solution, assessing data cleansing and conversion plans and requirements, served as a technical writer for plans, deliverables, and system documents.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 08/2012 to 4/2015
Company Name: Nevada Department of Health and Human Services, Division of Health Care Financing and Policy and the Silver State Health Insurance Exchange, Silver State Health Insurance Exchange (SSHIX) and Health Care Reform Eligibility Engine Project (HCR-EE) and Silver State Health Insurance Exchange (SSHIX) Independent Verification and Validation (IV&V)
Company Location: Carson City, NV
Position Title: Project Manager

Project Description: Managed Independent Verification & Validation project team that conducts an independent assessment the project fulfills its intended purpose. IV&V assessments include conducting interviews to develop baseline observations, conducting periodic reviews, preparing observations, findings, and recommendations. IV&V assessments included evaluation of the State's Project Management methodology, solution vendor's plans and system documentation, and Training and Knowledge Transfer Plans, Quality /Quality Assurance / Quality Control Plans, and more. The assessments also included validation of system and User Acceptance testing in accordance with State and federal requirements. Engagement deliverables included developing the Verification and Validation Plan (VVP), Risk Management Plan, Communication Plan, Quality/Quality Assurance/Quality Control Plan, and Test Management Plan. During the engagement, Ms. Palmer played a key role in identifying and notifying the client of the lack of system readiness of the SSHIX solution. Tasks include preparing monthly status reports, federally required reports, and presented material during the federal gate reviews.

In addition to specific IV&V duties, role also includes standard project management activities such as cost, schedule, quality, staffing management, project management, hardware, training knowledge transfer plans, software, and business processes and procedure evaluations. Duties also included working with stakeholders to determine expectations and gain buy-in regarding the system's planned functionality and ability to meet the program's needs using existing performance as baseline in order to make recommendations for improvement. Ms. Palmer also provided risk management and capacity planning assessments and developed performance metrics to ensure the project was tracked against scheduled milestones.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 9/2010 to 12/2010
Company Name: California Department of Social Services, Independent Verification and Validation (IV&V) for the Development and Implementation Phase of the Case Management Information and Payrolling Systems Project (CMIPS)
Company Location: Sacramento, CA
Position Title: Senior Project Manager

Project Description: To provide the California Department of Social Services with independent, unbiased assessment of a project's true status, performance trends, compliance with applicable standards and policies in addition to compliance to program expectations, system readiness, and requirements. Assessments included validating system and executing system and User Acceptance testing.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 8/2008 to 01/2009
Company Name: California Housing Finance Agency (CalHFA), Multifamily Automation Project
Company Location: Sacramento, CA
Position Title: Senior Project Manager

Project Description: To provide CalHFA with a new Multifamily Loan Origination System to process, track, and report on Multifamily deals and loans from origination through the point at which they are permanently closed and transferred to Asset Management.

As Senior Project Manager, led team through market research, produced a Vendor Statement of Work, and facilitated client conference calls and site visits. Responsibilities also included leading the software and vendor evaluation and selection phase of the project. In support of the software procurement, developed detail requirements, data cleansing and conversion plans, and conducted JAD sessions to produce process flow diagrams, system configuration, technical writing of system documentation, data conversion, training, and implementation. Duties also included defining and optimizing business processes / procedures and assisting the State to define training plans and conducting system and User Acceptance tests.

Hardware/Software: MS Office Suite of Software and Tools

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Shasta College, Shasta, CA
AA, Information Technology
June 1982

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Certificate, University of California, Davis, March 2001

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

MS Project – All engagements
MS Visio– All engagements
MS Office Suite– All engagements
MS SharePoint – Washington, Department of Health and Social Services (DSHS) and California Health Benefit Exchange (Covered California)

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Shawna DeRousse
Health Plan of Nevada
Phone: (775) 781-2567: Fax: n/a
Shawna.derousse@uhc.com

David N. Stewart, MBA
Deputy Administrator, Health Information, Technology and Analytics
Nevada Department of Health and Human Services
Phone: (775) 684-3703; Fax: n/a
d.stewart@dhcfp.nv.gov

Karen De Leon
Deputy Operations Manager, IP1
Phone: 360-725-3268; Fax: n/a
deleokl2@dshs.wa.gov

Yolanda Richardson
(Previous COO Covered California)
Phone: (916) 730-7565; Fax: n/a
richardsonyol@aol.com

VII.3 Ruben Ramos, IV&V Analyst

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Ruben Ramos***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.		***IV&V Analyst***	
# of Years in Classification:	***17***	**# of Years with Firm:**	***4***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Ramos has extensive IV&V experience spanning over 15 years with agencies in California, Texas, Montana, Iowa, Arizona, Louisiana, Tennessee, and US Territories. As a member of the PCG IV&V Team, Mr. Ramos brings experience in child support programs and systems, and IV&V experience in multiple large IT system implementations.

In his various project management roles, Mr. Ramos has interacted with top-level department heads and State control agencies to report progress and status. He has management experience in all aspects of initiating, planning, executing, controlling and closing projects. He has experience with the CCSAS system having served as a Consortia Project Lead in support of California's efforts to develop a single statewide child support system. He has led teams in design, test, and issue management in child support, health and human services and desktop application systems. Mr. Ramos brings real-life program experience having worked as a child support enforcement officer for the State of Texas OAG for seven years, further evidence of his deep knowledge and understanding of the challenges faced by 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.

Timeframe: 06/2005 to 02/2007
Company Name: California Department of Child Support Services (DCSS)
Company Location: Rancho Cordova, CA
Position Title: Consortium Project Lead

Project Description: The California Child Support Automation System (CCSAS) engagement was in support of California's efforts to develop a single statewide child support system to meet PRWORA requirements and allow for federal certification. This included the implementation of an alternate system configuration involving two interim systems as well as the development of a new system. Mr. Ramos was involved in the daily operations management of the interim child support system as it interacted with the State's Alternate

System Configuration. He conducted analysis of proposed changes to both the interim and statewide systems to ensure certification requirements were met. He also participated in ongoing requirements gathering sessions and assisted in the development of documentation with regard to the interim system. Provided support to the fifty-five counties using the interim system in the areas of training plans and execution, testing, change management, and operations management.

Hardware/Software: MS Office Suite

Timeframe: 09/2014 to 06/2016
Company Name: Guam Office of the Attorney General, Child Support Enforcement Division
Company Location: Tamuning, Guam
Position Title: Project Manager

Project Description: Feasibility Study / Cost Benefit Analysis engagement with the territory of Guam providing project planning services for the purpose of analyzing, developing, and writing planning documents to upgrade or replace Guam CSED's Absent Parent Automated System Information (APASI). The Planning Services activities and deliverables included the following:

- Status Quo Assessment
- Requirements Analysis and Definition
- Feasibility Study and Alternative Analysis
- Assessing and integrating future compliance standards and laws
- High-Level Conceptual Design
- Development of Performance Measures
- Developed Documents for use with an IAPD

Hardware/Software: MS Office Suite

Timeframe: 05/2014 to 09/2015
Company Name: Iowa Department of Human Services
Company Location: Des Moines, IA
Position Title: Senior IV&V Analyst

Project Description: The project involved development of a new Eligibility Integrated Application Solution (ELIAS) system, which is replacing its current eligibility system for Medicaid, Food Assistance, Temporary Assistance to Needy Families (TANF), and Children's Health Insurance Program (CHIP) with a COTS product being implemented by a system integrator using Agile Methodology. As Senior Analyst Mr. Ramos conducted in-depth IV&V requirement and standard focused assessments. His assessments included collaboration with stakeholders to collect information and review project artifacts. The findings and recommendations were presented to the State and other project stakeholders in the form of IV&V reports.

Hardware/Software: MS Office Suite

Timeframe: 02/2007 to 08/2007
Company Name: Texas Office of the Attorney General, Child Support Enforcement Division
Company Location: Austin, TX
Position Title: Business Team Lead

Project Description: The Texas CSE Business Process Redesign (BPR) Project involved the study of business processes and technology to identify inefficiencies and processes that could be enhanced through process redesign and reimplementation using new technologies where applicable. The purpose of the study was to help define the agency's vision of future service delivery and assess the integration of new solutions. As Business Team Lead, led review of 15 business areas, documenting current processes and evaluating proposed redesign models for the TXCSES child support system. Acted as a liaison between the project team and OAG Child Support Subject Matter Experts (SMEs) identified for each area. Participated in extensive requirements gathering sessions. Assisted in the development, review, and acceptance of all vendor produced BPR deliverables for the project.

Hardware/Software: MS Office Suite

Timeframe: 11/2011 to 11/2012
Company Name: Louisiana Department of Child and Family Services
Company Location: Baton Rouge, LA
Position Title: Project Management Office (PMO) Lead

Project Description: The One DCFS Transformation Project was a combination of three large project components supporting the overall transformation of the DCFS service delivery model:

- The Common Access Front End (CAFÉ) component involved the implementation of secure internet solution involving portals (customer and worker) to support the exchange of information and services used by clients and staff in support of Child Support Enforcement, Child Welfare, Economic Services, and Child Care Licensing programs
- Enterprise Content Management Solution – The Imaging component involved the integration of the CAFÉ front end application with a Document Imaging & Content Management system
- Master Client Index and Master Provider Index – This component involved the integration of two large scale indices with CAFÉ

Mr. Ramos provided project management oversight for CAFÉ application development providing recommendations regarding organizational management and business/IT alignment strategy to Assistant Project Directors. He assisted in the facilitation of requirements gathering, development and implementation of the custom built CAFÉ application. Under his direction, the PMO planned, coordinated, and managed User Acceptance Testing including the development of the UAT Plan, testing process documentation and test scripts for both the CAFÉ application and the Imaging solution.

Hardware/Software: MS Office Suite

Timeframe: 03/2001 to 05/2005
Company Name: California Consortium IV (C-IV) Consortium
Company Location: Rancho Cordova, CA
Position Title: Quality Assurance / IV&V Technical/Functional Test Analyst

Project Description: The Consortium IV (C-IV) Development and Implementation Project was responsible for the design and phased implementation of the secure internet application, Consortium IV, a Statewide Automated Welfare System (SAWS) development project supporting 6,600 users in 127 sites across 4 California counties. Duties included oversight of testing for the systems external interfaces as well as its nightly batch processes using automated testing tools. Provided technical support during the User Acceptance Testing effort, specifically those testing activities related to the issuance of benefits and system interfaces. Supported the development of the Quality Assurance Independent Verification and Validation Test Plan, the User Acceptance Test (UAT) Plan, testing process documentation, test scripts and execution. Conducted quality assurance reviews of application designs including the verification of design against the requirements specified in the business model. Heavily involved in the review of deliverables documentation associated with the application during all phases of the project (requirements, design, development, testing, training plans and execution, and implementation). Worked with the C-IV analysts and county representatives in the review and analysis of proposed policy design and changes necessary for migration. Reviewed and provided feedback regarding development vendor's work products and deliverables related to application development and migration.

Hardware/Software: MS Office Suite

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of Phoenix, Phoenix, AZ
Associate Course Studies, MIS
June 2005

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Eclipse IV&V® Associate, May 2016
Professional Scrum Master I, June 2017

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Hardware: PC, Mac, networks, peripherals
Software: Microsoft Office Suite, Visio, MS Project, Adobe Acrobat, Test Director, PVCS Tracker, TOAD, Erwin, Enterprise Architect, WinRunner, LoadRunner, ClearQuest, SQL, Oracle, Rational Suite Products, MS Project Server, Atlassian Suite Products (JIRA, JAMA, etc.)

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Jaime Murray, Consortia Oversight Manager
California Dept. of Child Support Services
Phone: (925) 759-7380 or (831) 454-3632; Fax: n/a
jamie.murray@santacruzcounty.us

Sherry White, Transformation Project Lead
Louisiana Department of Social Services
Phone: (225) 219-1968; Fax: n/a
Sherry.white@la.gov

John Boule, Consortium Project Manager
California C-IV Consortium
Phone: (916) 851-3226; Fax: n/a
boulej@c-iv.org

Lorrie Tritch, CIO
Iowa Department of Human Services
Phone: (515) 281-8303; Fax: n/a
ltritch@dhs.state.ia.us

VII.4 May Fung, IV&V Analyst

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***May Fung***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***IV&V Analyst***		
# of Years in Classification:	***32+***	**# of Years with Firm:**	***3 yrs. 5 mo.***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Ms. Fung has thirty-two years of experience in software engineering lifecycle with consistently increasing responsibilities in requirements management, oversight, quality assurance, test management and program development and implementation. Her experience includes engagements for state agencies across the nation including California, Delaware, Michigan, and US Virgin Islands. She is currently serving as a Senior IV&V Consultant for the Michigan Department of Health and Human Services, responsible for performing IV&V deliverable reviews in the areas of requirements, design and testing for the ISD Portal, Contact Center and Universal Case Load Projects.

Ms. Fung has 4 years of experience providing quality assurance expertise in the support of the California Child Support Automation System (CCSAS) Project for the California, Franchise Tax Board and Department of Child Support Services. Her responsibilities included serving as a technical lead of the Quality Assurance team, reviewing requirements, design and testing of developed system, and advising FTB and DCSS on quality of system development life cycle activities. She reviewed the interdependencies between all projects by examining the testing, risk management process, planning, resource utilization, and budgets and schedule management of each project and the effect each project had on the overall CCSAS portfolio. CCSAS interfaced with the Child Support Environment (CSE), State Distribution Unit (SDU) and (PRISM).

Ms. Fung for the California Medicaid Management Information System (CA-MMIS) System Replacement Project developed the organization's standards for following through with the Agile Methodology, and performed Requirements Traceability Assessments. She participated in process design sessions, software design reviews, and assess resulting work products and contractor- produced deliverables using the Capability Maturity Models (CMM) and the IEEE standards. She assessed the Agile Software Development Approach (ASDA) processes of the contractor to verify that they are consistent with best practices and standards. She validated the deliverables against best practices in system engineering, and verify that they meet the client's requirements. She has knowledge and experience using Agile methods (e.g. Scrum) to design, develop, and implement functional software that meets business users' needs. She has knowledge of Medicaid Information Technology Architecture (MITA), Centers for Medicare & Medicaid Services (CMS) business processes, and CMS 7 standards and conditions.

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.

Timeline: 5/2017 to Present
Company Name: Michigan Department of Health and Human Services
Company Location: Lansing, Michigan
Position Title: Senior IV&V Consultant

Project Description: Michigan Department of Health and Human Services is implementing a modernized solution that includes a secure internet application allowing members to apply for benefits online. Ms. Fung participates in requirement review sessions, software design reviews, system and user acceptance tests, and newly developed business processes and procedures that were required to support the new application for the Integrated Service Delivery (ISD) Portal, Contact Center and Universal Case Load (UCL) Projects. She assessed the Requirements Traceability Matrix, Requirements Plan, and Test Plans. She assessed the contractors work products and verify that they are of good quality and under quality control and consistent with best practices and standards. She validated the deliverables against best practices in system engineering, and verify that they meet the client's requirements using CMMI and IEEE standards.

Hard/Ware: MS Office, MS SharePoint, Rational ClearQuest, and Rational Quality Manager

Timeframe: June 2017 to August 2017
Company Name: Delaware Department of Health and Human Services
Company Location: Newark, Delaware
Position Title: Senior IV&V Consultant

Project Description: Delaware Department of Health and Human Services is implementing a modernized solution that included a secure internet application allowing members to apply for benefits online. Ms. Fung reviewed the newly developed business processes and procedures that were required to support the new application. Ms. Fung participated in the MITA Module Checklist reviews for Care Management, Plan Management and Performance Management areas for the Delaware Medicaid Enterprise System. She assessed the contractors work products and verify that they are of good quality and under quality control and consistent with best practices and standards. She used her knowledge of Medicaid Information Technology Architecture (MITA), Centers for Medicare & Medicaid Services (CMS) business processes, and CMS 7 standards and conditions.

Hardware/Software: MS Office, MS SharePoint, and CMS Medicaid Enterprise Certification Toolkit and Checklists

Timeframe: April 2017 to September 2017
Company Name: US Virgin Islands Department of Human Services
Company Location: US Virgin Island
Position Title: Senior IV&V Consultant

Project Description: US Virgin Island Department of Human Services is implementing a modernized solution that included a secure internet application allowing members to apply for benefits online. Ms. Fung reviewed the newly developed business processes and procedures that were required to support the new application. Ms. Fung provides an independent review and analysis of the Quality Assurance Management Plan and technical activities of the VIBES Project DDI team's performance, ensuring all activities and services conform to program expectations of the quality and quality control as documented in project artifacts for the VIBES Integrated Eligibility and Enrollment Project. She also confirms all intermediate and final application system documentation adheres to the project's business and technical requirements intent and users' expectations. She also participated in the review of the MITA Module Checklist reviews for Eligibility and Enrollment FDDR. She used her knowledge of Medicaid Information Technology Architecture (MITA), Centers for Medicare & Medicaid Services (CMS) business processes, and CMS 7 standards and conditions. The VIBES project is being developed as a secured Internet Application.

Hardware/Software: MS Office, MS SharePoint and CMS Medicaid Enterprise Certification Toolkit and Checklists

Timeframe: April 2014 to April 2017
Company Name: California Department of Health Care Services
Company Location: Sacramento, California
Position Title: Senior IV&V Consultant

Project Description: The California Department of Health Care Services implemented a modernized solution that included a secure internet application allowing members to apply for benefits online. Ms. Fung participated in the initial phased implementation process design sessions, software design reviews, system and user acceptance tests, and assess resulting work products and contractor- produced deliverables for the California Medicaid Management Information System (CA-MMIS) System Replacement Project.

Ms. Fung reviewed the new Agile business processes and procedures and compared them against project standards, such as the CMMI, California Department of Technology, Statewide Information Management Manual (SIMMI) Section 45 Information Technology Project Oversight Framework, Centers for Medicare and Medicaid Services (CMS), Medicaid Information Technology Architecture (MITA) Framework, Medicaid Management Information System (MMIS) Framework, and several IEEE standards including IEEE 730 Standard for Quality Assurance Plan.

She assessed the Agile Software Development Approach (ASDA) processes of the contractor to verify that they are consistent with best practices and standards. She validated the deliverables against best practices in system engineering, and verify that they meet the client's requirements. Ms. Fung has taken the new Agile Software Development Processes and Procedures and created several checklists to help review the new processes. The User Story Checkpoint Checklists, the Agile Product Grooming Checklist, the Agile Delivery Team Checklists and the Agile Validation Checklist were created and used to assess the new processes. She has knowledge of Medicaid Information Technology Architecture (MITA), Centers for Medicare & Medicaid Services (CMS) business processes, and CMS 7 standards and conditions.

Ms. Fung reviewed the Business Process Models from the As-Is diagrams and the To-Be diagrams to ensure that no business process was missed. Part of the Managed Care System was being built in MedCompass by AssureCare which during System Testing and User Acceptance Testing were being performed parallel with the old system and the new system to ensure that the new system is performing similar to the old system.

Ms. Fung performed, participated and provided to management our assessment of the system readiness for Release 2 Go-No Go Readiness review.

Ms. Fung reviewed Data Conversion Plans and Reports from the CA-MMIS Data Warehouse that used the ETL process, data cleansing and conversion. She also reviewed the Training Plan that included the

development of course outlines and materials and the organization and the conducting of the classes to support the CA-MMIS project for Release 1.

Ms. Fung used her technical writing skills and reported on the Requirement Traceability Matrix Assessment. She ensured that there was forward and backward traceability from Requirements to User Stories to Use Cases to Test Cases (both for system and UAT) and vice versa. The Rational Quality Manager was used as the automated test tool.

Hardware/Software: MS Office, MS SharePoint, DOORs, Version One (housed user stories and epics), Rational Quality Manager, and Blue Works (housed documents) CMS Medicaid Enterprise Certification Toolkit and Checklists

Timeframe: September 2011 – April 2014
Company Name: California Franchise Tax Board
Company Location: Rancho Cordova, California
Position Title: Senior Technical Lead

Project Description: Ms. Fung reviewed processes and procedures and compares them against project standards, CMMI, California Department of Technology, Statewide Information Management Manual (SIMMI) Section 45 Information Technology Project Oversight Framework, and several IEEE standards including IEEE 730 Standard for Quality Assurance Plan.

Ms. Fung reviewed and participated in the System/Software Requirement, Software Design, Software Detail Design, Data Conversion, Code, System Test, and User Acceptance Test Reviews for the Enterprise Data to Revenue (EDR) Project. Ms. Fung used her technical writing skills to report on oversight findings, observations, risks and recommendations. Reviewed Data Management Plan, Data Cleansing and Data Conversion efforts that used the ETL process.

Ms. Fung reviewed the Training Plan that included the development of course outlines and materials and the organization and the conducting of the classes to support the EDR project.

Ms. Fung determined if the deliverables provided the functionality required by the sponsoring business entity and then identified and quantified any issues or risks affecting the project dependencies, technology or resource constraints, and scheduling dependencies. Ms. Fung worked with the Project Manager to identify new business processes and procedures and place governance around the oversight framework. The EDR project brought more self-service options and account information to “MyFTB” website for taxpayers, a secure internet application. The EDR Project included five major components: New Return Processing System, Improved Analytics, New Self-Service Options for Taxpayers and Representatives, Business Improvements, and Improved Legacy Systems.

Hardware/Software: MS Office, MS SharePoint, Rational Requisite Pro, Rational ClearQuest, Rational ClearCase and Rational Quality Manager

Timeframe: December 2006 to April 2010
Company Name: California Department of Motor Vehicles
Company Location: Sacramento, California
Position Title: Verification and Validation Officer

Project Description: Ms. Fung oversaw in a quality assurance capacity the California’s DMV portfolio of key technology projects and report portfolio oversight findings, risks and recommendations. She reported on eight high visible projects which are secured internet applications for the Enterprise Wide Oversight Consultant (EWOC) Services Project and determined if the projects were on track to be completed within the estimated scope, schedule and cost, determined if the projects provided the functionality required by the sponsoring business entity and then identified and quantified any issues or risks affecting cross-project dependencies, technology or resource constraints, and scheduling dependencies. Ms. Fung reviewed system and user acceptance tests, Training Plans, and newly develop business processes and procedures that were required to support the new applications.

MS Office and MS SharePoint

Timeframe: October 2002 to December 2006
Company Name: California Franchise Tax Board
Company Location: Rancho Cordova, California
Quality Assurance Senior Technical Lead

Project Description: Ms. Fung has spent the four years actively involved in the quality assurance effort on the California Child Support Automation System, which is dedicated to providing a single integrated system to support the California Department of Child Support Services. During this time, Ms. Fung has demonstrated knowledge of Title IV, Part D of the Social Security Act, as well as the detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009.

Ms. Fung coordinated with the Quality Assurance Manager and developed the initial Quality Management Plan and the Quality Policy for the California Child Support Automation System (CCSAS) Project. Participated in the reviews of the project deliverable assigned by the QA Manager. Report findings on the process and product assessments using technical writing skills. Provide inputs into the assigned tasks on the Monthly Quality Assurance Reports and the Contract Management Monthly Status Reports.

Ms. Fung participated as an active member of the Testing Integration Workgroup, Performance Test Work Session and the Production Control Board.

Ms. Fung provided feedback on reviews of technical deliverables and technical presentations. The technical deliverables included products in the development phase, Software Requirement Specification, Software Design Description, and testing phase, Master Test Plan, Software Test Plan, System Test Plan, User Acceptance Test Plan and System Verification Test Report. The technical presentations included the System Requirements Review (SRR), Software Requirements Review (SwRR), and Software Design Review (SwDR)

Hardware/Software: MS Office, MS SharePoint, Rational Requisite Pro, ClearCase and ClearQuest, and Rational Quality Manager

Timeframe: March 2003 to July 2003
Company Name: California Department of Transportation
Company Location: Sacramento, California
Position Title: Process Manager

Project Description: Ms. Fung worked with subcontracting vendor to convert Caltrans' process of the Application Development and Maintenance Manual to the automated process tool developed by Computer Associate, the All Fusion Process and Product Management Suite.

Ms. Fung provided a Training Plan that included the development of course outlines and materials for the new processes being developed and briefed the engineers on using the Classic process model. Converted Caltrans process tasks, such as ensuring that active deliverables, icons and techniques were complete and accessible and verified the conversion was operational in Caltrans All Fusion environment.

Hardware/Software: Computer Associate, All Fusion Process and Product Management Suite

September 2001 to June 2002
Company Name: California Highway Patrol
Company Location: Sacramento, California
Position Title: Senior Test Manager

Project Description: Ms. Fung provided overall system test and user acceptance test expertise in support of the Time Activity System (TAS) for the California Highway Patrol (CHP). The TAS system is a web-based secure internet application, with Oracle Developer 2000 for the front end and Oracle 11I DBMS for the back end. Scheduled the coordination and tested the next phased implementation (April 2002 to June 2002) of the TAS system for deployment on July 2002. Delivered for the first phase implementation the System Test Plan, System Test Procedures, System Test and User Acceptance Test and System Test Report. Analyzed, reviewed and evaluated the Requirements, System Design, and Implementation of the TAS system to ensure that the system operates according to the requirements set out for this information system.

Hardware/Software: A web-based application, with Oracle Developer 2000 for the front end and Oracle 11I DBMS for the back end

Timeframe: February 2001 to October 2001 and July 2001 to October 2002
Company Name: California Department of Transportation
Company Location: Sacramento, California
Position Title: Senior Test Manager

Project Description: Ms. Fung provided overall project management and process improvement expertise in support of several contracts with the State of California, Department of Transportation (also known as Caltrans). On the Process Continuum project, providing training and mentoring on the Computer Associates Process Continuum toolset along with implementing the tool in a breakthrough project. Developed processes in the areas of design, project closeout and maintenance to complete the Application Development and Maintenance Methodology framework. Created policies and procedures for the Department of Managed Health Care on project management and configuration management.

Ms. Fung provided overall system/software test engineering expertise in support of the Extra Work Billing System for the State of California, Department of Transportation (Caltrans). The EWB system is a web-based application, with Oracle Developer 2000 for the front end and Oracle 8I DBMS for the back end. Delivered the System Test Plan, System Test Procedures and System Test Report. Reviewed and evaluated the Requirements Traceability Matrix and the System Design Document.

Hardware/Software: Computer Associates Process Continuum toolset, and web-based application, with Oracle Developer 2000 for the front end and Oracle 8I DBMS

Timeframe: August 1999 to July 2000
Company Name: Roseville Communication Company
Company Location: Roseville, California
Position Title: Senior Test Engineer

Project Description: Ms. Fung provided overall system/software test engineering expertise in support of the Force TX Management System for Roseville Communication Company (RCC) hosted on a HP-Unix operating system with Exceed as the PC-based, client/server architecture using Oracle 7.3.4, Resource Availability Planning on Lotus 123 and TechCom Mobile Data Terminal on Visual Basic. Participated in technical evaluations of internal specifications, training plans, and designs. She evaluates design, code and test on assigned system requirements. Technically wrote, managed, produced and coordinated technical documents in accordance with industry standards for documents such as the software test plan and software test description. Conducted software technical reviews for test readiness review, and system acceptance test. Conducted the Software Integration Testing.

Hardware/Software: HP-Unix operating system with Exceed as the PC-based, client/server architecture using Oracle 7.3.4, Resource Availability Planning on Lotus 123 and TechCom Mobile Data Terminal on Visual Basic.

Timeframe: October 1998 to July 1999
Company Name: Houlihan Lokey Howard Zukin
Company Location: Los Angeles, California
Position Title: Senior Test Engineer

Project Description: Ms. Fung provided overall software test engineering expertise in support of the Houlihan Lokey Howard Zukin (of Los Angeles) on the Consolidated Information Management System (CIMS) which was hosted on a three tier PC-based, client/server architecture using Oracle 7.3.4, Documentum and PowerBuilder 6.5. Participated in technical evaluations of internal specifications, plans, and designs, as well as implement and evaluate design, code and test on assigned system requirements. Managed, produced and coordinated technical documents in accordance with industry standards for documents such as the software test plan, software test description, and software test report. Conducted

software technical reviews for system test readiness review, and system acceptance test, as well as performed the Software Integration Testing.

Ms. Fung chaired the Sacramento Process Improvement Network (SPIN), a non-profit organization, to coordinate and facilitate the understandings of process improvement to the Sacramento community.

Hardware/Software: Three tier PC-Based, client/server architecture using Oracle 7.3.4, Documentum and PowerBuilder 6.5

Timeframe: January 1997 to August 1997
Company Name: Department of Energy
Company Location Folsom, California
Position Title: Test Engineer

Project Description: Ms. Fung provided overall system/software test engineering, expertise in support of a new client server system for the Department of Energy - Western Area Power Administration Power Billing System written in PowerBuilder 5.0. Participated in technical evaluations of internal and contractor plans and designs. Implemented and evaluated design, code and test on assigned Software Requirements. Managed, produced and coordinated technical documents such as software test plan and software test case description as well as conducted Software Integration Testing using the SQA Test Suite as an automated test tool.

Hardware/Software: PowerBuilder 5.0, and SQA Test Suite

Timeframe: July 1985 to July 1996
Company Name: McClellan Air Force Base
Company Location: McClellan AFB, California

Project Description: Ms. Fung mentored and advised senior management on the oversight of process improvement activities in the TIS Software Division. Provided mentoring services to project leaders and managers to improve their project management skills and to use the Project/ Process Management Toolset (PPMT). Coordinated Division Level Configuration Management activities with the branch chief. Reviewed the Air Force Acquisition Model (AFAM) to identify and coordinate changes affected by software metrics as well as initiate routine and special studies and reports as required. As an assessment team member, conducted the Capability Maturity Model Based Assessment for Internal Process Improvement (CBA-IPI) to assess the organization, TIS, as Level 3.

Ms. Fung provided overall system/software engineering, technical, and requirement analysis expertise in support of new or existing aircraft avionics modification programs. Maintained and prepared schedules, personnel, and cost budgets for a variety of projects such as the F-111 E/F Stores Management System, the F-111E Ada Rewrite Project, and the FB-111 (A) Very High Speed Integrated Circuit (VHSIC) Prototype Effort. Participated in technical evaluations of internal and contractor proposals/ plans/ designs as well as implemented and evaluated design, code and test on assigned Operational/ Mission/ Support Software requirements. Applied the structured analysis methodology as the design method and applied and maintained configuration of all documents in both the Rational Case Tool and Windows Workgroups environments.

Hardware/Software: Software Engineer Process Group Member and Electronics Engineer, Flight Simulator, Project/ Process Management Toolset (PPMT), Capability Maturity Model Based Assessment for Internal Process Improvement (CBA-IPI) Assessment, Rational Case Tool and Windows Workgroups environments

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of California, Davis
BS Electrical & Computer Engineering (BSEE)
March 1985

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Eclipse IV&V® Professional Certification, November 6, 2015
Certificate in Software Professional Development Program**,** Air Force Institute of Technology (AFIT), Wright Patterson, Ohio, 1995
ITIL® Foundation Certification, January 29, 2016
Professional Scrum Master I, August 27, 2017

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Environments: Unit, System, System Integration, User Acceptance Test
Hardware: Web Services, Mainframe Legacy systems, IBM WebSphere, P-Unix operating system with Exceed
Software: MS Office, Reviewed code in Java, Visual Basic, Lotus 123, Documentum, PowerBuilder
Databases: Oracle Developer 2000, Oracle 11i DBMS, Oracle 8i DBMS, and Oracle 7.3.4**,**
Tools: MS SharePoint, CMS Medicaid Enterprise Certification Toolkit and Checklists, Rational ClearQuest, Rational Quality Manager, DOORs, Version One (housed user stories and epics), Blue Works (housed Technical documents), Rational Requisite Pro, Rational ClearCase, Computer Associate's All Fusion Process and Product Management Suite, and SQA Test Suite

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name: Donald "Tank" Waklee
Organization: Franchise Tax Board
Phone number: (916) 845-7430
Email: Tank.Waklee@ftb.ca.gov

Name: Maureen Tooker
Organization: Department of Health Care Services
Phone number: (916) 373-7720
Email: Maureen.Tooker@dhcs.ca.gov

Name: Mark Hopkins
Organization: Department of Transportation
Phone number: (916) 440-0580
Email: Mark.Hopkins@dot.ca.gov

VII.5 Donna Kurtz, IV&V Analyst

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Donna Kurtz***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.		***IV&V Analyst***	
# 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.***

Ms. Kurtz is a Consultant within PCG's Technology Consulting practice, specializing in project management, IV&V, quality assurance and testing services. Prior to joining PCG's Technology Consulting practice, Ms. Kurtz had over 23 years of public sector experience as a state employee in various departments, including the California Department of Child Support Services (DCSS). During her 5 years at DCSS, she served various roles on the California Child Support Automation System (CCSAS) Project. This project included a phase implementation for their secured internet application. Ms. Kurtz' roles included acting as lead in the Child Support Enforcement Network (CSENet) Interstate/International and Core Financial functional areas. She brings a strong child support background, with a demonstrated knowledge of Title IV, Part D of the Social Security Act the Automated Systems for Child Support Enforcement: A Guide for States 2009. She has experience in all phases of the system development life cycle including project management, research, analysis, problem resolution, testing, defect management, change management, design and development, execution, and closure. Donna's strengths are in her organization, communication, coordination, team-building, and relationship skills

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.

Timeframe: April 2005 to April 2010
Company Name: California Department of Child Support Services (DCSS), California Child Support Automation System (CCSAS) Project
Company Location: Sacramento, CA
Position Title: Program/Project Manager

Project Description: Acted as the program manager for Child Support Enforcement Network (CSENet) Interstate/International activities. Initiated and facilitated meetings to review and resolve Interstate/CSENet/International related issues; tracked and monitored schedules, deadlines, team assignments and defects; managed CSENet interface activities; tracked and scheduled new interface exchange agreements; monitored production interface and testing efforts for status, system readiness, and possible issues; acted as the primary contact for Interstate/CSENet related issues and inquiries for the federal Office of Child Support Enforcement (OCSE) and 53 other states and territories, California Central Registry, Local Child Support Agencies, vendors, and other internal departmental staff; ensured state/federal regulations (Title IV-D) and legislative changes were analyzed for system impacts and provided impact analysis and recommendations. Also served as the chairperson for the Interstate-CSENet Workgroup of the Change Management Coordination Committee (CMCC): facilitated workgroup meetings which include staff from state/county departments and vendors; brought forth assigned issues for review/analyses and made recommendations for system or business process/procedural changes; consulted/coordinated/communicated with other workgroups as needed; ensured consensus and elevated unresolved issues; tracked/monitored assignments; led 'prioritization' efforts and 'holistic' project; and provided status and recommendations to the CMCC, executive management and county directors; performed technical writing, including Issues Papers, Workgroup Recommendations, Business Process Guides, Impact Analysis Packages and Statewide Bulletins/Alerts.

Acted as the CCSAS project manager for the Defense Finance and Accounting Service (DFAS) interface with the OCSE (federal) portal: monitored production interface and system and user acceptance testing efforts for status, system readiness, and possible issues; facilitated DFAS related meetings to provide updates and status to interface partners and executive management; tracked and monitored schedules, deadlines, team assignments and defects; and planned, developed and implemented system changes related to federal requirements and DFAS updates.

Represented the Department's Program/Policy and Accounting Divisions by serving as team lead of the CCSAS Core Financial Team. Supported the system's development by managing the financial (inc., fiscal and audit) related requirements, data conversion, system and user acceptance testing and implementation activities. Participated in Joint Application Requirements/Joint Application Design (JARs/JADs) sessions with the implementation vendor, CA Franchise Tax Board, and County Child Support staff. Tracked, monitored and performed quality assurance on implementation vendor deliverables, such as Software Design Documents (SDD) - page/report/form mockups and descriptions and Software Requirement Specifications (SRS) - Use Case Specifications, etc. Performed as team member and lead on the development of technical documents, such as Change Requests and Impact Analysis Packages. Identified and resolved issues, developed and presented recommendations to management. Ensured state and federal regulations and legislative changes were incorporated into new system. Performed as lead for the financial team's systems qualification testing (SQT) which included assigning, tracking, monitoring, writing, reviewing and performing test scripts. As lead for the financial team, tracked, assigned and monitored incoming tasks and projects. Provided status to various staff and management on team activities.

Hardware/Software: MS Office Suite

Timeframe: December 2015 to Present
Company Name: California Department of Health Care Services (DHCS), Managed Care Monitoring System (MCMS) Project
Company Location: Sacramento, CA
Position Title; Design, Development, and Implementation Team

Project Description: Working with the departmental staff to identify and document business and technical requirements, business processes and procedures, which will be used to design and develop multiple MS Access databases. The MCMS tool will be used to develop both internal and external reports and dashboards. In addition to constructing the functionality to provide reporting capabilities, Ms. Kurtz is building a structure which would enable the department for future development in a larger enterprise-wide application. Other responsibilities include providing tool overviews, coordinating system and user acceptance testing, facilitating training and turnover sessions, as well as finalizing User Guides and Technical Documentation.

Hardware/Software: MS Office Suite

Timeframe: December 2013 to December 2015
Company Name: Delaware Department of Health and Social Services (DHSS), IV&V Services for the Delaware Eligibility Modernization (DEM) Project
Company Location: New Castle, DE
Position Title: Testing/Requirements Management/Implementation SME

Project Description: As a PCG employee on the Delaware Eligibility Modernization (DEM) Project, Ms. Kurtz provided independent verification and validation of the project's requirements management, implementation, and testing activities. Activities included the review and assessment of business processes, policies and procedures related to requirements management and all testing related activities, including system and user acceptance testing. Additionally, reviewed and assessed miscellaneous project deliverables and activities related to implementation, such as training plans, schedules, departmental newsletters, all-hands conference calls, etc. Documented observations and provide appropriate recommendations.

Hardware/Software: MS Office Suite

Timeframe: June 2013 to December 2015
Company Name: Hawaii Department of Human Services (DHS), IV&V Services for the Kauhale On-Line Eligibility Assistance (KOLEA) Project
Company Location: Honolulu, HI
Position Title: Testing/Requirements Management SME

Project Description: Ms. Kurtz defined the methodology and approach to demonstrate that the KOLEA system met the eligibility specific HHS/CMS required functionality as defined within the CMS test scenarios (also known as CMS Blueprint test scenarios) and also passed scenarios exclusive to HI and the KOLEA system. Wrote and executed applicable test scripts; identified and documented defects; and provided testing results to DHS. Ms. Kurtz reviewed and assessed all testing and requirements related deliverables, processes, procedures, and tools (e.g., plans, reports, manual and automated testing results, requirements traceability matrices (RTMs), requirements management tool, etc.) Performed quality control during testing to ensure accuracy, requirements coverage, and traceability. Document observations and provide appropriate recommendations. Additionally, provided federally required testing attestation services.

Hardware/Software: MS Office Suite

Timeframe: June 2013 to December 2015
Company Name: Washington Health Benefits Exchange (HBE), Health Care Authority's (HCA) Health Benefits Exchange Project
Company Location: Olympia, WA
Position Title: Testing/Requirements Management SME
Project Description: As a PCG employee on the Washington Health Care Authority's (HCA) Health Benefits Exchange Project, Ms. Kurtz participated in the CMS Blueprint Test planning, design, and execution activities independent testing of the CMS Blueprint Test Scenarios, including development of a test plan, test scripts that supported each of the CMS Blueprint Test Scenarios, and execution and validation of developed test scripts. This included coordination with the State, CMS, and System Integrator for the processes (e.g., Defect Management), procedures, tools, and environment used during testing.

Timeframe: April 2010 to August 2012
Company Name: California State Controller's Office, Financial Information System of California (FI$Cal) Project
Company Location: Sacramento, CA
Position Title: SCO Legacy Systems Team Member/Lead, Senior Information Systems Analyst

Project Description: Acted as team lead for the department's Legacy Systems Analysis Unit (LSAU). Documented impacted existing financial systems' functions, as-is business processes and procedures, and data; identified and documented impacted systems' interfaces, reports, and forms. Acted as liaison between vendor staff and subject matter experts to acquire information, clarification, and final approvals of legacy system documentation. Participated on several specials projects, which included the FI$Cal Legacy Systems Inventory (LSI) and Statutes, Regulations and Policies (SRP) projects and the Data Conversion Subproject (DCP), Activities included the development and maintenance of multiple MS Access databases, including the SCO departmental inventory of legacy systems and project related activities database; Maintained library of project documentation. Developed and provided various reports to management and project staff. Participated in/facilitated internal meetings with business and technical teams to provide status, knowledge, expertise, and coordinate efforts related to department's legacy systems and applications. Communicated and coordinated with external departmental and project staff, other partner agencies, and vendor representatives.

Hardware/Software: MS Office Suite

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

n/a

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Information Technology Infrastructure Library (ITIL®) v3 Certification, May 2011
Project Management Professional (PMP) Certification, December 2015
Eclipse Independent Verification and Validation (IV&V) Certification, Associate Level, December 2016

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Microsoft Office Suite
Rational Suite (RequisitePro and Clearquest)
Hewlett Packard Application Lifecyle Management (HP ALM)

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Shawyn Drain, Director, Division of Customer Communications
Health and Human Services
Administration for Children and Families
Office of Child Support Enforcement (OCSE)
Phone: (510) 332-5703; Fax: n/a
Shawyn.Drain@acf.hhs.gov

Regina Martin, Deputy Director, Santa Clara County
Department of Child Support Services
Phone: (408) 503-5419 or (408) 489-5019; Fax: n/a
regina.martin@css.sccgov.org

Deborah Deeds, *Cross Functional Team Lead/Child Support Professional Lead
Office Enterprise Program Management
CA Department of Child Support Services
Phone: (916) 464 5085; Fax: n/a
Deborah.deeds@dcss.ca.gov
(*Sonoma County staff currently on special assignment at the CA DCSS)

Sheila Neal, Staff Information Systems Analyst
DCSS Business Applications Section
Technology Services Division
CA Department of Child Support Services
Phone: (916) 464-6756
sheila.neal@dcss.ca.gov

VII.6 David Ruddy, CCSAS & Legacy Transition SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***David Ruddy***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***CCSAS & Legacy Transition Team Member***	
# of Years in Classification:	***20+ years, IT Consultant***	**# of Years with Firm:**	***15+***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Mr. Ruddy is a PMI certified Project Management Professional (PMP) with 20 years of experience supporting public sector agencies.

During his consulting career, Mr. Ruddy has been responsible for successfully delivering projects encompassing all aspects of project management, system requirements and design, business process engineering, systems development and testing, data conversion, and implementation support.

As a production maintenance / operations manager, Mr. Ruddy has had the opportunity to manage large project teams and diverse stakeholder groups in fast paced, "mission critical" production environments. As operations manager for California's 13 county KIDZ Child Support System. Mr. Ruddy also managed California's production Federal (Child Support) Case Registry. In both instances, Mr. Ruddy was responsible for managing business and technical system operations. This included system, database and network administration; hardware and software installation, management and decommissioning; interface management; call center; system and acceptance testing; training; and release management.

As a technical manager, Mr. Ruddy has led complex statewide system development initiatives requiring extensive coordination between both state and vendor business and technical resources, for a wide range of technical solutions across multiple platforms, for health & human services and public safety agencies. His experience includes management of business and technical teams, in both agile and waterfall environments; on mainframe and distributed systems; in both physical and virtual environments.

As a quality manager, IV&V analyst and business analyst, Mr. Ruddy has gained valuable experience facilitating strategic planning and operational support activities, seeking resolution to challenging business and technical challenges, working collaboratively with clients to develop policies and procedures to improve operational efficiency and effectiveness, and providing management and oversight of vendor activities on behalf of the 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.

Timeframe: March 2014 to Present
Company Name: Washington, Department of Health and Social Services (DHSS), IPOne System Development, Implementation and Maintenance Project
Company Location: Olympia, WA
Position Title: Quality Manager

Project Description: The IPOne PCSS Project focuses on implementing a payroll system for social service Individual Providers (IPs) employed by clients of DSHS in the State of Washington. It also includes implementing all of the services that will support the providers through the Operations and Maintenance (O&M) Phase.

Mr. Ruddy works with State and PCG executive leadership and project staff to establish quality assurance and quality control processes and tools throughout design, development, implementation and operations. Mr. Ruddy's activities have included establishing and monitoring processes, tools and metrics that ensure the delivery of high quality work products and secure applications. Mr. Ruddy works proactively with State and PCG leadership to identify and mitigate project and operational risks.

Hardware/Software: MS Office Suite

Timeframe: November 2011 to June 2013
Company Name: California, Department of Health Care Services (DHCS)
The Short-Doyle Medi-Cal (SDMC) System
Company Location: Sacramento, California
Position Title: System Maintenance and Operations Manager

Project Description: The Short-Doyle Medi-Cal (SDMC) system is a claims processing system that adjudicates Mental Health and Alcohol and Drug program claims from California counties and direct providers. The system processes claims 24 hours per day, 365 days per year, for a total of approximately $3 billion in claims annually.

Mr. Ruddy was responsible for managing a team of business and technical staff responsible for production system maintenance. The team operated under a rigid agile (SCRUM) development methodology. The team was responsible for system monitoring, issue triage, system modification and tuning, testing, training, and configuration management. In addition to production maintenance, Mr. Ruddy also managed the phased implementation of a system redesign effort that ensured compliance with legislative mandates and that improved claims processing by more than 200% within 6 months. Mr. Ruddy also worked with state management to develop and implement new system maintenance and operations processes.

Hardware/Software: MS Office Suite

Timeframe: July 2010 to October 2011
Company Name: California, Office of Systems Integration (OSI), The Case Management, Information and Payrolling System (CMIPS)
Company Location: Sacramento, California
Position Title: IV&V Consultant (Testing)
Project Description: CMIPS is a case management and payment processing system that enables nearly 400,000 qualified aged, blind, and disabled individuals in California to remain in their own homes and avoid institutionalization. The CMIPS II project focused on the Design, Development and Implementation (DD&I) of the legacy system's replacement.

On this project, Mr. Ruddy provided IV&V services, focused on vendor testing (automated, manual) activities for all aspects of the system. Mr. Ruddy was responsible for reviewing the CMIPS II DD&I vendor deliverables for compliance with requirements and industry best practices. Mr. Ruddy also monitored state

and vendor activities to ensure adherence to approved project plans and processes, and documented risks and mitigation strategies as needed.

Hardware/Software: MS Office Suite

Timeframe: April 2009 to June 2010
Company Name: California, Department of Corrections & Rehabilitation (CDCR), Parole Law Enforcement Automated Data System (LEADS) Modernization Project
Company Location: Sacramento, CA
Position Title: Technical Project Manager

Project Description: Parole LEADS was a legacy system replacement project that focused on providing local law enforcement agencies with critical Parolee information via a secure, web-based application, a mobile (handheld) solution, and automated web-services interface.

On this project, Mr. Ruddy reported directly to CDCR executive management, and he worked with the State User Project Manager to ensure system functionality met user needs. Mr. Ruddy provided direct oversight and management of the DD&I vendor and coordinated with State resources for ongoing operations support. He also worked directly with the State Office of the Chief Information Officer (OCIO) on progress reporting, as well as the Independent Verification and Validation (IV&V) vendor. The system was successfully deployed to 600+ law enforcement agencies within California, and more than 30,000 authorized users. The project was completed within budget, and more than 2.5 months ahead of schedule.

Hardware/Software: MS Office Suite

Timeframe: September 2008 to March 2009
Company Name: California, Department of Alcohol and Drug Programs (ADP), Provider Registry Information Management Enterprise (PRIME) Project
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: The focuses on design of a centralized data repository model that would reduce redundancies in enterprise data. This project serves as the first step in ADP's effort to implement an enterprise-wide Oracle database solution that supports all department business applications.

On this project, Mr. Ruddy managed a team of consultants responsible for conducting an agency business analysis and developing the business, functional and technical requirements; for the logical and physical database model. During the course of this project, the team analyzed data repositories, gathered functional requirements, and identified data elements relevant to the PRIME solution. The team then created design schemas, data maps, and data dictionaries to support the future system. PCG staff also worked with the state to ensure data security and integrity under the proposed solution.

Hardware/Software: MS Office Suite

Timeframe: August 2007 to August 2008
Company Name: California, Department of Alcohol and Drug Programs (ADP), Outcomes Management Treatment System (CalOMS Tx)
Company Location: Sacramento, CA
Position Title: Production Support Manager

Project Description: CalOMS Tx was developed by ADP to capture and report on treatment outcomes data for the drug and alcohol treatment programs administered by 58 counties and 70+ direct service providers in California.

On this project, Mr. Ruddy lead a team of business and technical staff responsible for system monitoring, data analysis, troubleshooting, testing, and release management support. Mr. Ruddy worked with the State PMO, user support team, and vendor application developers to implement ongoing system enhancements.

Hardware/Software: MS Office Suite

Timeframe: August 2007 to August 2008
Company Name: California, Department of Alcohol and Drug Programs (ADP), CalOMS Tx Web Based Training (WBT) System
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: The is a custom-developed web-based training application that focused on the delivery of timely and cost effective training to CalOMS Tx users in 58 counties and 70+ direct service providers across California. The application provided access to application training materials and policy information to all CalOMS Tx system users.

On this project, Mr. Ruddy lead a team of business and technical staff to develop business and functional requirements; create online training materials; and design, develop, and implement the system. The project also required the development of a web-based content management tool that allowed business users to self-manage training content without requiring support of technical staff.

Hardware/Software: MS Office Suite

Timeframe: January 2007 to August 2007
Company Name: California, Department of Justice (DOJ), Hawkins Data Center (HDC), Automated Criminal History System (ACHS)
Company Location: Sacramento, CA
Position Title: Procurement Support / Assistant Project Manager

Project Description: ACHS stores and provides electronic access to all authorized Local, State, and Federal criminal justice agencies in California. ACHS retains demographic, physical attribute and crime related information on criminals, arrestees, or job applicants requiring a criminal history check. For this project, DOJ needed to migrate ACHS from its legacy mainframe environment to an Oracle platform.

On this project, Mr. Ruddy provided procurement support to DOJ, which included developing functional, technical, administrative, and process requirements. Mr. Ruddy worked with DOJ and Department of Governmental Systems (DGS) to develop and release the vendor Request for Proposal (RFP) and associated evaluation plan. Following vendor selection, Mr. Ruddy served as the Assistant Project Manager, supporting the DOJ management team in oversight and management of the selected vendor.

Hardware/Software: MS Office Suite

Timeframe: August 2005 to December 2006
Company Name: California, Department of Child Support Services (DCSS), Interim Federal Case Registry (IFCR)
Company Location: Sacramento, CA
Position Title: System Maintenance and Operations Manager

Project Description: System linked 58 local child support agencies (LCSAs) in California with a national database of Title IV-D case information, and supported California's efforts to enforce child support orders on non-custodial parents located outside California. The IFCR system processed more than 60 million child support records annually. The IFCR System Maintenance and Operations was an integral part of the $2 billion California Child Support Automated System (CCSAS) project and was responsible for maintaining the link between California's LCSAs, the State, and Federal Child Support data repositories during this time.

On this project, Mr. Ruddy lead a team of business and technical staff responsible for all aspects of the IFCR system maintenance and operations, which included data processing and exchange with County and Federal Child Support systems. The project team was also responsible for all data mapping, interface and database management, testing, and help desk support.

Hardware/Software: MS Office Suite

Timeframe: March 2004 to July 2005
Company Name: California, KIDZ Child Support, Joint Powers Authority (JPA), KIDZ Child Support System
Company Location: Sacramento, CA
Position Title: System Maintenance and Operations Manager

Project Description: KIDZ was the production child support system for 10 local child support agencies (LCSAs) in California. The KIDZ application supported case management and financial transactions for 1,450 end users managing a combined caseload of 241,000 cases.

On this project, Mr. Ruddy led a project team responsible for all aspects of the IFCR system maintenance and operations. This included database management, network administration; testing; help desk and user support; and data analysis and reporting. Mr. Ruddy also managed the on-site support team responsible for the conversion to KIDZ from their legacy applications, as well as their conversion from KIDZ to the CASES system. The KIDZ system was retired as part of the State migration to the statewide California Child Support Automated Child System (CCSAS).

Hardware/Software: MS Office Suite

Timeframe: March 2003 to January 2004
Company Name: California Department of Justice (DOJ), Administrative Services Division (ASD), Administrative Services Division, Business Process and Technology Assessment
Company Location: Sacramento, CA
Position Title: Project Manager

Position Title: The Department of Justice (DOJ), Administrative Services Division (ASD) is responsible for maintaining all human resource information for all DOJ employees within California. For this project, ASD was looking to improve business processes by developing an automation roadmap for manual “back office” functions.

On this project, Mr. Ruddy led a team responsible for conducting an “As-Is” and “To-Be” assessment of all business processes within ASD. The team created detailed process maps and findings documentation, and established a short and long-term automation roadmap strategy for the agency. This required the development of detailed system and process flows for Accounting, Budget, Procurement and Human Resources functions; facilitating work sessions and staff training; identifying short and long-term improvement opportunities; and developing a transition strategy and recommendations presented to the Assistant Attorney General.

Hardware/Software: MS Office Suite

Timeframe: December 2002 to February 2003
Company Name: California, KIDZ Child Support, Joint Powers Authority (JPA), KIDZ Child Support System
Company Location: Sacramento, CA
Position Title: System Test Consultant

Project Description: KIDZ was the production child support system for ten local child support agencies (LCSAs) in California. The KIDZ application supported case management and financial transactions for 1450 end users managing a combined caseload of 241,000 cases. KIDZ was in operation from 1992 to 2005, when it was retired as part of the State migration to the statewide California Child Support Automated Child System (CCSAS).

On this project, Mr. Ruddy’s responsibilities included evaluated system and regression test scripts; documenting system errors; technical writing (documenting defects, proposed system fixes, and design enhancements); and monitoring system releases.

Hardware/Software: MS Office Suite

Timeframe: June 2002 to November 2002
Company Name: California Department of Technology Services, SAWS Branch, CalWIN County Readiness Assessment
Company Location: Sacramento, CA
Position Title: Oversight Consultant

Project Description: CalWIN is a Title IV-A case management and eligibility determination system that supported 18 counties and 40% of California's total caseload during this period. This project provided State oversight support for the migration of legacy County Title IV-A (welfare) agencies to the CalWIN and C-IV systems.

On this project, Mr. Ruddy was responsible for assessing the implementation readiness of two pilot counties in the areas of technical infrastructure, application infrastructure, conversion, interfaces, business process redesign, training, implementation support, and project management. Mr. Ruddy was responsible for reporting on implementation readiness to the State management team, and advising on risks and mitigation strategies related to the ability of pilot counties to go-live on schedule.

Hardware/Software: MS Office Suite

Timeframe: May 2000 to June 2002
Company Name: California Department of Child Support Services (DCSS), Orange, Yolo, and Yuba County Child Support Conversion Projects
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: This project converted Orange, Yolo, and Yuba County local child support agency (LCSA) legacy system data to the KIDZ and ARS child support systems. Interim migration efforts were an integral part of the $2 billion California Child Support Automated System (CCSAS) project.

On this project, Mr. Ruddy lead a team of business and technical staff responsible the data mapping, automated extraction program development, data extraction, and post-conversion County support. This project resulted in the successful migration of more than 125,000 active child support cases, 36 million records, and $1.2 billion in financial accounts. In all instances, more than 99+% of all cases were successfully migrated through the automated process. As Orange County was among the last California counties to convert, timely completion of this project was an essential step in California avoiding $250 million in Federal penalties for non-compliance.

Hardware/Software: MS Office Suite

Timeframe: August 1999 to April 2000
Company Name: California, Statewide Automated Welfare Systems (ISAWS), Welfare-to-Work (WTW) Application, System Implementation Project
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: ISAWS was a Title IV-A case management and eligibility determination system supporting 35 counties in California. ISAWS was the first multi-county Title IV-A system in California and continues to service more than 5000 end users with a combined caseload in excess of 335,000 cases. The WTW project development and implementation of a Welfare-to-Work case management subsystem for the 35 ISAWS counties. The team was responsible application development activities including requirements, coding, testing, configuration, implementation, training and go-live support for all 35 counties.

On this project, Mr. Ruddy oversaw a team of business and technical staff responsible for implementation planning for WTS. This included data conversion, change management, quality assurance, site preparation, training and communication plans. As Project Manager, Mr. Ruddy was responsible for the development and roll out of end user documentation; he managed work plans and roll-out schedules; and facilitated joint-County/State planning and work sessions.

Hardware/Software: MS Office Suite

Timeframe: August 1999 to April 2000
Company Name: California, Statewide Automated Welfare Systems (ISAWS), ISAWS Business Process Improvement Project
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: ISAWS was a Title IV-A case management and eligibility determination system supporting 35 counties in California. ISAWS was the first multi-county Title IV-A system in California and continues to service more than 5000 end users with a combined caseload in excess of 335,000 cases. The ISAWS Process Improvement Project was focused on development and implementation of a new operations structure.

On this project, Mr. Ruddy managed a joint team of State and Vendor staff, responsible for establishing business process improvements throughout the organization. This included design and implementation of a matrix management model for the organization; identifying staff development opportunities; and establishing a revised communication plan for the organization. To support this effort, Mr. Ruddy facilitated strategic planning work sessions with staff and management; he developed the organizational strategic plan, policies and documentation; and he oversaw the implementation of new processes.

Hardware/Software: MS Office Suite

Timeframe: August 1999 to April 2000
Company Name: California, Statewide Automated Welfare Systems (ISAWS), ISAWS Technical Assessment Project
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: ISAWS is a Title IV-A case management and eligibility determination system supporting 35 counties in California. ISAWS was the first multi-county Title IV-A system in California and continues to service more than 5000 end users with a combined caseload in excess of 335,000 cases.

On this project, Mr. Ruddy managed a joint team of State and Vendor staff, responsible for redesigning system processing logic in order to reduce mainframe processing loads during peak periods. The project also evaluated end-user satisfaction with application design functionality. Findings resulted in significant improvements to peak-period processing performance and overall CPU utilization.

Mr. Ruddy managed team of five business and technical staff; he review historical system performance data and design documentation; he facilitated workgroups with technical teams and County end-users to identify system and process improvement opportunities; and he presented proposed technical design changes.

Hardware/Software: MS Office Suite

Timeframe: June 1997 to January 1998
Company Name: Arizona Department of Health Services, Maricopa County Bureau of Health Services Reorganization
Company Location: Maricopa County, AZ
Position Title: Business Analyst

Project Description: This project focused on an agency-wide reorganization of the Maricopa County Bureau of Health Services (BHS). The project team provided strategic planning services, with a specific focus on organizational restructuring, fiscal planning, and leadership direction.

Responsibilities:Mr. In his On this project, Mr. Ruddy's analyzed internal and external service delivery processes and expenditures; recommended cost reduction measures for the agency; and assisted in the preparation of a $165 million budget presented to the State legislature by the BHS CIO.

Hardware/Software: MS Office Suite

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

California Polytechnic State University (CalPoly), San Luis Obispo, CA
Masters, City and Regional Planning (MCRP)
June 1997

University of California, Santa Barbara, CA
Bachelor of Arts, Political Science, Concentration in Public Service
December 1993

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Institute (PMI), Project Management Professional (PMP)
July 2005, PMP #235228

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Microsoft Project Suite

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name: Ms. Laura Klein
Agency: California Department of Corrections (CDCR), Parole Division (Note: currently employed with California Franchise Tax Board)
Phone: (916) 284-5441; Fax: n/a
Email: laura.klein@ftb.ca.gov

Name: Ms. Toquyen Collier
Agency: California Department of Health Care Services (DHCS)
Phone: (916) 873-4683; Fax: N/A
Email: toquyen.collier@dhcs.ca.gov

Name: Mr. Dennis Elonka
Agency: Washington Department of Social and Human Services (DSHS)
Phone: (360) 725-1252; Fax: n/a
elonkd@dshs.wa.gov

VII.7 Jonathan Taylor, CCSAS & Legacy Transition SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***Y***	**Subcontractor:**	***No***

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jonathan Taylor***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.	***CCSAS & Legacy Transition***		
# of Years in Classification:	***11***	**# of Years with Firm:**	***11***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Taylor, certified project manager with over 25 years' IT management experience, including extensive management of business process and systems integration projects. Over the last sixteen years this has included the project management of multi-million dollar complex global systems implementation projects for State departments and Fortune 500 companies that have involved process re-engineering, technology integration, and organizational change. Managed 100+ multi-disciplinary project teams staffed with client, contract, systems integrator, and other consulting personnel.

His areas of expertise include most major structured systems development lifecycle methodologies and project management standards; development of detailed project plans and schedules; leading teams of IT technical and business staff; project management assistance such as issue identification and facilitation of decisions with various stakeholders; change management and communications planning; organizational change management; monitoring and controlling project progress; program and project planning; resource planning and acquisition; guiding and mentoring staff; technology assessments and selection; tool and vendor selection support; risk and issue management; cost benefit and feasibility studies; project initiation and document reviews; and status reporting to all levels.

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.

Timeframe: 7/2006 to 7/2015
Company Name: California Department of Corrections and Rehabilitation (CDCR), Strategic Offender Management System (SOMS) Project
Company Location: Sacramento, CA
Position Title: Technical Project Manager (TPM)

Project Description: Mr. Taylor managed the procurement and implementation of an integrated agency wide centralized offender management system that will manage all aspects of adult offender management from reception to discharge including parole operations. The systems will have over 45,000 users statewide.

His responsibilities included the project management of all aspects of the project throughout the full project lifecycle from procurement phase through post implementation evaluation and review. Major activities included program and project planning; developing, implementing and monitoring all of the project management processes such as risk, issue, scope, and budget management; project initiation including document reviews and knowledge transfer to new team members and vendors; and organizational change management.

Hardware/Software: MS Office Suite

Timeframe: 9/2007 – 3/2008
Company Name: California Department of Child Support Services (DCSS), Federal Deficit Reduction Act (FDRA) Implementation (CCSAS Project)
Company Location: Sacramento, CA
Position Title: Senior Project Manager

Project Description: Mr. Taylor managed the implementation of the FDRA within the Department of Child Support Services. He analyzed legislation and associated federal regulations and communications, project managing the assessment of the impact of various options to be considered, determined data requirements to quantify impacts, and assimilated data to report on impacts. Mr. Taylor recommended solutions and managed the change associated with implementing the changes including initiating systems change requests for impacted systems; coordinating policy, process, and organizational change; facilitating impact assessments teams; reviewing design and data conversion requirements and design; integrating and implementing change; and progress and status reporting on implementation projects including associated cost controls, issues, risks and schedule maintenance

Hardware/Software: MS Office Suite

Timeframe: 7/2006 – 9/2007
Company Name: California Department of Child Support Services (DCSS), Consortium Project Lead (CCSAS Project)
Company Location: Sacramento, CA
Position Title: Lead Consortium Project Lead, Senior Project Manager

Project Description: The California Child Support Automated System, Child Support Enforcement (CCSAS/CSE) is an automated child support system being developed for use by all 58 Local Child Support Agencies (LCSAs) in the state of California.

As a Senior Project Manager, Mr. Taylor assisted DCSS manage the transition from six Consortia child support applications to CCSAS, the single statewide child support solution. Provided project management, coordination, facilitation and communication of child support enforcement consortia and consortia systems to support DCSS objectives and integration with the CCSAS project.

As Lead Consortia Project Lead his responsibilities included the project management of a team that; directed maintenance, operations, and enhancement efforts, and provided leadership and governance over the Local Child Support Agency and consortia level conversion activities. The CPLs provided direction to the existing Consortia Managers and their staff to achieve DCSS Program and CCSAS Objectives. The CPLs were responsible for standardizing the scope of consortia services, controlling consortia costs, scheduling enhancements and conversion activities, maintaining quality, ensuring effective communication, issue and risk management, managing consortia resource utilization, (staff levels and performance), and procuring necessary good and services (contracts and service agreements). A chief goal of the CPLs was to develop plans and strategies to control M&O costs and achieve near term DCSS objectives, while effectively transitioning the consortia to CCSAS.

Hardware/Software: MS Office Suite

Timeframe: 7/2003 – 7/2006
Company Name: Franchise Tax Board (FTB) and California Department of Child Support Services (DCSS)
Company Location: Sacramento, CA
Position Title: Senior Project Manager

Project Description: Established and managed the CCSAS Project's Project Management Office (PMO). As the manager of the CCSAS PMO responsibilities included the establishment and management the CCSAS Project Management Office (PMO) comprised of 12 State and Northrop Grumman project managers to provide project management services for the CCSAS projects. Project management processes established and managed throughout the project included; integration management; risk management; scope and change control management; schedule / WBS management; communications management; issue management; requirements management; problem management; configuration and document management; staff management; cost management; help desk processes; progress and status reporting; and phase closeout and lessons learned.

Hardware/Software: MS Office Suite

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

MS, Computer Applications in Management Systems, Cranfield Institute of Science & Technology, Bedford, UK, 1989

BS, Marine Biology and Zoology, Honors, Bangor University, Bangor, North Wales, 1989

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

PMI PMP, December 2001
ITIL Fundamentals June 2012

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

MS Office Suite
MS Project

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Leisa Rackelmann
Director SOMS Project, CDCR
Phone: (916) 358-2201; Fax: n/a
Leisa.Rackelmann@cdcr.ca.gov

Jamie Murray, Director
Child Support Services Sutter County
Phone: (530) 822-7338 ext. 216; Fax: n/a
JMurray@co.sutter.ca.us

Peter Wtulich,
CIO and Vice President Pacific Coast Producers
Phone: (209-367-8800) Fax: n/a
pwtulich@pcoastp.com

VII.8 Paul Wertheim, CCSAS & Legacy Transition SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Paul Wertheim***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.	***CCSAS & Legacy Transition Team***		
# of Years in Classification:	***10***	**# of Years with Firm:**	***6***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Wertheim is a project manager with extensive project management and delivery experience spanning multiple teams, locations, and industries. He has been involved with large, complex software projects exceeding $400M in investment and managed teams of 80+ people. His recent focus has been as a trusted advisor and project manager providing independent verification and validation (IV&V) and project management services for more than 10 IV&V projects. Mr. Wertheim helped develop the CCSAS system in California and has intimate knowledge of the technical architecture and technologies used in the solution. This includes expert knowledge with secure internet applications, conducting phased implementations, and executing automated testing.

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.

Timeframe: 08/2005 to 08/2006
Company Name: California Department of Child Support Services, California Child Support Automation System (CCSAS)
Company Location: Rancho Cordova, CA
Position Title: Developer

Project Description: DCSS successfully completed 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) combines statewide case management capabilities with centralized child support collection and payment processing through the State Disbursement Unit (SDU).

- Designed and implemented several complex modules using a three-tiered architecture involving event scheduling, notifications, user profile security and management to create a secure internet application, reference data management, and interfacing with 3rd party data providers. These modules required detailed knowledge of the Title IV-D regulations and child support business processes.
- Supported proof of concept and documentation development for the Spring Batch framework which was developed in support of this project.
- Conducted automated testing using JUnit and Loadrunner.

Hardware/Software: Java/J2EE, Rational Suite (ClearCase, ClearQuest, Rational Application Developer), WebSphere, Web Services (SOAP, WSDL, JAXB), automated testing tools (JUnit, Loadrunner), Tomcat, XML, XSD, XQuery, SOAP UI, Spring MVC framework, Spring Batch, Hibernate, Struts, Maven

Timeframe: 06/2016 to current
Company Name: Wyoming Department of Workforce Services, WyCAN Unemployment Insurance Modernization Project
Company Location: Casper, WY and Phoenix, AZ
Position Title: Consortium Project Manager

Project Description: The State of Wyoming is modernizing their legacy Unemployment Insurance and Workers' Compensation Insurance systems with a single integrated, modern, multi-tenant UI system. The System will be hosted in the cloud in a Software as a Service (SaaS) model. The project is a phased implementation, with Phase 1 covering Benefits functionality (go-live in June 2018) and Phase 2 covering Tax and Workers' Compensation Insurance functionality (go-live in June 2019).

PCG provides a variety of services to Wyoming's Department of Workforce Services, including project management, contract management, testing support, quality assurance (QA), independent verification and validation (IV&V), facilities management and office administration.

- Manage all aspects of the six-person Project Management Office
- Procure and manage development facility for 80+ contractor staff, including computer equipment, software, and help desk support
- Inform key stakeholders of project progress
- Develop strategies for working in a multi-tenant environment which will be shared by up to six states
- Manage resources spread across multiple states
- Maintain adherence to an aggressive, compressed schedule
- Review technical writing and ensure Quality Assurance processes are implemented across deliverables
- Oversee IV&V efforts across all project areas including strict security requirements (FTI, PII, etc.)

Hardware/Software: Java, Microsoft Azure Government Cloud, Subversion, JBoss Fuse, Kofax, JScape, Drools, Struts, automated testing tools (JUnit, Selenium)

Timeframe: 02/2017 to current (through 02/2019)
Company Name: US Virgin Islands Department of Human Services, Eligibility System IV&V Project
Company Location: St. Thomas, USVI
Position Title: IV&V Project Manager

Project Description: The Virgin Islands Benefits Eligibility System (VIBES) is an integrated eligibility and enrollment (IE&E) solution which provides a streamlined approach for integrating multiple human services assistance programs. VIBES will provide a secure internet application for the public to use as well as a private portal function for case workers. VIBES is a phased implementation consisting of 3 major releases.

PCG provides IV&V services and delivers monthly reports to DHS and their federal partners. The assessment categories include project management, configuration management, project quality, requirements management, software development, system and acceptance testing, system interoperability, data management, and training.

- Maintain adherence to an aggressive, compressed schedule
- Oversee IV&V efforts across all project areas
- Review key project documents and activities such as design documentation, system and user acceptance test plans, procedures, and results, training plans and execution, data cleansing and conversion plans and activities.
- Attest to test efforts between the territory and the Federal Data Services Hub (FDSH)
- Evaluate system readiness and participate in gate reviews and go/no-go assessments

Hardware/Software: Curam, BizTalk, Azure Government Cloud

Timeframe: 01/2013 to 12/2016
Company Name: Hawaii Department of Human Services, Integrated Eligibility System – KOLEA Project
Company Location: Honolulu, HI
Position Title: IV&V Program Manager
Project Description: The Hawaii Department of Human Services (DHS) replaced its legacy Medicaid eligibility system with a Commercial Off-The-Shelf (COTS) solution to modernize its system and support the Affordable Care Act requirements. The project, known as the Kauhale (Community) Online Eligibility Assistance (KOLEA) system, was a phased implementation with 5 major releases into production and supports over 300,000 beneficiaries in Hawaii.
Mr. Wertheim led a 15+ person team responsible for providing independent oversight of all phases of the project. Specific activities included:

- Weekly meetings with client and vendor leadership to discuss key findings and risks as well as determine upcoming assessment areas
- Developing and maintaining a verification and validation plan (VVP)
- Defining and managing the activities associated with monthly assessments covering the areas of contractor project management, requirements management, quality management, the operating environment, design and development, testing, data management, and security
- Authoring and presenting the Monthly Findings Report to DHS stakeholders, vendor management and CMS
- Coordinating deliverable reviews among DHS and IV&V staff of over 200 deliverables and technical artifacts
- Management of 3 Independent Security Assessments which analyzed the project's adherence to over 800 security controls as specified by the National Institute of Standards and Technology (NIST)
- Coordinating attestations of state integration with the Federal Data Services Hub and payment error rate measurement (PERM)
- Management of independent testing of 23 CMS Blueprint Scenarios as a supplement to system and user acceptance tests
- Development of Implementation Advanced Planning Documents (IAPDs) to help DHS acquire and retain funding associated with system modernization
- Participating in project change control board meetings to provide insight and recommendations concerning proposed changes

Hardware/Software: .Net, Oracle SOA Suite, Microsoft Azure Cloud, Oracle 11g

Timeframe: 06/2011 to 12/2012
Company Name: California Employment Development Department (EDD) DIA, CCR, ABP, SCDB projects
Company Location: Sacramento, CA
Position Title: IV&V Technical Architect

Project Description: PCG provided assistance for 4 projects within EDD's portfolio which were: Disability Insurance Automation (DIA), Continued Claims Redesign (CCR), Alternate Base Period (ABP), and Single Client Database (SCDB). Collectively these projects represent a major overhaul of the State's

Unemployment Insurance program and apply an enterprise approach to modernizing associated processes and technologies. These automation projects will enhance service delivery systems, improve access to services, increase the integrity of the UI program and build a more flexible and responsive infrastructure to operate the UI program.

Provided independent verification and validation services for 4 projects spanning 3 vendors managed by EDD. Focused on deep technical deliverable review, system and software architecture, enterprise integration best practices, and traceability.

- Reviewed and gave feedback on over 6000 pages of technical deliverables concentrated on system detailed design, interface design, high-level system architecture, and requirements adherence
- Met with key project stakeholders to establish context and present findings
- Analyzed performance testing methodology and metrics
- Conducted critical risk assessment of all interfaces for the 4 projects and provided recommendations for risk mitigation
- Evaluated the proposed system concept for the CCR and DIA projects for adherence to industry standards, cohesion across the organization, and satisfaction of associated requirements
- Participated in data cleansing and data conversion discussions for moving millions of records from legacy to modernized systems.

Hardware/Software: IBM DB2, .Net, Microsoft BizTalk, SOA Software, Loadrunner, Selenium, SOAP UI

Timeframe: 08/2007 to 08/2009
Company Name: Warner Brothers, Digital End-to-End (DETE) Solution
Company Location: Burbank, CA
Position Title: Solution Architect
Project Description: Digital End-to-End (DETE) was an Emmy-award winning digital transformation project to change how the client managed and distributed content worldwide via high-capacity and high-efficiency networks. Responsible for building the core file transfer solution by integrating best-of-breed vendor products and managed the database access and storage for 50+ developers. Key Results:

- Collaborated with industry leaders in content management and distribution to conduct proof of concepts and establish the most efficient way to get large (500 GB+) content files from one location to another.
- Architected a monitoring and notification service using event messaging that fed back to the larger business process flow, enabling automated transfers that reacted to network conditions and throttled content delivery based on business priority.

Hardware/Software: Java, WebSphere, Web Services (SOAP, WSDL, JAXB), Tomcat, XML, XSD, XQuery, SOAP UI, Spring MVC framework, Hibernate, Maven, Subversion, JDeveloper IDE, Aspera, Signiant, Oracle 10g

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Clark University, Worcester, MA
MA, Master of Business Administration (MBA)
May 2017

University of California, San Diego
Bachelor of Science, Computer Science
June 2005

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Eclipse IV&V Professional, 2016
Information Technology Infrastructure Library (ITIL) Foundation Certificate v3, 2012
Accenture Technology Architect, 2009

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Software: Java, J2EE, Rational Suite (ClearCase, ClearQuest, Rational Application Developer), WebSphere, Web Services (SOAP, WSDL, JAXB), automated testing tools (JUnit, Loadrunner, Selenium), Tomcat, XML, XSD, XQuery, SOAP UI, Spring MVC framework, Spring Batch, Hibernate, Struts, Maven, Subversion, Eclipse IDE, JDeveloper IDE, FileNet, Oracle SOA Suite (OSB, BPEL PM, WebLogic), OpenLink Endur, HP Quality Center, HP ALM, PL/SQL, SQL, Perl, Aspera, Signiant, .Net, MS BizTalk, SOA Software, Erwin Data Modeler, Perforce

Databases: DB2, Oracle 10g and 11g, MS SQL Server 2008

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Wendy Tyson
Wyoming Department of Workforce Services
Phone: (307) 235-3201; Fax: n/a
wendy.tyson@wyo.gov

Richard Lacombe
Virgin Islands Department of Human Services
Phone: (340) 774-0930; Fax: n/a
Email: Richard.lacombe@dhs.vi.gov

Randy Cha
Hawaii Department of Human Services
Phone: (808) 692-7951; Fax: n/a
rchau@medicaid.dhs.state.hi.us

Yvette Jansen
California Employment Development Department
Phone: (916) 653-4292; Fax: n/a
yvette.janssen@edd.ca.gov

VII.9 Maribeth Pollard, CCSAS & Legacy Transition SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Maribeth Pollard***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***CCSAS and Legacy Transition Team***	
# of Years in Classification:	***2.2***	**# of Years with Firm:**	***2.2***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE ***Information should include a brief summary of the proposed individual's professional experience.***

Ms. Pollard brings over eighteen years of experience working on large data and electronic information systems projects. Ms. Pollard has participated in all aspects of the system development life cycle, in a wide range of technical, business, leadership and oversight positions. During this time, Ms. Pollard has accumulated more than fifteen years of experience working with California and Arizona health and human services agencies, including IV-A, IV-E, IV-D, and Child Care and Protective Services.

Ms. Pollard's has over six years of extensive knowledge of the business and technical aspects of Child Support systems from her work with SACCS, ARS, CASES, KIDZ, IDB-R and CCSAS systems. She has over three years of California Welfare Consortium Cal-WIN Experience. Ms. Pollard's experience is rounded out with her extensive experience with the Arizona Welfare Technical Eligibility Systems (AZTECS). Ms. Pollard also has experience with California's Transpiration (Caltrans) Implementation Maintenance Management System (IMMS) system as well as Blue Shields Medical Records system.

Most recently, Ms. Pollard served in a Project Manager capacity for the MEDS Modernization Feasibility effort and Covered California from organizational stand up through the first open enrollment period. Areas of focus included examining system structure and bridging agency enterprise architecture and system goals, coordinating the development of system changes and readiness, Lead and Opportunity Management, Oracle RightNow Customer Relationship Management (CRM) system operation enhancements, Business Process Management (BPM) software implementation, along with enrollment effort special 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.

Timeframe: 11/2016 to present
Company Name: Office of Systems Integration, MEDS Modernization Stage 2 Alternative Analysis (S2AA) Planning
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: Project Management involved performing a systems alternative analysis for California's Medi-Cal database (MEDS) in order to modernize its platform from a VSAM/DB2 and mainframe storage into a Cloud based solution. Effort involved performing review of existing legacy systems, holding subject matter expert (SME) sessions with end users through technical, database, and enterprise architecture teams, defining mid-level requirements, performing market research for various cloud based products/service solutions (e.g., database, API, rules engine, identity management), examining conversion strategies, and recommending a collaborative solution and defining a modular/Agile approach for implementation.

Team included pulling in various PCG TC experts for insight into key areas of focus, performing research, documenting legacy business constraints, providing weekly and monthly presentations to project State directors and quarterly presentations to the Executive Directors of DHCS and CDSS.

Hardware/Software: MS Office Suite

Timeframe: 7/2013 to present
Company Name: California Health Benefits Exchange, Covered California Business and Operations Planning
Company Location: Sacramento, CA
Position Title: Project Manager/Operations Support

Project Description: The Project Management Team provides general project management support throughout all lifecycle including initiation, procurement, execution and control for various projects in all areas of the organization through stand up of the first year of open enrollment including Plan Management, Marketing, Eligibility and Enrollment, Policy Development and Service Center Operations, working closely with the IT vendors, business analysts, business owners and executive team.

Ms. Pollard assists in several operational areas, including Infrastructure Project Team, Project Management activities, Covered CA Information Technology (CC IT), Global Cleanup Management & Coordination, 1095 Initial Implementation Management, Appeals, Marketing, Service Center Operations, and External Affairs Escalations.

Ms. Pollard has contributed to multiple efforts at Covered CA. Among these efforts, she has provided ongoing Project Management support and specifically assisted the Infrastructure Project Team with identification and prioritization of program projects and initiatives to be pursued within fiscal years 15/16, 16/17, and planning for 17/18. She assisted the Infrastructure Project Team with implementing a governance model for Covered CA to effectuate operational and technology changes through an Infrastructure Steering Committee. Ms. Pollard assisted CC IT with project management services and coordination of key projects/initiatives. Ms. Pollard assisted the Eligibility & Enrollment Division with the examination of the consumer appeals process. This included meeting with managers/supervisors/staff and depicting the 'As-Is' process in Visio flows, along with strategizing identified gaps and streamline opportunities.

Ms. Pollard Supported both strategic and tactical steps necessary to stand up the California Exchange across multiple business areas. She Implemented Infrastructure Steering Committee, and contributed to Project Team structure. She Developed work tracking tools, External Affairs tracking, and Knowledge Center.

Hardware/Software: MS Office Suite

Timeframe: 7/2009 to 10/2013
Company Name: California Department of Corrections and Rehabilitation, Strategic Offender Management (SOMS) Project
Company Location: Sacramento, CA
Position Title: Project Manager/Lead Senior Analyst

Project Description: Ms. Pollard provided testing management and oversight of Vendor and User Acceptance Testing (UAT) of CDCR's Agency-wide Strategic Offender Management System (SOMS) Project.

Ms. Pollard worked with CDCR Management in the planning, preparation, and execution of User Acceptance Testing. This included planning and interacting Subject Matter Expert (SME) participation, along with tracking UAT execution outcomes and defect assessments. Duties also included initial assessment of Vendor testing activities, such as Component Integration, Consolidated Integration, Interface/Bridges, System and Software Testing, and Performance testing. Responsibilities include preparing assessment and UAT Plans and outcomes documents, along with requirements and design validation. Ms. Pollard played an instrumental role in go-live support for Headquarter operations, coordinating and performing issue triage and bridge line customer support.

Ms. Pollard also utilized tracking tools for planned, actual and predicted UAT performance and outcomes. She coordinated business process inventory in support of UAT.

Hardware/Software: MS Office Suite

Timeframe: 3/2009 - 7/2009
Company Name: California Emergency Management Agency (CalEMA), Agency Wide Document Imaging and Management Project - Feasibility Study Report (FSR)
Company Location: Sacramento, CA
Position Title: Lead Senior Analyst

Project Description: Ms. Pollard conducted a feasibility Study to examine the CalEMA emergency management information system for document imaging for stakeholders, determined needs and expectations of existing technology, documented deficiencies of the existing system and developed recommendations for a replacement system.

As Senior Analyst, Ms. Pollard worked on all phases of the Feasibility Study Report; Data Analysis, Stakeholder Interviews, Business Case Definition, Risk and High Level Requirements, Market Research, Proposed Solution Analysis, Economic Analysis Worksheet development, and FSR development.

Ms. Pollard also developed To-Be vision for the document imaging system. She Coordinated teams for requirements and coordinated business process inventory in support of the FSR.

Hardware/Software: MS Office Suite

Timeframe: 12/2008 to 3/2009
Company Name: California Health and Human Services Data Center, Statewide Automated Welfare Systems, Office of Systems Integration (OSI), Project Assessments and Review
Company Location: Sacramento, CA
Position Title: Lead Senior Analyst

Project Description: Ms. Pollard provided project consultant services for the OSI-SAWS to perform project assessments and reviews of the SAWS consortia systems. The SAWS consortia systems provide automation services which support of California public assistance programs for all 58 California counties. Deliverables included maintenance and operations (M&O) reviews for the consortia systems and quantitative analysis relative to size and effort of system changes.

Hardware/Software: MS Office Suite

Timeframe: 08/2008—11/2008
Company Name: California Emergency Management Agency (CalEMA), Response Information Management System (RIMS) Feasibility Study Report (FSR)
Company Location: Sacramento, CA
Lead Senior Analyst

Project Description: Ms. Pollard conducted a feasibility Study to examine the CalEMA emergency management information system for stakeholders, determined needs and expectations of existing technology, documented deficiencies of the existing system and developed recommendations for a replacement system.

As Senior Business Analyst, she worked on all phases of the Feasibility Study Report; Data Analysis, Stakeholder Interviews, Business Case Definition, Risk and High Level Requirements, Market Research, Proposed Solution Analysis, Economic Analysis Worksheet development, and FSR development.

Ms. Pollard also conducted review workshops. She worked with key program users and staff to document business process to be incorporated into the FSR

Hardware/Software: MS Office Suite

Timeframe: 10/2006 to 7/2008
Company Name: California Department of Child Support Services, Administrative Services Branch (ASB) Business Process Reassessment Project
Company Location: Sacramento, CA
Position Title: Project Manager

Project Description: While working on the BPA project, Ms. Pollard provided support to the Accounting Services Branch (ASB) during the transition from Local Child Support office administration to centralized financial management for statewide Child Support Services. The project created an inventory of ASB Financial Accounting business functions and processes to be analyzed, prepared narrative flows, and recommend process improvements specific tasks included defining a list of process inventories, defining 'As-Is' flows and narratives, assessing gap analysis, and defining 'To-Be' flows and narratives.

Ms. Pollard also developed To-Be vision for the business processes. She coordinated business process assessment teams. She also developed business process inventories, As-Is and To-Be flows and narratives, and recommended process improvements.

Hardware/Software: MS Office Suite

Timeframe: 02/2006 to 10/2006
Company Name: California Department of Child Support Services, Maintenance and Operations
Company Location: Sacramento, CA
Position Title: Senior Business Systems Analyst

Project Description: While working on the maintenance and operation, Ms. Pollard provided support to various areas within the Child Support Services Maintenance Branch performing various activities including; Data Verification and Validation resources for the Case Financial Worker (CFW) Support Team and Technical Analyst support for the technical team. Duties included:

- Researching various Child Support Collection and Distribution issues submitted to CCSAS Business Problems regarding financial issues
- Updating the CFW Support Website bulletin/area as needed
- Drafting and updating 'Alerts' and 'Bulletins' as needed for the CFW Support Team
- Performing Business Process Analysis (BPA) on problem and solution impacts
- Work with the development team and user support staff to research business and system issues
- Develop business requirements and technical documentation
- Develop system and Business Process Analysis and flow documentation
- Monitor and provide recommendations for Quality Assurance / Quality Control processes

Hardware/Software: MS Office Suite

Timeframe: 06/2000 to 06/2002 (2 years)
Company Name: California Department of Child Support Services, Conversion of County systems to ARS and KIDS
Company Location: Sacramento, CA
Position Title: Senior Systems Analyst

Project Description: Ms. Pollard provided Systems Analyst Support to two projects of converting Orange County's Child Support and Financial system to Los Angeles' ARS Child Support System and Yolo/Yuba County's child support system to the KIDZ consortium. Responsibilities included:

- Worked as part of the development team throughout design, development, testing and implementation of conversion extract program (namely IEEE System Development Lifecycle standards)
- Provided analyst support through facilitation of county data mapping sessions
- Developed EDT (Element Data Testing) scripts to validate mapping derivations
- Coordinated county efforts throughout the conversion process
- Worked with State data conversion support staff to ensure that data extraction programs were modified to address editing and validation errors

Hardware/Software: MS Office Suite

Timeframe: 02/1996 to 04/1998
Company Name: California Department of Child Support Services, State Automated Child Support System (SACSS)
Company Location: Sacramento, CA
Senior Business/Systems Analyst

Project Description: Ms. Pollard provided Business/Systems Analyst Support for California's SACSS project in converting county run child support systems to an automated statewide system. Responsibilities included:

- Supported development, design, documentation, conversion, implementation, and on-site support
- Provided business process transition support to counties preparing for implementation of SACSS
- Provided problem resolution support, which required extensive reviews and development of functional requirements, code reviews, and business process reviews

Hardware/Software: MS Office Suite

Timeframe: 01/1987 to 01/1996
Company Name: Arizona Department of Economic Security, State Automated Child Support System (SACSS)
Company Location: Phoenix, AZ
Position Title: Lead Management Analyst/Manager

Project Description: As Lead Management Analyst/Manager, Ms. Pollard was responsible for the following:

- Management of the Child Care Management System. This included managing staff and teams in charge of the automated Help Desk, Training, and Application Maintenance
- Work as a Lead Analyst for the AZTECS (Arizona Technical Eligibility Computer System) help desk. Worked through system development life cycle on coordinated changes as well as led Joint Application Design sessions
- Supported the conversion of Family Assistance Administration cases (Aid to Family with Dependent Children and Food Stamps) for conversion to the new automated AZTEC system

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of Phoenix – pursing management information systems
In process

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Information Technology Infrastructure Library (ITIL) Foundation
Eclipse IV&V Certification

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

MS Products
Oracle
Cloud
Agile

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Edmand Blagdon
California Department of Correction and Rehabilitation
Project Director
Phone: (916) 233-7326; Fax: n/a
Edmand.blagdon@cdcr.ca.gov

Mary Chaboya
CalWIN, Operations Manager (retired)
Phone: (408) 859-5250; Fax: n/a
Mary.chaboya@gmail.com

Yolanda Richardson
Covered CA
Executive Deputy Chief
Phone: (916) 730-7565; Fax: n/a
richardsonyol@aol.com

Karen Freemyer
California Child Support Services
ASB Director
Phone: (916) 464-5343; Fax: n/a
Karen.freemyers@dcss.ca.gov

VII.10 Kris Marshall, NOMADS & DWSS Environment SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Kris Marshall***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.	***NOMANS and DWSS Team***		
# 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.

Ms. Marshall is a results-driven technology management professional with over 13 years of accomplishments in IT systems, advanced technologies, and business architecture. Ms. Marshall has extensive experience with systems development and integration, successfully fulfilling numerous roles including: project manager, enterprise architect, technical architect, lead technical, business processes/procedures and implementations analyst, quality assurance manager (quality assurance/quality control), and as an independent project oversight consultant (IPOC). She has participated in the implementation of integrated solutions to modernize legacy systems (mainframe technology) through the development of n-tier based solutions (secured internet applications) built from leading-edge technologies. Ms. Marshall also has an extensive background with MITA alignment (as a technical architect for the State of Georgia) as well as with the CMS gate review process having been an integral team member on two IV&V state Marketplace engagements.

Ms. Marshall provides timely reviews and recommendations in the resolution of business and technical problems from both the process improvement and automation standpoints, providing recommendations for meeting customer and legislative demands as well as recommendations for the implementation of self-services models (including mobile user interface development/design). She is a practitioner of Enterprise Architecture, aligning strategic goals and objectives with decisions regarding products and services, partners and suppliers, organization capabilities, and key business processes/procedures and IT initiatives. Adept at guiding technical development and meeting implementation needs, Ms. Marshall provides recommendations for system design and development (specializing in secured internet applications/solutions), overall implementation management, guidance with regards to maintenance and operation of both the legacy and modernized systems, knowledge gap assessment, and resolution of disparate data/systems.

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.

Timeframe: 08/2015 to Present
Company Name: Michigan Department of Health and Human Services (MDHHS)
Company Location: Lansing, MI
Positing Title: Project Manager

Project Description: Project Manager leading a mid-size team of IV&V architecture, MITA, certification, security, and organizational change professionals providing IV&V, technical, validation (testing), oversight of system and user acceptance tests and evaluation assessments/technical writing to ensure first-in-class cloud-based MMIS solution (series secured internet applications offered as services), secondary IT systems and services meet MITA, CMS Certification and client requirements (as well as standards) and are performing to defined design, cost, schedule, and performance specifications/capabilities. Responsible for delivery of technologies, tools, and support to data cleansing and conversion efforts, quality assurance/quality control and operational assessments/technical writing, system and user acceptance tests (as well as integration and performance testing) training plans/initiatives and system readiness/evaluation.

Hardware/Software: Sparx Enterprise Architect and MS Office Suite of Software and Tools

Timeframe: 11/2015 to Present
Company Name: Georgia Department of Community Health / Medicaid Information Technology
Company Location: Atlanta, GA
Position Title: Technical Architect

Project Description: Technical Architect responsible for ensuring the alignment of the State's MMIS Enterprise to the MITA Framework and CMS' intention of MITA advancement, in support of the implementation of true Enterprise Architecture. Participates in a supervisory role with leadership advisory responsibilities and is involved in all efforts geared towards development, delivery and support of MMIS software solutions including technical documentation (technical writing) and system readiness for modules (secure internet applications/solutions). Provides technical and analytical skills and experience, specific but not limited to:

- Identifying the business process/procedure-to-technical needs of the MMIS Enterprise
- Breaking down and assessment of a large-scale MMIS solution into manageable components (modules)
- Provides assessment/evaluation of computer/server equipment and software (receipt, installation, operation, maintenance)
- Working out which IT products to use based on cost benefit analysis and research
- Development of plans, strategies and methodologies in support of MMIS Enterprise
- Development of governance structure, technical group roles and responsibilities and organizational structure of the IT environment
- Producing documents that monitor progress and ensure the quality assurance/quality control of the project
- Advisor to the MMIS Enterprise on managing future IT needs

Hardware/Software: Sparx Enterprise Architect and MS Office Suite of Software and Tools

Timeframe: 02/2012 to 03/2015
Company Name: Nevada DHHS, Division of Welfare and Supportive Services (DWSS)
Company Location: Carson City, NV
Position Title: Quality Assurance Manager & Senior Technical SME

Project Description: Performs technical IV&V planning, system integration, verification and validation, risk/supportability, and effectiveness analyses for the DWSS HCR Eligibility Project. Performs analysis at

all levels of total system product to include: concept, design, test (oversight of system and user acceptance tests), installation—computer equipment and software (receipt, installation, operation, maintenance), system readiness, operation, and maintenance. Ensures the logical and systematic conversion of system requirements into total systems solutions (secured internet applications) that acknowledge technical, schedule, and cost constraints. Performs functional analysis, timeline analysis, detail special studies, requirements allocation, and interface definition studies to validate customer requirements and hardware/software specifications as well as computer equipment and software (receipt, installation, operation, maintenance).

Works in coordination with the Eligibility PM & Quality Manager to assure consistent system quality assurance/quality control by reviewing and validating the creation and implementation of best practice system development and implementation methods by validating processes, training plans, assessing documentation as well as evaluating resource requirements (skill sets, etc.) to assure that system delivery is fit for purpose.

Hardware/Software: IBM SPSS and MS Office Suite of Software and Tools

Timeframe: 02/2014 to Present
Company Name: Montana Department of Public Health and Human Services, ACA Implementation (CHIMES) Project
Company Location: Helena, MT
Position Title: Project Manager

Project Description: Project Manager leading a mid-size team of IV&V and test professionals providing IV&V, test (system and user acceptance tests), and evaluation solutions to ensure client IT systems and services meet client requirements/standards—computer equipment and software (receipt, installation, operation, maintenance) and are performing to defined design, cost, schedule, and performance specifications/capabilities. Responsible for delivery of technologies, tools, and support to quality assurance/quality control and operational assessments/technical writing, integration/system and user acceptance tests/testing (using automated testing tools) as well as system readiness/evaluation.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 03/2012 to 01/2015
Company Name: Washington Health Benefit Exchange, Washington Healthplanfinder
Company Location: Olympia, WA
Position Title: Implementation Lead & Senior Technical IV&V Consultant

Project Description: Provided Washington State project team with IV&V analysis with regards to the technical environment, system development practices, configuration management and other project related activities, by evaluating and documenting the viability and risks associated with each project phase as well as providing detailed recommendations for improvement and risk mitigation options. Leveraged system analysis skills to help validate business processes/procedures and technical requirements and formulate solutions to complex business problems. Utilized deep understanding of: system development principles; code development; modifications to computers systems; programming languages; hardware and software; and system procedures and guidelines to review and provide technical recommendation to the Healthplanfinder development and implementation teams.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 03/2014 to Present
Company Name: Delaware Division of Medicaid and Medical Assistance (DMMA)
Company Location: New Castle, DE
Position Title: IV&V Technical SME

Project Description: Provide Independent Validation and Verification (IVV) services for the modernization of the legacy system. The engagement includes assessments/technical writing of system integrator project management plans, training plans, system requirements, technical and architectural designs, and other

artifacts and deliverables. The Eligibility system is a large-scale system/secure internet application development project, with SOA and/or Web-based services.

- Provides IV&V services including review of requirements, test plans, and tracing test documentation to requirements.
- Evaluate project plans, including project management plans, risk and issue management, release management, configuration management, data cleansing and conversion, training plans and organizational change management and other implementation plans for adherence to standards and best practices, reasonability and completeness.
- Assure consistent system quality assurance/quality control by reviewing and validating the creation and implementation of best practice system development and implementation methods by validating processes, assessing documentation as well as evaluating resource requirements (skill sets, etc.) to assure that system delivery is fit for purpose.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 01/2014 to 06/2015
Company Name: California Employment Development Department, Continued Claims Redesign Modernization Project
Company Location: Sacramento, CA
Position Title: Independent Project Oversight Consultant (IPOC)

Project Description: Leads the Independent Project Oversight (IPO) services for the Continued Claims Redesign Modernization Project. PCG's customized IPO service is designed to ensure that the project's cost, scope, and schedule are monitored to assist the stakeholders and sponsor in attain the project's goals by observing and monitoring project processes. These IPO activities increase the project's probability for success by forewarning the State of real or potential adverse situations, ensuring that the project has been properly structured and all necessary project plans, resources, personnel, and other critical components have been identified, created, addressed, and/or will be obtained prior to implementation. In gathering the project assessment data, reviewed project plans, reports, deliverables, and work products and routinely participates in project meetings, specifically focusing on project management.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 04/2007 to 10/2011
Company Name: Social Interest Solutions, Core One-e-App Technologies
Company Location: South San Francisco, CA
Position Title: Project Manager/Systems Architect

Project Description: Project Manager and lead business systems analyst (BA), responsible for creating clear and attainable project objectives, builds project requirements based on business processes/procedures, and manages the triple constraint for projects (cost, time, and quality) over phased implementations. Acts as client representative and determines and implements the exact needs of the client, based on knowledge of the firm. Adapts to various internal procedures and forms close links with the client representatives ensuring client satisfaction is realized.

Experienced leader (responsible for direct report teams from 5 to 40 members) with full responsibility and the level of authority required to successfully complete a given project. Acts as special projects supervisor over organizational initiatives (as well as development of secure internet applications/solutions) for the successful adoption and integration of new technologies (i.e., BizTalk implementation—connecting internal, proprietary systems to external disparate systems). Strategizes to ensure successful delivery and stakeholder satisfaction, implements risk management techniques and mitigation strategies. Overseeing system and user acceptance tests (including implementation of automated testing tools), training plans/initiatives, data cleansing and conversion processes, and system readiness activities. Estimates and schedules task work and duration with confidence. Implements monitoring tools and recognizes and practices the leadership skills needed to run a motivated team.

Hardware/Software: SQL, .NET, Adobe CS, Toad, MS BizTalk, and MS SourceSafe and MS Office Suite of Software and Tools

Timeframe: 07/2000 to 03/2007
Company Name: Sacramento County Office of Education, Customer Relationship Management Services/Credentialing Division
Company Location: Mather, CA
Position Title: System Architect and Project Manager

Project Description: The Instructional Support Services division developed, in coordination with the UC Davis Extension Program, a Campus Solutions implementation suite for higher education. Campus Solutions was implemented to provide next generation technology, flexibility, and the capability to adapt easily to evolving needs and requirements. The Campus Solution was a gateway which provided K-12 teachers, schools, and district/county staff access to a highly customized CRM system, incorporating a first-of-its-kind integration with the UC system (UC Davis Extension). The system included an e-Licensing component for licensing and credentialing qualified individuals and was also designed to track school, district and county statistics, individual training plans/profiles, and master (individually programmable) professional development schedules as well as provided a means to apply for and manage courses/credits through UC Davis Extension.

Developed organization–wide CRM strategy based business processes/procedures, infrastructure, and customer needs analysis. Effectively drove the preparation, development, and phased implementation of coding, release, automation, and technical governance processes necessary to implement the desired levels of quality assurance/quality control and operational excellence for enterprise CRM services. Helped to enable business growth, increasing presence of county office solutions (secured internet applications) throughout 12-county region within the State of California footprint building a high demand for software features like transportability, scalability, and adaptability in order to keep investment levels sustainable.

Hardware/Software: SQL, .NET, FileMaker Server, Adobe CS, Dreamweaver, and Visual Basic and MS Office Suite of Software and Tools

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Pepperdine University, Malibu CA
Doctoral Candidate, Global Leadership & Change

Penn State University
Happy Valley, Pennsylvania
Masters of Professional Studies, Enterprise Architecture
Project Management Certification
ITIL Foundation v3

University of Pacific, Stockton, California
Masters of Science, Technology Management

University of Pacific, Stockton, California
Bachelors of Science, Information Technology Management

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Graduate Certificate, Pennsylvania State University
ITIL Certification, Foundation Level
Certified Eclipse IV&V™ Professional Level, PCG

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Platforms: Windows Server NT 6.3/Windows XP/Vista/Win7/Win8/Win10, Mac OS, Linux
Languages: SQL, .NET, JavaScript, C, XML

Methodologies: Agile, SCRUM, RAD, Waterfall

Tools: Sparx Enterprise Architect, Visual Studios 2013, Team Foundation Server 2015, HP Application Lifecycle Management v11, FileMaker Server/Pro Advanced v13, SQL Server 2008, Adobe CS6, Microsoft SharePoint 2013, Microsoft Office Suite (Office 365—Outlook, Word, Excel, PowerPoint, Access, Project, Visio, OneNote)

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Dave McLaury, Program, Contract, and Budget Manager
Michigan Department of Health and Human Services (MDHHS)
201 Townsend St, Lansing, MI 48933
(517) 242-7048 (phone), (517) 321.1518 (fax)
McLauryD@michigan.gov

Sandra Chamberlin, Project Manager
State of Nevada, Division of Welfare and Supportive Services (DWSS)
1470 E College Pkwy, Carson City, NV 89706
(775) 684-0578 (phone), (775) 684-0844 (fax)
Schamberlin@dwss.nv.gov

Erika Franzon, Project Specialist II
Sacramento County Office of Education
10474 Mather Blvd, Mather, CA 95655
(916) 228-2500 (phone), (916) 228-2566 (fax)
efranzon@scoe.net

VII.11 Selvi Dorairaj, NOMADS & DWSS Environment SME

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Selvi Dorairaj***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***NOMADS and DWSS Environment Team***	
# of Years in Classification:	***6+***	**# of Years with Firm:**	***6+***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Kalaichelvi (Selvi) Dorairaj is a Business Architect with PCG. Ms. Dorairaj has over 20 years of IT experience in both California and international agencies. She has worked in all phases of the system development lifecycle in both traditional and agile environments including Requirements, Business Analysis, Testing and Implementation, Independent Verification and Validation (IV&V), and Quality Assurance (QA). She has extensive experience in requirements elicitation and gap analysis, system design and development, testing and implementation activities, project management (using different Software Development Life Cycle (SDLC) methodologies), and healthcare and social services program knowledge. She has provided oversight on both customized and Commercial Off-The-Shelf (COTS) systems as well as legacy conversion projects and phased implementations. Ms. Dorairaj's strengths are in her analytical, communication, and client relationships skills

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.

Timeframe: 07/2012 – 03/2015
Company Name: Nevada Division of Welfare and Supportive Services (DWSS), Health Care Reform Eligibility Engine (HCR-EE) Project
Company Location: Carson City, NV
Position Title: IV&V Senior Technical Analyst - Testing

Project Description: The Nevada Division of Welfare and Supportive Services implemented a new integrated eligibility engine solution (HCR-EE) in support of the Nevada Affordable Care Act (ACA) implementation – that interfaces with the existing eligibility determination system - NOMADS. This solution involved the implementation of a business rules engine to store all of the eligibility rules for the State of Nevada's publicly-subsidized health coverage programs in one system. This engine provides the eligibility determination and enrollment processes for publicly-subsidized health coverage programs and providing

seamless coordination between the Nevada's Health Insurance Exchange, Medicaid and Children's Health Insurance Program (CHIP).

As an IV&V Technical Analyst, Ms. Dorairaj was part of the team that provided an independent evaluation of the technical work products and the technical planning, management and control processes that directly supported the implementation of the HCR-EE. Ms. Dorairaj provided technical and testing expertise in the oversight of client/vendor deliverables supporting requirements management and test planning, execution, and validation efforts at all test levels (including unit testing, system testing, user acceptance testing, and regression testing). This effort also included providing guidance and attestation of client/vendor testing efforts as per the Centers for Medicare and Medicaid Services (CMS) requirements and guidelines. To conduct these oversight services, she utilized the Eclipse IV&V™ Framework customized to best fit the client's needs. This includes the use of industry standards, checklists, and applicable federal and state guidelines (including CMS) to develop monthly assessment report findings. Ms. Dorairaj also participated in CMS gate reviews for the project.

Hardware/Software*:* IBM SPSS and MS Office Suite of Software and Tools

Timeframe: 07/2012 – 03/2015
Company Name: Nevada Silver State Health Insurance Exchange, Business Operations Solutions (BOS) Project
Company Location: Carson City, NV
IV&V Senior Technical Analyst - Testing

Project Description:_The Silver State Health Insurance Exchange – Business Operations Solution provides Nevadans with access to a marketplace for affordable healthcare services in compliance with Affordable Care Act (ACA) mandates.

As an IV&V Technical Analyst, Ms. Dorairaj was part of the team that provided an independent evaluation of the technical work products and the technical planning, management and control processes that directly supported the implementation of the Health Benefit Exchange. Ms. Dorairaj provided technical and testing expertise in the oversight of client/vendor deliverables supporting requirements management and test planning, execution, and validation efforts at all test levels (including unit testing, system testing, acceptance testing, and regression testing). This effort also included providing guidance and attestation of client/vendor testing efforts as per the Centers for Medicare and Medicaid Services (CMS) requirements and guidelines. To conduct these oversight services, she utilized the Eclipse IV&V™ Framework customized to best fit the client's needs. This includes the use of industry standards, checklists, and applicable federal and state guidelines (including CMS) to develop monthly assessment report findings. Ms. Dorairaj also participated in CMS gate reviews for the project.

Hardware/Software: MS Office Suite of Software and Tools

Timeframe: 05/2011 – 06/2015
Company Name: California (CA) Employment Development Department (EDD), Project Portfolio Services: Independent Verification & Validation (IV&V) and Service Oriented Architecture (SOA) Alternate Base Period (ABP), Continued Claims Redesign (CCR), Disability Insurance Automation (DIA), and Single Client Database (SCDB) Project
Company Location: Sacramento, CA
Position Title: IV&V Senior Technical Analyst – Requirements and Testing

Project Description:_The CA EDD Project Portfolio Project includes 4 comprehensive initiatives to modernize and improve key information systems. The Unemployment Insurance (UI) Project Portfolio sub-projects are: Alternate Base Period (ABP), Continued Claims Redesign (CCR), Disability Insurance Automation (DIA), and Single Client Database (SCDB) Project.

As an IV&V Technical Analyst, Ms. Dorairaj was part of the team that provided IV&V services to four of the EDD Unemployment Insurance (UI) Portfolio projects. Ms. Dorairaj provided technical and testing expertise in the oversight of client/vendor deliverables supporting requirements management and test planning, execution, and validation efforts at all test levels (including unit testing, system testing, user acceptance

testing, and regression testing) for all four sub-projects – including each of the phase releases for the CCR sub-project. This included both manual and automated testing reviews. Additionally, she was involved in the IV&V reviews of phased implementation efforts for CCR – including cutover planning (including dry runs of data cleansing, conversion and migration and associated validation activities), system readiness (technical), user readiness (training plans and business processes), and maintenance and operations planning. Ms. Dorairaj was also responsible for providing regular CCR project status reporting and participating in the CCR Executive Sponsor and Steering Committee briefings. To conduct these oversight services, she utilized the Eclipse IV&V™ Framework customized to best fit the client's needs. This included the use of industry standards, checklists, and applicable federal and state guidelines to develop both deliverable-based assessment report and monthly oversight reports monthly IV&V reports (and findings log).

Hardware/Software*:* MS Office Suite of Software and Tools, TFS, HP ALM

Timeframe: 12/2012 – 12/2015
Company Name: Washington (WA) Health Benefit Exchange (HBE), IV&V Project
Company Location: Olympia, WA
Position Title: IV&V Technical Analyst/Independent Testing Team Lead

Project Description: The HBE provides Washingtonians with access to a marketplace for affordable healthcare services in compliance with Affordable Care Act (ACA) mandates.

As an IV&V Technical Analyst, Ms. Dorairaj was part of the team that provided an independent evaluation of the technical work products and the technical planning, management and control processes that directly supported the implementation of the Health Benefit Exchange. Ms. Dorairaj provided technical and testing expertise in the oversight of vendor and HBE work products and deliverables supporting requirements management and test planning, execution and validation efforts (including Integration, System and User Acceptance Testing). She provided guidance and attestation of client/vendor testing efforts as per the federal Centers for Medicare and Medicaid Services (CMS) requirements and guidelines. She also participated in the project Steering Committee meetings as needed. Following the go-live in 2013, Ms. Dorairaj continued with the HBE to perform IV&V attestation activities of new system functionality (as per CMS requirements). To conduct these oversight services, Ms. Dorairaj utilized the Eclipse IV&V™ Framework customized to best fit the client's needs. This includes the use of industry standards, checklists, and applicable federal and state guidelines (including CMS) to develop periodic assessment report findings. Additionally, Ms. Dorairaj was also part of the team responsible for independent testing of the CMS Blueprint Test Scenarios including the planning, development, test execution, and validation of system functionality. This testing effort involved close coordination with the HBE, CMS, the vendor, and interface partners for the processes, procedures, tools, and test environment.

Hardware/Software: MS Office Suite of Software and Tools, JIRA

Timeframe: 10/2015 – Present
Company Name: Washington (WA) Department of Social and Health Services (DSHS), Background Check System (BCS) Project
Company Location: Olympia, WA
Position Title: Lead Quality Assurance (QA) Consultant

Project Description: The BCS Project a software replacement project to convert DSHS' existing Criminal History System (CHS) to a web-based solution – the Background Check System (BCS). This project involves leveraging the existing CHS system for reusability (to the extent possible) and then executing the design, development, and implementation of a web-based replacement system that leverages existing technical assets wherever possible to reduce cost and project duration. This project also includes the data cleansing, conversion and migration of a legacy system with over 20 years of data.

As Quality Assurance Consultant, Ms. Dorairaj is part of the team responsible for helping to ensure that quality control is built into every stage of the BCS Project. She conducts quality assessments for project management and organization, project progress, resources, budget, schedules, workflow, reporting, and

DD&I vendor oversight. This effort also involves working with the DSHS to review project processes, deliverables and report on deviations from documented processes and the approved (baselined) Master Project Work Plan. She also works in close collaboration with the BCS Project Team, technical staff, and DD&I vendor teams providing reviews on various project and vendor deliverables including test plans (all levels including system testing and acceptance testing), data conversion plans, cutover plans, system readiness efforts, stakeholder readiness efforts (training plans, business processes), milestones and checklists. To conduct these QA services, she utilizes the Eclipse QA™ Framework customized to best fit the client's needs. This includes the use of industry standards, checklists, and applicable federal and state guidelines (including the Washington Technology (WaTech) Office of the Chief Information Officer's (OCIO's) QA Policy requirements). Ms. Dorairaj is also responsible for providing regular project status reporting (to both the sponsors and to the OCIO) and executive and steering committee briefings.

Hardware/Software: MS Office Suite of Software and Tools, TFS

Timeframe: 04/2017 – Present
Company Name: California (CA) Employment Development Department (EDD), Benefit Overpayment Collection Automation (BOCA) Project
Company Location: Sacramento, CA
Position Title: IV&V Technical Consultant

Project Description: The EDD's mission is to spur economic growth by delivering crucial services to meet the changing needs of job seekers, employers, and employees. The existing Benefit Overpayment Collection System (BOCS) was implemented in 2000 and, while it is able to support the current workload, it cannot grow. The BOCA system will replace BOCS by providing a modern, fully integrated, automated system that will use benefit overpayment liability collection, storage, and account management to increase the efficiency and efficacy of the EDD's operations and staff. This functionality will be incorporated into the state's existing Accounting and Compliance Enterprise System (ACES) application, for which PCG was also the IV&V vendor in 2012. The ACES application (a Commercial-Off-The-Shelf solution) currently provides liability collection functions for the EDD's tax collections. With the BOCA solution, the EDD will expand the ACES to also collect Unemployment Insurance (UI), Disability Insurance (DI), and Paid Family Leave (PFL) benefit overpayments.

As an IV&V Technical Consultant Analyst, Ms. Dorairaj is part of the team that is performing IV&V over all phases of the BOCA project to ensure that the BOCA functionality is successfully integrated into the ACES application. She monitors and conducts assessment on various project activities including project management, requirements management, change management, design sessions, interfaces, data cleansing and conversion, system configuration verification, testing, training, and Organization Change Management (OCM). As part of the day-to-day activities, she conducted requirements traceability analysis reviews; reviewed state and vendor deliverables including project management plans, system design documentation, system and user acceptance testing plans, training plans and system and user readiness plans; identified material and critical risks and issues in project processes and deliverables. To conduct these oversight services, Ms. Dorairaj utilized the Eclipse IV&V™ Framework customized to best fit the client's needs. This includes the use of industry standards, checklists, and applicable federal and state guidelines to develop monthly assessment report findings.

Hardware/Software: MS Office Suite of Software and Tools, FCR (SI Vendor's in-house project repository – deliverables, requirements, testing and other project artifacts)

Timeframe: 08/2006—04/2011
Company Name: Social Interest Solutions, One-e-App Project & ECChange Project and ECCOnline Project
Company Location: Sacramento, CA
Position Title: Project Manager/Solutions Lead/Analyst/Tester

Project Description: Social Interest Solutions is a non-profit organization that manages a portfolio of technology solutions that strive to improve quality of life by connecting people with needed public and private services. The One-e-App solution involves screening and enrolling applicants in a range of health,

social services and other support programs including Medi-Cal (Medicaid), Healthy Families, Child Disability Health Prevention (CHDP), Food Stamps/Supplemental Nutrition Assistance Program (SNAP), Women, Infants, Children (WIC), Kaiser Permanente Child Health Plan, local county healthcare programs, Earned Income Tax Credit (EITC), California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance (FERA).

One-e-App is a secure internet application that is built on a service-oriented architecture (SOA) and interfaces with multiple systems using both traditional and non-intrusive protocols including CalWIN (Medi-Cal) and Health-e-App (Medi-Cal and Healthy Families).
ECChange is a cross-agency Web-based case management system that supports many Alameda County, California health and human services programs.

As Project Manager/Solutions Lead/Analyst/Tester, Ms. Dorairaj was responsible for managing customized implementations of the One-e-App solution for 2 key clients. Ms. Dorairaj was responsible for managing and performing the DD&I for maintenance and system enhancements. In addition to project management duties, her responsibilities included requirements elicitation and analysis, conducting JAD sessions, developing design specifications, data cleansing and conversion activities, managing and performing testing (including unit testing, system testing, user acceptance testing, load and performance testing and regression testing), quality control, and implementation. Additionally, she participated in monthly One-e-App Steering Committee meetings and other client reporting meetings/briefings.
Ms. Dorairaj performed a similar analyst/tester role on the ECChange Project.

Hardware/Software: SQL, .NET, WAPT, Toad, MS BizTalk, and MS Office Suite of Software and Tools

Timeframe: 08/1998—11/2001
Company Name: IBA Technologies Ltd (Australia/Singapore)
Australian Defense Force (ADF) Project & Medical Records Tracking (MRT) Project
Company Location: Sydney, Australia
Position Title: Analyst/Tester/Implementation Consultant

Project Description: As part of the development/implementation team, Ms. Dorairaj was responsible for customizing the core IBA modules for the ADF solution and implementing the system. She managed and performed DD&I for maintenance and system enhancements. Her responsibilities included requirements elicitation and analysis, conducting JAD sessions, developing design specifications and technical writing, testing and quality control.

As part of the development/implementation team for the MRT Project, Ms. Dorairaj was responsible for developing a new MRT core IBA module and overseeing the development and integration within the IBA core set of modules. Additionally, she was responsible for customizing the MRT and other core modules for Singapore-based implementations – enhancement of the modules, technical writing, development of implementation and training plans for both internal Singapore staff as well as Singapore clients.

Hardware/Software: SQL, .NET, MS Office Suite of Software and Tools

Timeframe: 02/1994—08/1998
Company Name: Scientia Systems Pty Ltd
Scientia Project & Holeproof (Socks Division) Project
Company Location: Sydney, Australia
Position Title: Customer Support Manager/Developer/Team Lead

Project Description: As part of the development/customer support team for the Scientia Project, Ms. Dorairaj was responsible for managing the Customer Service and Development team (6 staff members), performing DD&I for maintenance and enhancements, managing client accounts and prioritizing work efforts. Additionally, she was the owner of 2 core modules in the Scientia suite of applications.

As the Team Lead for the Holeproof Project, Ms. Dorairaj was responsible for managing the customized scheduling module used to support manufacturing operations at Holeproof (Socks Division). Her responsibilities included account owner for the customized solution, managing and performing DD&I for

maintenance and enhancements, supporting application interfaces to other systems, testing, training, and implementation.

Hardware/Software*:* MS Office Suite of Software and Tools, C, UNIX

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

MIT, Master of Information Technology, Deakin University, Geelong, Australia (2005)

BSc, Computer Science and Mathematics, University of Sydney, Sydney, Australia (1994)

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Professional, Project Management Institute (2015)

ITIL v3 – Information Technology Infrastructure Library Certification (2012)

American Software Testing Qualifications Board – CTFL-AT (Certified Tester Foundation - 2015 & Certified Agile Tester Foundation 2017)

Eclipse IV&V® Professional Certification (2015)

IBM Certified Associate Business Process Analyst Cúram V6.0.5 (2015)

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Platforms: Windows Server NT 6.3/Windows XP/Vista/Win7/Win8/Win10, Mac OS, Linux
Languages: SQL, PL/SQL, .NET, JavaScript, C,C++, C#, HTML, XML
Methodologies: Agile, SCRUM, RAD, Waterfall
Tools: Sparx Enterprise Architect, Microsoft Visual Studio, Team Foundation Server, HP Application Lifecycle Management, SQL Server, Oracle, Adobe CS6, Microsoft SharePoint, Microsoft Office Suite, Microsoft Project, Microsoft Visio, Crystal Reports, WAPT, JAWS, Natural Dragon Speak, JIRA,

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Sandra Chamberlin
Nevada Division of Welfare and Supportive Services
Phone: (650) 248-6194; Fax: n/a
Sdchamberlin13@gmail.com

Jacques Michel
Washington Health Benefit Exchange
Phone: (360) 688-7837; Fax: n/a
Jacques.michel@wahbexchange.org

Andy Bassi
California Employment Development Department (EDD)
Phone: (916) 653-4598; Fax: n/a
Andy.Bassi@edd.ca.gov

VII.12 Jeff Hellzen, Technical Architecture Advisor

Company Name Submitting Proposal:	*Public Consulting Group, Inc.*

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	*Jeff Hellzen*	**Key Personnel: (Yes/No)**	*No*
Classification; i.e., Project Manager, Implementation Lead, etc.		*Technical Architecture Advisor*	
# of Years in Classification:	*28*	**# of Years with Firm:**	*16*

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Hellzen is the Chief Technologist for Public Consulting Group, Inc. He performs project leadership and support roles for PCG government and private sector customers with specific emphasis on software development, architectural assessments, and reviews. Mr. Hellzen has over 28 years IT experience, including 16 years on state and federal government projects involving technical assessments and technical verification and validation of multi-year, multi-million-dollar development projects. His experience also includes 10 years of technical management for a variety of private sector companies where he was responsible for all aspects of Information Technology (IT) and consulting on next generation software systems and industry standards.

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.

Timeframe: 6/2016 to Present
Company Name: California Department of Social Services
Company Location: Sacramento, California
Position Title: Senior Advisor

Project Description: The California Department of Social Services (CDSS) has engaged PCG to perform IV&V services during the Planning, Procurement, and Execution phases of the CWS-NS Project. IV&V will be achieved through a combination of processes, standards and services that provide state and federal executive stakeholders with a fact-based, unbiased, and on-going assessment of the CWS-NS projects ability to deliver and progress towards delivery of a solution that will meet CDSS and county business needs. These activities increase the project's probability for success by forewarning the Department of real or potential adverse situations, ensuring that IT projects are properly structured, and all necessary project plans, resources, personnel and other critical components have been identified, created, addressed and/or obtained prior implementation and transition.

Mr. Hellzen provides IV&V and project leadership services to the project and agile development processes. PCG provides oversight and assessment of the tasks, activities and work products produced on the project.
Hardware/Software: Amazon Cloud Services, Java, Ruby, Postgres, DB2

Timeframe: 1/2013 to 7/2015
Company Name: Hawaii Department of Health Services
Company Location: Honolulu, Hawaii

Project Description: Hawaii is developing and implementing a modernized integrated eligibility solution for their Medicaid and public assistance (SNAP, TANF, etc.) programs based on changes needed to support ACA.

Mr. Hellzen provides IV&V and Enterprise Architecture consulting services to the State of Hawaii Department of Health Services. PCG provides oversight and assessment of the tasks, activities and work products produced on the project.

Hardware/Software: Oracle Exastack, Java, Oracle RAC

Timeframe: 7/2012 to Current
Company Name: Iowa Department of Health Services
Company Location: Des Moines, Iowa

Project Description: Iowa is implementing a new integrated eligibility system to address the Medicaid, SNAP, CHIP, and TANF programs with a COTS solution provided via a major system integrator using the Agile Methodology.

Mr. Hellzen provides IV&V and project leadership services to the State of Iowa Department of Health Services. PCG provides oversight and assessment of the tasks, activities and work products produced on the project.

Hardware/Software: Java

Timeframe: 11/2007 to 12/2010
Company Name: California Health and Human Services Agency – Department of Rehabilitation (DOR)
Company Location: Sacramento, California

Project Description: The California Department of Rehabilitation (DOR) is replacing the case service Field Computer System (FCS) that supports the Employment Preparation Services Division and Blind Field Services staff in providing vocational rehabilitation (VR) services to Californians with disabilities. FCS, an outdated, inaccessible, and cumbersome mainframe-based application is difficult to maintain and cannot easily be modified to allow staff to access, utilize, or incorporate current technological tools, capabilities, and features. The goal of the proposed new system, or Electronic Records System (ERS), is to improve the accessibility, effectiveness, and efficiency of the DOR VR Services Program and provides field, program and executive management with more accurate and timely information for monitoring, oversight, planning and reporting purposes.

As Sr. Technical Lead, Mr. Hellzen serves as the primary technical resource for evaluating the Request for Proposal (RFP) and non-functional requirements to ensure conformance with the DOR internal development and architecture guidelines as well as industry and best practices. After the procurement phase, Mr. Hellzen will provide technical services and expertise for the Design Evaluation, Deployment Evaluation, and Technical Risk Assessment portions of the project.

Hardware/Software: Wintel, Microsoft .NET C#

Timeframe: 4/2009 to 9/2010
Company Name: Massachusetts Department of Transitional Assistance
Company Location: Massachusetts

Project Description: The BEACON project is a software re-platforming of the current BEACON application from SunOne UDS (Forté) solution to a Java / J2EE solution. The department requested an independent technical assessment of the project. Specifically, DTA was interested in an assessment of the schedule, deliverables, and general approach as well as suggested corrective actions to increase the likelihood of successful project completion. The project also provided implementation planning facilitation and support.

As Project Manager, Mr. Hellzen managed project scope, budget, deliverables, and coordinated project tasks for team members. Developed deliverable expectation documents, developed status reports, and kept the client informed of status and issues through formal and informal meetings.

Mr. Hellzen also served as one of the primary technical resources for developing the project's architectures and adherence to both project guidelines and industry best practices.

Hardware/Software: IBM AS-400, Java, DB2

Timeframe: 10/2007 to 3/2009
Company Name: California Health and Human Services Agency – Office of Systems Integration (OSI) – Statewide Automated Welfare System (SAWS)
Company Location: Sacramento, California

Project Description: The California Health and Human Services Agency – Office of Systems Integration (OSI) – Statewide Automated Welfare System (SAWS) administers the automation of public assistance programs for the State of California. The California Welfare and Institutions Code, § 10823-10824, require that the counties of California form no more than four consortia to automate public assistance programs.

The four consortia automation projects, all currently in production, are:

- Welfare Client Data System – CalWORKS Information Network (WCDS-CalWIN)
- Los Angeles Eligibility, Automated Determination, Evaluation, and Reporting (LEADER)
- Interim Statewide Automated Welfare System (ISAWS)
- Consortium IV (C-IV)

OSI-SAWS procured technical consultant services for the purpose of performing technical systems assessments and reports on the technical architecture of the C-IV, WCDS-CalWIN, and LEADER systems in terms of feasibility, capacity and performance scalability, and risk. PCG provided a qualified staff of experienced consultants to perform the project management technical assessments and review of procurement documents.

As Project Manager, Mr. Hellzen managed project scope, budget, deliverables, and coordinated project tasks for team members. Developed deliverable expectation documents, developed weekly and monthly status reports and kept SAWS management informed of status and issues through formal and informal meetings.

Mr. Hellzen also served as one of the primary technical resources for reviewing the project's architectures and adherence to both project guidelines and industry best practices.

Hardware/Software: IBM pSeries, Sun Sparx, Oracle, Java, PowerBuilder, Unisys MAPPER

Timeframe: 11/2004 to 8/2005
Company Name: California Child Welfare Services/Case Management System (CWS/CMS)
Company Location: Sacramento, California
Project Description: CWS/CMS, originally implemented in 1997, has moved into the Maintenance and Operations (M&O) phase. The system supports all 58 California counties and has over 19,000 users. Since its implementation, the system has incorporated the all but four (4) of the most significant and critical Statewide Automated Child Welfare Information System (SACWIS) functionality required by federal

requirements. The system's current technical architecture is comprised of technologies and concepts that are outdated and obsolete. The State contracted for an independent analysis of the best approach to solving the problems and challenges faced by the existing CWS / CMS technical architecture. The primary objective was to provide a Total Cost of Ownership (TCO) comparison between each of the three (3) alternatives, which include:

- Continue with the current CWS / CMS Technical Architecture
- Evolve the current CWS / CMS Technical Architecture to a web services-based Technical Architecture over time
- Continue M&O of the current CWS / CMS and simultaneously build a new system using a web services-based Technical Architecture

As Senior Technical Leader, Mr. Hellzen directed the technical architecture assessment of the baseline CWS/CMS system for use in the alternative assessment. Subsequent to the baseline assessment, Mr. Hellzen provided specifications for the target web services-based architecture to be used in the alternative comparison. Responsible for the technical architecture portion of the alternative analysis report submitted to the Legislature. Contributed to the federally submitted advance-planning document. Provided technical specification inputs for use in upcoming Request For Proposal (RFP).

Hardware/Software: IBM Mainframe, PowerBuilder, REXX, Coolgen

Timeframe: 9/2003 to 6/2004
Company Name: California Department of Health Services
Company Location: Sacramento, California
Project Description: Technical architecture assessment of the Medi-Cal Eligibility Data System (MEDS). MEDS is a critical component of the administration of the California Medical Assistance Program (Medi-Cal). Medi-Cal is California's implementation of the federally mandated Medicaid Program. This program provides health care services to welfare recipients and other qualified low-income persons – primarily families with children and the aged, blind, or disabled. MEDS permits access to up-to-date eligibility status by the fiscal intermediary, who uses the data to help adjudicate medical provider's claims for reimbursement for services rendered to Medi-Cal beneficiaries. MEDS also supports direct access to eligibility information by individual health care providers and provides limited extracts to health plans that serve Medi-Cal beneficiaries. The project assessed the technical architecture, data architecture, application architecture, software engineering standards, application development languages and tools, and database management, and human resources providing maintenance and support of MEDS.
As the Task Manager, evaluated the technical architecture that included IBM z/900 mainframes, z/OS operating system, CICS, VSAM, DB2 RDBMS, COBOL, and BAL. Evaluated the source code for adherence to industry and best practices. Provided migration strategy for applications and database. Assessed the technical architecture, data architecture, application architecture, software engineering standards, application development languages and tools, and database management products.

Hardware/Software: IBM z/900, CICS, COBOL, VSAM, DB2

Timeframe: 7/2002 to 6/2005
Company Name: California Health and Human Services Data Center, Statewide Automated Welfare Systems, Consortia Management Unit
Company Location: Sacramento, California
Project Description: Technical architecture and design assessment of Consortium IV, a Statewide Automated Welfare System (SAWS) development project supporting 6,600 users in 127 sites across 4 California counties. The project evaluated the infrastructure architecture including servers, networks, software, and management processes for this n-tier, J2EE, web-based system. The technology components consisted of Sun Microsystems servers running the Solaris operating system, Oracle RDBMS, BEA WebLogic server, Apache web server, Cisco Systems network equipment, and Intel-based Windows XP workstations.

As the Task Manager, Mr. Hellzen contributed to the assessment reports at the General System Design, Detailed System Design (Release 1 and Release 2) phases of this project; completed C-IV specialized assessments for several Source Code Reviews and C-IV Security that included a review of application security; assessed and advised the State of California SAWS Consortia Management Unit on the security status of the Consortium IV Welfare Project. Consortium IV project involved the following: Security Policy, Platform Security, Application Security, Network/Perimeter Security, Site Security, and Environmental Controls. Security Policy was assessed against the International Organization for Standardization (ISO) Code of Practice for Information Security Management (ISO 17799). Application Security addressed five main areas of application system security: validation of the incoming data, correct processing of data, authentication of received data, encryption, and event logging. A review of system file security included control of operational software, protection of system test data, and access control to program source library. The development and support process reviewed included change control procedures and technical review of operating system changes. Multiple contract engagements have occurred for this project.

Hardware/Software: Sun Sparx, Solaris, Java, WebLogic, Apache

Timeframe: 5/2002 to 6/2002
Company Name: California Health and Human Services Data Center, Statewide Automated Welfare Systems, Consortia Management Unit
Company Location: Sacramento, California
Project Description: Technical assessment of Statewide Fingerprint Imaging System (SFIS), which captures fingerprints and digital images of welfare recipients used to verify benefit eligibility and assist with the determination of welfare fraud. The SFIS system supports 370 users in 300 sites across 58 California counties.
As the Task Manager, responsible for source code reviews of the system. These source code reviews covered the online processing system – consisting of 'C', PowerBuilder – the batch processing systems – consisting of 'C' and COBOL. The source code was reviewed for adherence to industry and best practices as well as memory management and suggested improvements.

Hardware/Software: PowerBuilder, 'C', COBOL

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of Minnesota, Minneapolis
Chemistry

University of Saint Thomas
Computer Science

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

n/a

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

IBM Mainframe(s), Sun Sparx / Solaris, Oracle Exastack, Wintel, Amazon Cloud, Java, 'C', COBOL, PowerBuilder, DB2, Oracle, SQL Server, Eclipse IDE

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Randy Chau
Hawaii Medicaid (Med-QUEST)
Phone: (808) 692-7951; Fax: n/a
RChau@medicaid.dhs.state.hi.us

Rita Rutland
Mississippi Division of Medicaid
Phone: (601) 576-4147; Fax: n/a
Rita.Rutland@medicaid.ms.gov

Kristine Dudley
California Office of Systems Integration – Statewide Automated Welfare System (SAWS)
Phone: (916) 263-0436; Fax: n/a
kristine.dudley@osi.ca.gov

VII.13 Benjamin Robinson, Technical Architecture Advisor

Company Name Submitting Proposal:	*Public Consulting Group, Inc.*

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	*Benjamin Robinson*	**Key Personnel: (Yes/No)**	*No*
Classification; i.e., Project Manager, Implementation Lead, etc.		*Technical Architecture Advisor*	
# of Years in Classification:	*20*	**# of Years with Firm:**	*17*

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

PCG would like to present Mr. Robinson, a Senior Consultant with Public Consulting Group's security team. Specializing in information security and data architecture, he has over 20 years' information technology experience. Benjamin is experienced providing technical assessments of architecture and design, conducing risk assessments, security assessments using security control standards including the NIST Special Publications 800 Series, information security policy and procedure audits, security testing including vulnerability assessments and penetration testing, and development of information security programs.

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.

Timeframe: 1/2015 to Present
Company Name: Washington Department of Social and Health Services (DSHS)
Company Location: Olympia, Washington

Project Description: PCG is providing Independent Verification and Validation (IV&V) services associated with maintenance and modernization of ACES systems. The activities within the scope of the IV&V effort included:

- Project Management
- Architecture and Design Oversight
- Testing Oversight
- Implementation, Transition and Operations Oversight
- Information Security and Risk Assessment

All project efforts include the identification, management, and tracking of risks and issues, as well as providing input and support to the project for mitigation and contingency planning.

Mr. Robinson's responsibilities include assessment of information security program and program components to ensure compliance to federal, state, and project requirements and to confirm consistent

quality is applied to each product produced. Mr. Robinson is assessing security controls, using control frameworks such as Center for Internet Security's Critical Security Controls (CSC), NIST Special Publication 800-53A and CMS MARS-E.

Mr. Robinson is also assisting with technical assessments pertaining to configuration management and data architecture.

Hardware/Software: IBM Mainframe stack

Timeframe: 1/2016 to Present
Company Name: Washington Department of Health
Company Location: Olympia, Washington

Project Description: Washington is procuring a cloud-based solution for its medical marijuana registry. PCG is responsible for providing information security services that include evaluating the security measures of the system through architecture and design reviews, source code analysis, performing a physical site review, development practice assessment, NIST SP 800-30 Tier 3 (information system) based risk assessment, vulnerability scanning, penetration testing and aiding the vendor with establishing NIST-compliant practices that comply with DOH requirements and State of Washington Office of the Chief Information Officer (OCIO) requirements.

Benjamin is responsible for managing the PCG team as well as leading the security analysis and security testing efforts.

Hardware/Software: Linux, PHP, Apache, Nginx, Amazon Web Services

Timeframe:7/2015 to 1/2017
Company Name: Hawaii Department of Human Services
Company Location: Honolulu, Hawaii

Project Description: PCG assisted DHS with the planning and establishment of an Information Security Office that reports to DHS as well as the State of Hawaii Chief Information Security Office. The DHS Information Security Office is responsible for managing the risk associated with protecting the department's information, technology infrastructure and ensure the safety of DHS staff.

Benjamin was responsible for determining necessary security requirements, identifying supporting frameworks, authoring security related management plans and advising on processes and procedures to ensure proper selection and implementation of necessary security controls.

Hardware/Software: n/a

Timeframe: 2/2013 to 12/2015
Company Name: Hawaii Department of Human Services
Company Location: Honolulu, Hawaii

Project Description: The project, known as the Kauhale (Community) Online Eligibility Assistance (KOLEA) system will convert all the Medicaid and program functionality from the legacy system to KOLEA. PCG's role is to help determine if the project is building a sustainable solution that supports the business needs by providing IV&V.

Mr. Robinson's responsibilities include reviews of data management planning, business rules, project deliverables, database design, system design, interface design and source code to ensure compliance with IEEE's verification and validation methodology and project standards and guidelines.

Additionally, Benjamin performed independent security assessments of the KOLEA system for 2014 and 2015 using NIST SP 800-53A, IRS 1075, and CMS Minimum Acceptable Risks Standards for Exchanges (MARS-E) to evaluate the system security plan and supporting information security policy. A mapping of the SANS Critical Security Controls to the NIST controls was created to facilitate reporting and improve management's viewpoint of the security posture.

Hardware/Software: Linux, Oracle stack, Java

Timeframe: 4/2015 to 9/2015
Company Name: California Financial Information System (FI$Cal)
Company Location: Sacramento, California

Project Description: The FI$Cal Project is a business transformation project for the State of California government in the areas of budgeting, accounting, cash management, and procurement. When completed FI$Cal will allow the State systems and workforce to function in an integrated financial management system environment. The FI$Cal Project is a partnership of the Department of Finance (DOF), the State Controller's Office (SCO), the State Treasurer's Office (STO) and the Department of General Services (DGS).

This multi-year project has a budget estimated at over $672 million. The project successfully concluded the ERP and System Integrator acquisition phase during early 2012, and in June 2012 commenced a contract with Accenture for the development and implementation phases. The phases include multiple waves of incremental system deployment. Accenture will be implementing PeopleSoft ERP modules to support the State's accounting, cash management, and procurement and contract management functions, while Hyperion will be used to support budgeting and business intelligence functions. The second wave of system deployment was successfully completed in July 2014.

Benjamin has been responsible for working with the information security office to increase the organization's security posture. These efforts have included re-assessing security controls in response to the project's independent security assessment, updating security policy, creating and implementing audit and monitoring metrics, writing security-related procedures, and correlating the California State Administrative Manual policy to NIST controls.

Hardware/Software: PeopleSoft, Hyperion

Timeframe: 1/2015 to 7/2015
Company Name: Partnership for Assessment of Readiness for College and Careers (PARCC)
Company Location: Washington, DC

Project Description: PCG is providing Independent Verification and Validation for PARCC's K-12 student assessment system. PARCC is a consortium of states developing electronically delivered assessments that measure whether K-12 students are on track to be successful in college and their careers.

Mr. Robinson was responsible for assessing the project's data management processes. This effort included reviews of project deliverables such as information security artifacts, data management artifacts, database design, and interface design to ensure compliance with project requirements including Common Education Data Standards, and applicable state and federal privacy laws, such as FERPA, PPRA and COPPA.

Hardware/Software: n/a

Timeframe: 7/2015 to Present
Company Name: First 5 Alameda County
Company Location: Alameda, California

Project Description: Public Consulting Group (PCG) is contracted to move multiple web applications from a vendor site to Rackspace under a private virtual cloud infrastructure. PCG is responsible for maintenance and operations, implementing changes to support the migration, as well as to promote security and performance.

Mr. Robinson is responsible for the databases supporting the First 5 applications. His efforts entail modifying database objects to meet evolving project requirements, re-factoring existing objects to remove redundancies and deprecated fields. To facilitate future efforts past the transition period, Benjamin is creating supporting entity relationship diagrams and documentation for the database and related data management procedures.

Mr. Robinson conducted a web application penetration test in order to identify vulnerabilities and validate the exploitability of vulnerabilities. The results of the test were used to determine a prioritized course of action in order to improve the security of systems and correct design deficiencies.

Hardware/Software: Microsoft SQL Server, IIS, Windows Server, Rackspace hosted

Timeframe: 12/2014 to 4/2015
Company Name: New York State Department of Education
Company Location: New York

Project Description: Public Consulting Group (PCG TC) was contracted to develop the EngageNY Portal (ENYP). Goals of the project were to create secure data tools for educators, students and families providing access to Common Core curriculum and additional resources.

Mr. Robinson was responsible for assisting the Chief Information Security Officer with the selection, implementation and assessment of security controls, using a FedRAMP template. Benjamin was responsible for maintaining and managing the Plan of Actions and Milestones, documentation of security controls within System Security Plans and evaluating automated code review remediation plans.

Hardware/Software: n/a

Timeframe: 8/2014 to 12/2014
Company Name: San Diego County Clerk Recorder Office
Company Location: San Diego, California

Project Description: PCG provided a system assessment that evaluated the viability of a COTS product to fulfill ARCC business needs and separately performed a network performance assessment for ARCC.

Benjamin was responsible for source code review, design and architecture reviews, network performance assessment, team coordination and authoring the resulting reports and communicating findings to senior management.

Hardware/Software: Harris, County Recorder (COTS Solution)

Timeframe: 3/2014 to 6/2014
Company Name: California Department of Social Services
Company Location: Sacramento, California

Project Description: PCG provided an independent security control assessment to verify the CMIPS II system is properly implementing information security across the multi-agency environment. PCG TC reviewed security documentation and conducted interviews, focusing on security controls that relate to the top five controls as defined by the SANS Critical Security Controls (CSC). This subset of SANS CSC was mapped to NIST 800-53A and assessed against the NIST criteria to determine whether or not controls are being met by the project. The assessment verified that the selected security controls have been completed in accordance with the system design and any identified security risks are being mitigated.

Mr. Robinson audited CMIPS security controls against NIST standards, reviewed information security documentation, aggregated results to determine project security risks and communicated the results to the CISOs of the CMIPS agencies.

Hardware/Software: IBM Curam, Oracle, SAP, Dell, Agissar

Timeframe: 1/2014 to Present
Company Name: Delaware Department of Health and Social Services
Company Location: Delaware

Project Description: The Delaware Department of Health and Social Services (DHSS) is modernizing its Medicaid eligibility system to support the Affordable Care Act requirements. In this project, Delaware is primarily upgrading its legacy system, the Application for Social Services and Internet Screening Tool known as ASSIST, to support the new functionality. Additionally, the State is migrating the system of record from its legacy system into the ASSIST database and creating a Master Client Index (MCI) database which is intended to serve as a statewide identifier for Delaware-provided services.

Mr. Robinson's responsibilities include reviews of project deliverables such as information security artifacts, data management planning, database design, system design, interface design and source code to ensure

compliance with IEEE's verification and validation methodology and project standards and guidelines including MITA alignment.

Hardware/Software: Deloitte's Public Sector Framework

Timeframe: 9/2014 to 4/2014
Company Name: Washington Health Care Authority
Company Location: Washington

Project Description: The Washington HBE IT Project was initiated by the HCA to develop and implement a state based exchange, as defined by health care reform mandated by the Affordable Care Act (ACA). PCG TC is providing IV&V services to verify and validate HBE and System Integrator's (SI) technical processes, procedures and deliverables associated with the SI and implementation of the HBE solution, as well as the Eligibility Service component.

Benjamin's responsibilities included reviews of data management planning, business rules, project deliverables, database design, system design, interface design and source code as well as authoring IV&V reports and write-ups in line with IEEE's verification and validation methodology. Mr. Robinson also assisted with the independent security assessment using NIST SP 800-53A, IRS 1075, and CMS Minimum Acceptable Risks Standards for Exchanges (MARS-E) to evaluate the system security plan and supporting information security policy.

Hardware/Software: Deloitte's Public Sector Framework

Timeframe: 7/2012 to 11/2013
Company Name: Nevada Department of Health and Human Services
Company Location: Nevada

Project Description: The Silver State Health Insurance Exchange developed a Business Operations Solution (BOS) to support the information technology and business functions of the Exchange in order to begin enrolling people in health insurance coverage by Oct. 1, 2013. PCG is responsible for providing IV&V services for both the BOS and Xerox's Eligibility Engine (EE).

Benjamin provided data architectural oversight. His responsibilities included reviews of data management planning, business rules, project deliverables, database design, interface design and source code as well as authoring IV&V reports and write-ups in line with IEEE's verification and validation methodology. Mr. Robinson also assisted with the independent security assessment using NIST SP 800-53A, IRS 1075, and CMS Minimum Acceptable Risks Standards for Exchanges (MARS-E) to evaluate the system security plan and supporting information security policy.

Hardware/Software: n/a

Timeframe: 9/2012 to 3/2014
Company Name: Hawaii Department of Education
Company Location: Oahu, Hawaii

Project Description: PCG worked with the DOE to create an Operational Data Store (ODS) that supports the SIF 2.5 messaging standard and is capable of archiving snapshots to preserve the ODS data over time and supports federal reporting while supporting the DOE's Enterprise Architecture standardization around SOA. This was accomplished by using CPSI's SIF solution, to ensure that SIF compliant data exchange is implemented to support near real-time exchanges of data, with the DOE's source systems.

Benjamin worked with DOE to document the ETL processes to handle data from multiple agencies to populate a SIF compliant operational data store (ODS) using CPSI's SIF solution. As well, he performed a data quality assessment, identification of data validations and creation of supporting documentation, including ERDs, a project data dictionary and data conversion plans.

Hardware/Software: n/a

Timeframe: 4/2012 to 12/2012
Company Name: Employment Development Department
Company Location: Sacramento, California

Project Description: IV&V activities serve to provide an early warning of technical risks and deviations from requirements, allowing the project team to take the necessary corrective actions. PCG is working with the EDD project teams in order to provide IV&V services to support the goals of the EDD Project Portfolio (CCR, UIMOD, SCDB, ABP).

The activities within the scope of the IV&V effort included:

- Project Management
- System Development and Architectural Oversight
- Testing Oversight
- Implementation, Transition and Operations Oversight
- Security and Risk Assessment
- Management Reporting, Briefings and Special Studies

Benjamin provided system development and architectural oversight. His responsibilities included reviews of business rules, project deliverables, database design, interface design and source code as well as authoring IV&V reports and write-ups in line with IEEE's verification and validation methodology and reviews of security documentation and source code based upon FIPS 199, FIPS-200, NIST-800-18, NIST 800-30, NIST 800-37 and NIST 800-53.

Hardware/Software: Deloitte's Public Sector Framework

Timeframe: 9/2011 to 1/2012
Company Name: AEM Corporation
Company Location:

Project Description: The US Education Department (USED) National Center for Education Statistics (NCES) published version 2.0 of the Common Education Data Standards (CEDS). CEDS 2.0 includes standard names and definitions for key terms, education domains, entities, attribute categories, data elements, and option sets as well as a fully documented logical data model. PCG built upon its prior work with the State Core Model to lead the effort to create CEDS 2.0.

Benjamin normalized and modeled the CEDS 2.0 data elements, documented the resulting logical model and metadata as well as assisting with the mapping of additional standards and the creation of a data dictionary.

Hardware/Software: n/a

Timeframe: 8/2011 to 11/2011
Company Name: County of Sacramento Department of Revenue Recovery
Company Location: Sacramento, California

Project Description: PCG performed an IV&V technical assessment of the Debt Management and Collection System (DMACS) to report on the maintainability of the implemented solution. This assessment included an evaluation of the DMACS system design and infrastructure compared to industry best practices using Microsoft .NET applications development best practices.

Benjamin examined database indices for performance, reviewed the database design, system documentation and database source code. And assessed configuration management processes against IEEE 828-2005 Standard for Software Configuration Management Plans.

Hardware/Software: Visual Basic, Microsoft SQL Server

Timeframe: 8/2011 to 4/2012

Company Name: Utah Education Network
Company Location: Salt Lake City, Utah

Project Description: The Utah Data Alliance (UDA) project is developing a P-20 system, as defined by the Race to the Top program, the Utah Data Alliance Data Store (UDADS) to bring together statewide education and workforce information from disparate systems.

Benjamin worked with UEN to define and classify statewide education data, implement a normalized data model and design the ETL processes to handle data from multiple agencies. As well, he created supporting documentation, including ERDs, a central data dictionary and ETL specifications.

Hardware/Software: n/a

Timeframe: 8/2010 to 6/2012
Company Name: Illinois State Board of Education
Company Location: Chicago, Illinois

Project Description: The Illinois State Board of Education (ISBE) and Public Consulting Group designed and developed a data warehouse architecture for the state-wide Illinois Longitudinal Data System (ILDS). The ILDS supports the tracking of individual students and student level data collection systems with other parts of the ISBE education enterprise (e.g., staff data, special education, and school finance). The architecture provides data to help track the outcomes of Illinois students as they progress from Pre-K through Postsecondary education, and as they enter the workforce. Longitudinal data supports an in-depth, comprehensive view of students' progress in order to help guide policymakers on where to invest time and energy to most effectively improve student achievement.

Benjamin developed a normalized data model to house all district supplied data. As well, he created supporting documentation, including ERDs, and extended the data dictionary to map Illinois' new state model to Federal reporting standards. Mr. Robinson assisted with design of a data warehouse to provide ad hoc and standardized reporting.

Hardware/Software: n/a

Timeframe: 2/2009 to 6/2010
Company Name: California Housing Finance Agency
Company Location: Sacramento, CA

Project Description: Project to replace the legacy financial/accounting system with a SQL, .NET application that: meets functional and non-functional requirements; provides the needed integration between and among the financial/accounting applications including the GL module, the Homeownership System and other systems/applications; utilizes data migrated from the current financial/accounting applications (excluding GL data); takes advantage of modern application programming features and processing efficiencies; and can be fully supported by CalHFA business and technical staff after successful completion of the vendor contract.

Benjamin wrote the data conversion plan and Perl scripts in order to convert the legacy Queo data and data structures. Additionally, he re-factored data structures, created the physical model, data dictionary and converted the legacy code base to SQL stored procedures in order to support reporting and the functionality of the .NET application, as well as creating reports using SQL Server Report Server.

Hardware/Software: C#, Microsoft SQL Server

Timeframe: 10/2008 to 6/2009
Company Name: California Alcohol and Drug Programs
Company Location: Sacramento, CA

Project Description: ADP identified the need for a centralized repository to reduce redundancies in their enterprise data. PCG Technology Consulting was brought in to perform a business analysis; assist with the development of a business case and problem summary; develop business, functional and technical requirements; and design of the logical model and physical database.

The PCG Technology Consulting Team interviewed ADP Staff and documented ADP's business needs in accordance with California's SIMM Requirements. As part of the business analysis, PCG TC also determined existing provider data repositories, interviewed the business owners to gather functional requirements and determine data elements relevant to the provider side of the PRIMe solution. PCG TC then proposed a logical design for the provider database and completed the project by providing a physical database design and technical design documentation.

As Database Architect, Benjamin participated in interviewing ADP business owners to determine provider information relevant to the PRIMe initiative, business requirements and data needs. Benjamin created the logical model, ERDs, data dictionary and ultimately created the physical database design. He also assisted with the functional requirements, the technical design documentation and the physical implementation.

Hardware/Software: Oracle

Timeframe: 8/2008 to 12/2008
Company Name: Governor's Office of Emergency Services
Company Location: Sacramento, California

Project Description: OES required an FSR in order to upgrade its Response Information Management System (RIMS) from a Lotus Notes based application to a web application with a relational database. This FSR needed to identify the business needs of OES, document the deficiencies of the existing system and determine whether or not existing commercial applications would meet the needs of OES to provide an emergency management system.

The PCG Technology Consulting Team, surveyed and interviewed OES Staff, counties, cities and other states, performed a market analysis and assessed the viability of the marketplace in terms of OES' needs. PCG TC Team (formerly Eclipse Solutions) then prepared FSR documentation according to California's SIMM Requirements.

As Technical Analyst, Mr. Robinson was responsible for interviewing OES IT staff to determine current and planned infrastructure in relation to RIMS. He performed the market research and analysis, interviewed OES staff, other states, counties and agencies. Benjamin also helped to document the Team findings, business needs, business case and proposed solution as well as the assisting with the creation of presentations for executive staff.

Hardware/Software: n/a

Timeframe: 10/2007 to 6/2008
Company Name: California Department of Corrections and Rehabilitation
Company Location: Sacramento, California

Project Description: The CDCR Programming Services for Parole Automated Systems Support provided consulting services for application development and for maintenance upgrade of the Central FILE Tracking System (C-FILE) and design and development of the Due Process Interim Tracking System (DPITS).

C-File was a legacy Delphi application that PCG TC rewrote to a web-based .NET 2.0 solutions, written in C#. This rewrite also required the redesign for the database and the cleanup and conversion processes for the existing 4.5 million rows of data.

DPITS is a highly scalable web application used for auditing due process compliance within CDCR Office of Court Compliance. DPITS was created using ASP.NET written in C# using the Microsoft Enterprise Library to communicate with the database server. Data access objects coded to support use of the Windows Communication Foundation to implement SOA interfaces. Two of the most important requirements were to provide an application that was able to dynamically add and remove fields in response to evolving auditing requirements and a flexible querying tool. Active Directory authentication was used to determine application roles and control access to the application.

In order to change data elements and forms without modifying the database schema, an Entity Attribute Value (EAV) model was implemented. Data elements are stored as metadata within the database. The metadata is used to create and define application controls that permit users to define new custom item

types as well as to maintain values for dropdown and checkbox lists, all through the frontend administration module. This metadata is read by the web server which then uses dynamic forms and dynamic controls to generate pages. This lets the business owners change application fields without incurring additional development costs and provides strong analytical reporting capabilities.

Benjamin played a key role in working with the Office of Court Compliance to determine the business requirements and technical specifications for the Due Process Tracking System. Mr. Robinson translated the business rules to a logical design model and then implemented a well normalized physical database. All data access was supported by stored procedures, which he coded. As well, he created views to denormalize certain ideas and developed functions to accommodate business needs. He was integral in the knowledge transfer to CDCR staff and assisting with training and troubleshooting Oracle issues. Benjamin also created proof of concept webpages for reporting functionality using C# and ASP.NET.

Hardware/Software: C#, ASP.NET, Oracle

Timeframe: 11/2007 to 5/2008
Company Name: Employment Development Department
Company Location: Sacramento, California

Project Description: The EDD UIB needed an independent validation and verification of the Unemployment Insurance Data Validation (UIDV) process. PCG Technology Consulting conducted IV&V of the process and submitted a certification to both EDD UIB, and to the Employment and Training Administration (ETA) of the Department of Labor (DOL). The certification documented that the EDD UI Data Validation Extract Files for which EDD's UI Branch is responsible are in agreement with the Federal requirements submitted by DOL to the EDD.

Benjamin was responsible for business rule and source code reviews. He examined the processes that performed the extracts from IDMS and DB2 databases and validated the interpretation and creation of the extract files.

Hardware/Software: COBOL

Timeframe: 2/2003 to 11/2007
Company Name: California Department of Parks and Recreation
Company Location: Sacramento, California

Project Description: Benjamin installed and upgraded SQL Server, implemented standard backup and maintenance routines, performed database server migrations, security audits, replication implementations, disaster recovery, performance tuning, database design and changes, data modeling, data conversions, indexing, object changes, developer support and training as well as other standard database administration tasks. Additionally, he performed data analysis to assist with IT management decisions and developed an ASP application to monitor all SQL Server instances (utilization, job results, backups, disk space monitoring) and created reports (SSRS) to present DBA related metrics.

Hardware/Software: Microsoft SQL Server

Timeframe: 5/2007 to 8/2007
Company Name: California Schools Information System
Company Location: Sacramento, CA
Project Description: The SRRTS application is related to assisting Local Education Agencies (LEA) (students from K-12) in transmitting State reporting to the California Department of Education and also with maintaining student data. PCG Technology Consulting was asked to provide an analysis on problems that SRRTS had been experiencing that affected production processing, and recommend any changes that would improve application performance.

Mr. Robinson's primary responsibility was to perform an extensive analysis of the database design and database performance. This analysis included assessing whether the design was effectively using current technologies (namely SAN and cluster configurations and replication), SQL query analysis, index design

and stored procedure analysis. Any design elements that could be changed to perform more effectively and to within industry standards were outlined in the assessment. As well as design recommendations, a deeper analysis of the system was performed via system testing in an attempt to reveal root causes of the production problems. Through effective SQL tuning, performance gains from the database servers was achieved; for example, one query that initially ran for over four hours was tuned to run in 12 minutes. The outcome of the system analysis provided recommendations on architectural changes, database changes, SQL query approaches, and configuration changes.

Hardware/Software: Microsoft SQL Server, Java

Timeframe: 2/2007 to 9/2007
Company Name: California Department of Corrections and Rehabilitation
Company Location: Sacramento, California
Project Description: PCG Technology Consulting rewrote the Parolee-At-Large Revocation Tracking System (PALRTS). The Microsoft .NET 2.0 web-based application replaced a client/server Delphi 1 application and is the base application allowing Law Enforcements ability to track Parolee-At-Large (PALs) and others who associate with the PAL. This solution was written in C# and created from Service Oriented Architecture principles and patterns.

Mr. Robinson was responsible for modifying the database (Oracle 10g) to accommodate additional functionality. This resulted in normalizing portions of the existing schema, adding contrived keys to simplify record references and eliminating direct DML statements by creating stored procedures to control all data access.

Hardware/Software: .NET, Oracle

Timeframe: 9/2002 to 3/2003
Company Name: California Statewide Automated Welfare System
Company Location: Sacramento, CA
Project Description: Technical architecture and design assessment of Consortium IV, a Statewide Automated Welfare System (SAWS) development project supporting 6,600 users in 127 sites across 4 California counties. The project evaluated the infrastructure architecture including servers, networks, software, and management processes for this n-tier, J2EE, web-based system. The technology components consisted of Sun Microsystems servers running the Solaris operating system, Oracle RDBMS, BEA WebLogic server; Apache web server, Cisco Systems network equipment, and Intel-based Windows XP workstations.

Benjamin developed a Microsoft Access application and reports to track program data and metrics.

Hardware/Software: Microsoft Access

Timeframe: 1/2002 to 5/2002
Company Name: Sierra Health Services
Company Location: Las Vegas, NV
Project Description: SHS replaced their Microsoft Access provider application with a Visual Basic application using an Oracle 8i backend.

Mr. Robinson worked with SHS database administrators to design the provider database. He was responsible for the development of the stored procedures and views to support the application and reporting requirements.

Hardware/Software: Oracle, Visual Basic

Timeframe: 1/2003 to 2/2003
Company Name: California Department of Community Services and Development
Company Location: Sacramento, CA
Project Description: CSD regularly receives a list of Social Security numbers associated with the deceased, the SSA Death Master File. This data needs to be checked against enrollees to multiple programs.

Benjamin created a database (Sybase ASE 12.0) to store the millions of rows, automated the monthly population process and developed stored procedures used by multiple applications.

Hardware/Software: Sybase

Timeframe: 6/2001 to 12/2002
Company Name: California Department of Community Services and Development
Company Location: Sacramento, CA
Project Description: Two of CSD's key databases were experiencing issues with performance and data integrity.

Benjamin identified application issues, tuned indexes and suggested maintenance jobs. To correct the data integrity issues, cleanup scripts were written and primary/foreign keys were modified and implemented.

Hardware/Software: Sybase

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Glendale Community College, Glendale, California
Computer Science

Clark County Community College, Clark County, Nevada
English

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Certified Information Systems Security Professional (CISSP), March 2014

GIAC Penetration Tester (GPEN), December 2014

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Linux, Windows Server, VMWare, VirtualBox
Microsoft SQL Server, Oracle, Sybase
C, Python, SQL, PHP

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Melanie Brueske
Washington Department of Health
Phone: 360-236-4356; Fax; n/a
Melanie.Brueske@DOH.WA.GOV

Lim Yong
Hawaii, Department of Human Services
Phone: 808-692-8071; Fax; n/a
lyong@medicaid.dhs.state.hi.us

Anne McIntyre
California Department of Social Services
Phone: 916-651-5567; Fax; n/a
Anne.mcintyre@dss.ca.gov

VII.14 Rob McKenney, Technical Architecture Advisor

Company Name Submitting Proposal:	*Public Consulting Group, Inc.*

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	*Robert McKenney*	**Key Personnel: (Yes/No)**	*No*
Classification; i.e., Project Manager, Implementation Lead, etc.	*Technical Architecture Advisor*		
# of Years in Classification:	*16*	**# of Years with Firm:**	*3*

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Robert McKenney, a Director located in our Sacramento office, will serve as the Technical Architecture (TA) Lead for this project. Mr. McKenney has over 16 years' experience leading business strategy, operations, architecture, and technical teams in both the public and private sectors. He has extensive experience in the design, development and implementation of advanced technologies and governance processes to meet customer, financial and competitive demands. His experience also includes independent verification & validation (IV&V) and project management. His training as a Naval Nuclear Engineering Officer enables him to understand complex systems and interactions with tremendous attention to detail. His Master's degree in Business Finance from Johns Hopkins University gives him an uncommon insight and holistic understanding of performance-based business results when assessing IT investments and project portfolios. Mr. McKenney has over 10 years' experience applying that attention to detail, insight, and understanding to large-scale TA projects at public organizations, specializing in analyzing functional and informational overlap and integration of COTS, MOTS, and custom systems. His broad range of experience makes him a well-rounded collaborator when working with executives/managers and/or system integration vendors to assess and verify a system is built correctly, as well as validating the system meets program operational and business needs.

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.

Timeframe: 6/2016 to Present
Company Name: Louisiana Department of Health
Company Location: Baton Rouge, Louisiana
Project Description: The LA E&E project implements a new eligibility and enrollment system to replace the current legacy system. Performed an IV&V assessment of the project management and Enterprise Architecture (EA) practices associated with the project. Reviewed various artifacts and processes against industry standards such as IEEE 1012, ISO/IEC 42010, and Medicaid IT Architecture's (MITA) Seven

Standards and Conditions. Identified risk areas and suggested mitigation strategies, as well as highlighting strong points.

Hardware/Software: MS Office Suite, JAMA Software, JIRA Software

Timeframe: 1/2016 to Present
Company Name: Office of Systems Integration (OSI)
Company Location: Sacramento, California
Project Description: Developed a Shared Services Strategy and to realize the California Health and Human Services Agency (CHHSA) vision of leveraging shared services to reduce costs and improve efficiency in statewide IT solutions. Incorporated elements of the Federal Shared Services Strategy and Information Technology Infrastructure Library (ITIL) into the concepts and definitions of the strategy.
Identified and adapted the National Human Services Interoperability Architecture (NHSIA) as the reference architecture for CHHSA, while ensuring compliance with MITA Seven Standards and Conditions. Introduced the NHSIA framework and showed how to use it to align projects and services.
Established an EA repository, with supporting tools and processes, to develop and maintain a current inventory of systems, applications and services. This inventory included profiles aligning systems, applications, and services to NHSIA and MITA architecture domains.
Conducted an assessment of existing IT solutions and rated them as candidates for supplying shareable services. The results were used to identify which solutions to focus development efforts on.

Hardware/Software: Sparx Enterprise Architect

Timeframe: 2/2016 to Present
Company Name: Georgia Department of Community Health (DCH)
Company Location: Atlanta, Georgia
Project Description: Developed an Enterprise Technical Management Strategy (ETMS) to support maturing the GA Medicaid Enterprise technical architecture to MITA level 3. Additional support includes developing governance structures for technical service management, inventorying current business and technical services, establishing the technical reference model (TRM).

Hardware/Software: Sparx Enterprise Architect

Timeframe: 1/2015 to 12/2015
Company Name: Office of Systems Integration (OSI)
Company Location: Sacramento, California
Project Description: Performed an alternative analysis for the Welfare Data Tracking Implementation Project (WDTIP), to update delivery of statewide time-on-aid (TOA) information services supported by the Tracking Recipients Across California (TRAC) application. Provided pros and cons for several options and recommending a service-enabled solution for replacing TRAC with a shared, state-wide service. Identified the conceptual solution architecture and a roadmap for development that factored in state funding/budget cycles.
Developed a draft method for populating and managing a system/solution inventory for SAWS to improve portfolio management. Outlined the basic process for performing systematic, repeatable data collection, as well as metrics and analytical reports.

Hardware/Software: MS Office Suite

Timeframe: 4/2015 to 7/2015
Company Name: California Department of Managed Health Care (DMHC)
Company Location: Sacramento, California
Project Description: Performed an independent assessment of the DMHC's needs, capabilities, and strategic alignment regarding a Customer Relationship Management (CRM) solution. Reviewed all aspects of a previous, unsuccessful CRM implementation project and provided feedback identifying root causes and possible mitigations for future efforts. Assessed the DMHC's business requirements against industry

standards and best practices, making recommendations for new high-level business requirements. Developed a set of specific, actionable recommendations and timeline for stabilizing existing capabilities and developing future capabilities in alignment with Office of Systems Integration (OSI) strategic goals and objectives, as well as relevant portions of MITA's Seven Conditions and Standards.

Hardware/Software: MS Office Suite

Timeframe: 11/2014 to 3/2015
Company Name: California Department of Health Care Services (DHCS)
Company Location: Sacramento, California
Project Description: The CA-MMIS System Replacement Project (SRP) implements a new Medicaid Management Information System (MMIS) to replace the current legacy system. Performed an IV&V assessment of the EA practices associated with SRP. Reviewed all aspects of the program (e.g., framework, processes, artifacts, tools) against industry standards such as IEEE 1012, ISO/IEC 42010, The Open Group Architecture Framework (TOGAF) architecture development method, and MITA Seven Standards and Conditions. Resulting report clearly identified risk areas and suggested mitigation strategies, as well as highlighting strong points.

Hardware/Software: MS Office Suite

Timeframe: 4/2013 to 10/2014
Company Name: California Department of Corrections (CDCR)
Company Location: Sacramento, California
Project Description: Responsible for maturing the EA program consistent with the California Enterprise Architecture Framework (CEAF) model, TOGAF, and MITA, focusing on Business Architecture, Data Architecture, governance and rules management. Performed architectural assessments/alignments of multiple COTS/MOTS systems within the CDCR EA modeling tool.
Refined the existing business architecture to better highlight functional overlap among systems and identify integration/consolidation candidates. Resulted in more transparency for decision-makers and business users, with better alignment to strategic goals and objectives.
Refined the existing data architecture to better highlight information/data overlap between systems to identify integration and information sharing opportunities. Identified data relationships to improve governance and management of Enterprise data and streamline collection and classification of system data elements. Resulted in more transparent, business friendly governance processes and analytical tools.
Matured the CDCR use of Troux Metaverse as an architecture repository. Created several custom models, entities, and templates. Drafted user guides and provided training for CDCR staff in performing customizations and data collection/import.

Hardware/Software: MS Office Suite, Troux Metaverse

Timeframe: 10/2010 to 6/2013
Company Name: California State Teachers Retirement System (CalSTRS)
Company Location: Sacramento, California
Project Description: Responsible for maturing the EA program consistent with the Federal Enterprise Architecture (FEA) model and TOGAF methodology. Responsible for developing architectural governance processes, reference models, targets and transition plan. Led/mentored 6-member architecture team. Performed architectural assessments/alignments of multiple COTS/MOTS systems.
Developed a method and metrics for scoring projects and work-efforts, assessing their functional and informational architectures, as well as linking them to strategic planning tools and Balanced Scorecard metrics. Worked directly with project teams and organizational units to assess/verify system scores and profiles within the method. This method improved transparency and objectivity in identifying likely interoperability and integration points for COTS systems, allowing better prioritization of resources among CalSTRS' project portfolio.

Authored a new Requirements Management Plan (RMP) defining the structure, activities, roles and responsibilities for managing requirements as traceable, reusable assets. Identified steps for requirement validation and verification in accordance with Business Analyst Body of Knowledge (BABOK) standards. Developed a temporary database solution to house requirements for a major pension system overhaul during acquisition of a requirements management tool.
Refined existing the governance program by defining specific architecture services and metrics. Defined a new framework/model for policy governance, resulting in more streamlined & standardized policy development across the organization.

Hardware/Software: MS Office Suite, JAMA Software

Timeframe: 1/2005 to 9/2010
Company Name: US Department of Homeland Security (DHS)
Company Location: Washington, D.C.
Project Description: Responsible for EA planning, verification, and validation for the Department of Homeland Security, Preparedness Directorate (PD). Responsible for conducting IT governance evaluations to ensure projects comply with the department's EA and the FEAF.
Developed the EA alignment method (EAAM) and toolkit used for planning and verifying/validating IT system compliance. The method/toolkit increased the understanding of EA among project managers, captured key governance metadata and increased visibility for system reuse within the PD.
Applied the EAAM and toolkit to develop quantified EA metrics. Leveraged the metrics to provide critical business intelligence and IV&V support for IT governance review boards, including verification/validation of functional and informational overlap among over 46 COTS systems then in use or being acquired by DHS. Enabled the PD to keep pace with all planned and emerging initiatives and priorities, while identifying/validating opportunities for consolidation and reuse of existing systems.
Lead architect and subject matter expert for PD pilot SOA program. Defined the business case, functional description of services and initial governance criteria/process to service-enable PD systems.

Hardware/Software: MS Office Suite, Troux Metaverse

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Johns Hopkins University, Baltimore, Maryland
M.S in Business, with Corporate Finance concentration
May 1997

US Naval Academy
B.S. in Aerospace Engineering
June 1988

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Information Technology Infrastructure Library (ITIL) v3 Foundation in IT Service Management, April 2016
Certified Scrum Product Owner®, July 2017

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

MS Office Suite (including Access, Visio, and Project), Troux Metaverse, Sparx Enterprise Architect, JAMA Software, JIRA Software

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Keith Krautter
California Office of Systems Integration (OSI)
Phone: 916-263-8636; Fax; n/a
keith.krautter@osi.ca.gov

Marty Hicks
Georgia Dept. of Community Health
Phone: 404-656-4464; Fax; n/a
mhicks2@dch.ga.gov

Danny Murnane
LA Dept. of Hospitals
Phone: 225-925-6017; Fax; n/a
danny.murnane@la.gov

VII.15 Earl Burba, Technical Architecture Advisor

Company Name Submitting Proposal:	***Public Consulting Group, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	✓	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Earl Eugene Burba***	**Key Personnel: (Yes/No)**	***No***
Classification; i.e., Project Manager, Implementation Lead, etc.		***Technical Architecture Advisor***	
# of Years in Classification:	***8.5***	**# of Years with Firm:**	***8.5***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Burba, a resident of Denver, Colorado, has over 30 years of extensive experience in the science and information technology industry with expertise in systems design, requirements analysis, object-oriented design and development, independent verification and validation (IV&V), and quality assurance (QA) of large, complex, and multi-faceted systems and applications. Mr. Burba has a strong ability to analyze, develop, and institute needed procedures and policies for the projects he leads. He also possesses outstanding interpersonal and tested negotiation skills to help build lasting and supportive client/associate/management relationships. He also has experience in all phases of the project development life cycle. Finally, Mr. Burba has extensive experience in leading efforts, writing technical documentation, developing, analyzing and validating architecture and design documents and models.

Mr. Burba is the lead for contracts calling for requirements management and test evaluation or execution. He has supported IV&V of multiple projects implementing detailed complex interface requirements spanning multiple agencies. In this capacity, he applies technical analysis skills to define the scope of the material under review and then develops the corresponding analysis approach. In many cases, Mr. Burba develops or directs development of tools to accomplish this work. The toolsets attributed to Mr. Burba's direct involvement include Excel tools for Test Management and Visual Basic scripts that read documents and extract comments and similar tools that support consolidation of data in meaningful ways.

Mr. Burba is certified by the American Software Testing Qualifications Board at an advanced level and sits on the Technical Advisory Group for ASTQB. Mr. Burba is the lead technical tester for PCG work to verify Wave Testing, as defined by the CMS for implementation of the ACA required Health Benefits Exchanges. This requires analysis of large amounts of data produced by the states to verify the federal standards have been met.

Mr. Burba has supported several PCG projects as the lead IV&V Technical Analyst and takes ownership of detailed analysis tasks in this role. Most recently Mr. Burba has reviewed and provided recommendations for Agile test planning artifacts, including test cases test results and performance testing. Additionally, Mr. Burba has been involved in projects involved in a phased implementation approach where old and new system environments required coordination to support system development and testing activities.

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.

Timeframe: 1/2017 – Present
Company Name: Colorado Department of Human Services (CDHS)
Trails Modernization Project
Company Location: Denver, CO
Position Title: Lead Technical IV&V Analyst

Project Description: Mr. Burba is responsible for the determination of technical conclusions based on his in-depth analysis. Mr. Burba customizes the PCG Quality Checklists and prepares Interview guides. He interviews project stakeholders to verify process execution, and reviews deliverables including plans, design documentation, and test plans and procedures. The areas of interest and assessment include Project Management, Quality Assurance, Training, Requirements Management, Operating Environment, Development Environment, Software Development, System and Acceptance Test, and Data Management.

Mr. Burba works closely with vendor personnel as well as with CDHS Trails Modernization project personnel. This facilitates gathering of all the information required to understand the design and requirements. Mr. Burba writes technical assessment results for the Quarterly IV&V Review Reports and develops findings with actionable mitigation steps.
The Trails Modernization project is planned as a phased modular implementation approach to replace the legacy Trails system, which is SACWIS (State Automated Child Welfare Information System) compliant. At the time of this IMP update, the vendor for Phase 2-Assess/Commit and Phase 3-Case has been selected and it is CGI, that same vendor currently delivering Phase 1. The IV&V contract also is structured by phase, and currently PCG and OIT are in process amending the IV&V contract to include phases 2 and 3.

Hardware/Software: State SAN, Servers, firewall, routers, switches
Software: HP ART, HP testing toolset, HP ALM, Microsoft TFS, Microsoft office tools, JavaScript, HTML5, CSS 2.1, and CSS 3, Microsoft .NET 4.5, Selenium, Apache JMeter, CGI Mobile IDE, MS Sharepoint

Timeframe: 1/2016 – Present
Company Name; Colorado Department of Corrections (CDOC)
Electronic Health Records-Offender Management System (EHR-OMS) Project
Company Location: Denver, CO
Position Title: Lead Technical IV&V Analyst

Project Description: Mr. Burba is responsible for the determination of technical conclusions based on his in-depth analysis. Mr. Burba customizes the PCG Quality Checklists and prepares Interview guides. He interviews project stakeholders to verify process execution, and reviews deliverables including plans, design documentation, and test procedures. The areas of interest and assessment include Planning Oversight, Project Management, Quality Management, Training, Requirements Management, Software Development, System and Acceptance Test, and Data Management.

Mr. Burba works closely with vendor personnel as well as with CDOC EHR-OMS Project personnel. This facilitates gathering of all the information required to understand the design and requirements. Mr. Burba writes technical assessment results for the Quarterly IV&V Review Reports and develops findings with actionable mitigation steps.

The Colorado Department of Corrections (CDOC) and Governor's Office of Information Technology (OIT) is undertaking modernization of the Electronic Health Records-Offender Management System (EHR-OMS) Project. This project is using a phased implementation approach to replace functionality of several CDOC legacy systems with COTS products customized to meet the needs of the state. The DeCORuM system is the Colorado Department of Corrections implementation of Marquis electronic Offender Management

Information System (eOMIS) software. Marquis will work with the State of Colorado OIT team and the CDOC Subject Matter Experts to configure, customize, deploy, and maintain the system.

Hardware/Software: Java, JavaScript, HTML, Microsoft .Net framework, JIRA, Microsoft office tools, Oracle 12c. HP ALM

Timeframe: 10/2015 – Present
Company Name: Colorado Department of Labor and Employment (CDLE) Workers Compensation (COWC), Workers' Compensation Mainframe Migration and Modernization Project
Company Location: Denver, CO
Position Title: Technical IV&V Analyst

Project Description: Mr. Burba is responsible for the determination of technical conclusions based on his in-depth analysis. Mr. Burba writes technical assessment results for the Quarterly IV&V Review Reports and develops findings with actionable mitigation steps. The areas of interest and assessment include Planning Oversight, Project Management, Quality Management, Training, Requirements Management, Software Development, System and Acceptance Test, and Data Management.

The Division of Worker's Compensation (DOWC) Mainframe Migration is technically administered by the Colorado Governor's Office of Information Technology (OIT) and sponsored by the business owner, the Colorado Department of Labor and Employment (CDLE) DOWC. DOWC embarked on the Mainframe Migration and Modernization project to first migrate and then modernize the Worker's Compensation System.

Hardware/Software: Microsoft office tools, Maxenso toolset, JIRA

Timeframe: 9/2014 – Present
Company Name: Colorado Department of Parks and Wildlife (CPW), Integrated Parks and Wildlife System (IPAWS) Combined Healthcare
Company Location: Denver, CO
Position Title: Project Manager/Technical IV&V Specialist

Project Description: Mr. Burba is responsible for the determination of technical conclusions based on analysis, especially of the requirements management and test task areas that PCG will be reviewing as the IV&V partner particularly the System, QA, Performance/Stress/Load, and User Acceptance testing areas. Additionally, Mr. Burba has the task of reviewing the installation guides and manuals for the Hardware and Software and computer equipment to be delivered and installed at Parks and Wildlife sites. Finally, he is responsible for supporting system readiness reviews to help assure that there is an independent voice regarding the go/no-go decision for deployment.

The Integrated Parks and Wildlife System (IPAWS) project is technically administered by the Colorado Governor's Office of Information Technology (OIT) and sponsored by the business owner, the Colorado Parks and Wildlife (CPW) division of the Department of Natural Resources (DNR). CPW embarks on this project to consolidate and improve the systems that serve both Parks and Wildlife.

Hardware/Software: Microsoft office tools, Cloud-based servers hosted by Active

Timeframe: 11/2014 – 6/2015
Company Name: Colorado Department of Human Services (CDHS), Child Welfare Hotline-Call Routing (Hotline)
Company Location: Denver, CO
Position Title: Project Manager/Technical IV&V Specialist

Project Description: Mr. Burba is responsible for the IV&V project management of services including risk, defect, and test oversight. Helping to assure that the project is successfully implemented in all Colorado Counties and provides the needed functionality to provide call routing for the Child Abuse Hotline.

The Colorado Child Abuse and Neglect Hotline Reporting System Project developed and installed a public access telephone number to the State's existing county offices supporting child welfare management. The

incorporation of a statewide publicly accessible hotline number provides a communication outlet to support the safety and welfare of children.

Hardware/Software: Microsoft office tools, Cloud-based solution provided by CenturyLink, Genesys Agent Desktops

Timeframe: 7/2012 – 3/2015
Company Name: Nevada Department of Health and Human Services (DHHS), Division of Welfare and Supportive Services (DWSS), Eligibility Engine (EE), and Business Operations Solution (BOS) Projects
Company Location: Carson City, N
Position Title: IV&V Verification Lead

Project Description: Mr. Burba is responsible for supporting the project by performing IV&V activities including the system software and hardware architectures for HCR-EE and BOS, requirements management, configuration management, test management, project management, change management, organizational change management, and validation of rules tables in implemented by HCR-EE.

The state of Nevada's goal is to provide a Business Operations Solution (BOS) to support the information technology and business processes / procedures of the Exchange in order to begin enrolling people in health insurance coverage by October 1, 2013. The e-government solution will be based on secure browser-based applications, including online public assistance application processing by BOS, and eligibility determined using the HCR-EE, which is a business rules management system and utilizes business rules engines and logic to determine eligibility.

Hardware/Software: Xerox hosted data centers, SaaS, PaaS, IaaS, VMware, Microsoft office tools, Bugzilla, WATIR, Fiddler2, ParosProxy, Testopia, JMeter, SoapUI

Timeframe: 12/2011 – 8/2014
Company Name: Colorado Office of Information Technology (OIT) and Department of Human Services (CDHS), Colorado Automated Child Support Enforcement System (ACSES) Migration Project
Company Location: Denver, CO
Position Title: IV&V Senior Technical Analyst/Project Manager

Project Description: Mr. Burba is responsible for developing monthly IV&V Assessment Reports. Developing an Independent Test Verification (ITV) Plan that served as an umbrella master plan to ensure the migrated system met all requirements. The ITV defined the acceptance criteria to move between test phases (system, integration, UAT). It also contained PCG's requirements management matrices which were used to define and support test verification. Conducted Gate Reviews with the project team to verify all acceptance criteria prior to entering each test phase. The areas of interest and assessment included Planning Oversight, Project Management, Quality Management, Training, Requirements Management, Software Development, System and Acceptance Test, and Data Management.

The ACSES Migration Project transferred the data and code from the state's 30-year legacy mainframe system using Natural/Adabas to a new platform using Java and Oracle. PCG was contracted as the IV&V vendor overseeing the work products and processes of the Migration and PMO vendors and supporting UAT.
Hardware/Software: Colorado Data Center and servers, Maxenso Natclipse, Maxenso Lifecycle-Manager, Maxenso Meeclipse, Maxenso Mee, Microsoft office tools, JIRA, Java, JavaScript

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

University of Denver, Colorado
MS, CIS, Emphasis in Software Engineering
November 1992

Colorado State University
BS, Computer Science
December 1984

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

PMP Certification, PMI Institute, ID#: 868476, April 2007

ITIL Certification, December 2012

ASTQB (CTFL, CTFL-AT, CTAL Full, CTEL-TM Full), member of the Technical Advisory Group, member of the ASTQB Board of Directors

Eclipse® IV&V Methodology Certification, November 2015

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Languages:	J2EE, VB .Net, C/C++, HTML, CGI Applications in Perl, Java Scripting, UNIX (sed, nawk, egrep etc.), FORTRAN 77, PASCAL, Assembly (M362S, MS-1750a, 8086), Ada, COBOL
Hardware:	WinTel, Macintosh, Sun, Silicon Graphics, CDC Cyber, VAX-11, ELXSI 6400, HP (3000, 9600, 9836), PDP 11/44, DEC 10
Operating Systems:	Windows 9X Kernel, Windows NT Kernel, Windows XP Kernel, Mac O/S, Sun OS, Solaris, EMBOS, NOS, VMS, CP/M, DOS
Development & Test Methodologies:	Rational Unified Process, Rapid Prototyping, Total Systems Development (TSD), Standard methodologies (waterfall, iterative, etc.)

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name: Carlos Rodriguez
Organization: Department of Parks and Wildlife
Phone number: 303.291.7245
Email: carlos.rodriguez@state.co.us

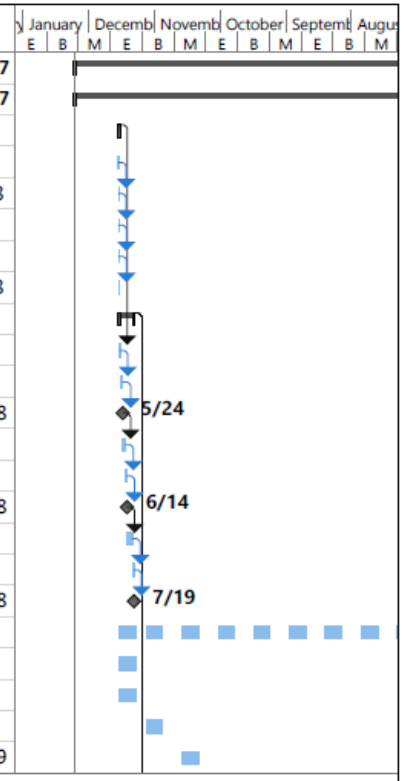
Name: Roger Sulzbach
Organization: Department of Corrections
Phone number: 719.226.4145
Email: Roger.Sulzbach@state.co.us

Name: Lucile Williams
Organization: Department of Human Services
Phone number: 303.866.7284
Email: lucile.williams@state.co.us

VIII. PRELIMINARY IV&V PROJECT PLAN

The following is PCG's Preliminary IV&V Project Plan developed for the Replacement Project. This plan will be reviewed with the Replacement Project upon project initiation and finalized as appropriate. PCG will updated the Project Plan throughout the duration of your project.

ID		Task Mode	Task Name	Duration	Start
1			**NV CSE IV&V**	**1232 days**	**Thu 9/21/17**
2			**Planning and Administration**	**1232 days**	**Thu 9/21/17**
3			**IV&V Project Kick-off**	**5 days**	**Tue 5/1/18**
4			Validate Kick-off Requirements	1 day	Tue 5/1/18
5			Prepare Kick-off Materials	1 day	Wed 5/2/18
6			Review Kick-off Materials	1 day	Thu 5/3/18
7			Attend Project Kick-off Meeting	1 day	Fri 5/4/18
8			Submit Kick-off Notes for Review	1 day	Mon 5/7/18
9			**Preliminary Project Plan**	**53 days**	**Tue 5/8/18**
10			Submit Deliverable Summary Document	3 days	Tue 5/8/18
11			Develop the Plan	10 days	Fri 5/11/18
12			Submit Draft to DWSS Cont. Mangr./OCSE	0 days	Thu 5/24/18
13			DWSS Cont. Mangr./OCSE for Review	10 days	Fri 5/25/18
14			Refine the Preliminary Project Plan	5 days	Fri 6/8/18
15			Submit Revised Draft to DWSS Cont. Mangr./OCSE for Revie\	0 days	Thu 6/14/18
16			DWSS Project Stakeholder Review	20 days	Fri 6/15/18
17			Finalize Preliminary Project Plan	5 days	Fri 7/13/18
18			Deliver Final Preliminary Project Plan	0 days	Thu 7/19/18
19			**Attend Bi-Annual Meetings**	**1069 days**	**Tue 5/8/18**
20			**Attend Bi-Annual Meetings 1**	60 days	Tue 5/8/18
21			**Attend Bi-Annual Meetings 2**	60 days	Tue 5/8/18
22			**Attend Bi-Annual Meetings 3**	60 days	Fri 9/21/18
23			**Attend Bi-Annual Meetings 4**	60 days	Thu 3/21/19

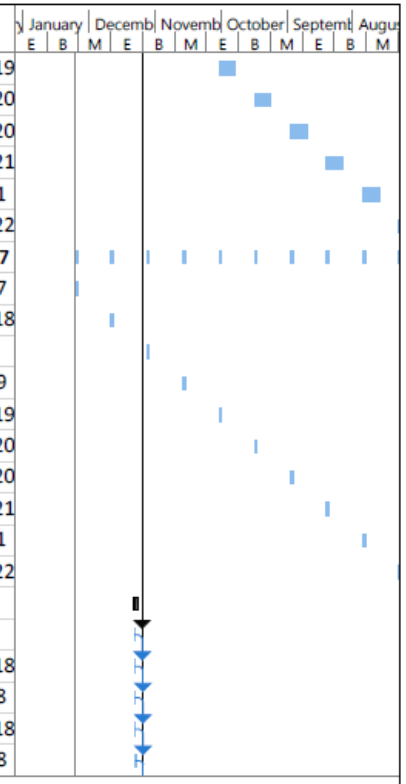


Project: NV IVV CSE Project Pla
Date: Thu 9/21/17

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Page 1

ID	Task Mode	Task Name	Duration	Start
24		**Attend Bi-Annual Meetings 5**	60 days	Mon 9/23/19
25		**Attend Bi-Annual Meetings 6**	60 days	Mon 3/23/20
26		**Attend Bi-Annual Meetings 7**	60 days	Mon 9/21/20
27		**Attend Bi-Annual Meetings 8**	60 days	Mon 3/22/21
28		**Attend Bi-Annual Meetings 9**	60 days	Tue 9/21/21
29		**Attend Bi-Annual Meetings 10**	60 days	Mon 3/21/22
30		**Bi-Annual Monthly Status Reports**	**1182 days**	**Thu 9/21/17**
31		**Bi-Annual Monthly Status Reports 1**	10 days	Thu 9/21/17
32		**Bi-Annual Monthly Status Reports 2**	10 days	Wed 3/21/18
33		**Bi-Annual Monthly Status Reports 3**	10 days	Fri 9/21/18
34		**Bi-Annual Monthly Status Reports 4**	10 days	Thu 3/21/19
35		**Bi-Annual Monthly Status Reports 5**	10 days	Mon 9/23/19
36		**Bi-Annual Monthly Status Reports 6**	10 days	Mon 3/23/20
37		**Bi-Annual Monthly Status Reports 7**	10 days	Mon 9/21/20
38		**Bi-Annual Monthly Status Reports 8**	10 days	Mon 3/22/21
39		**Bi-Annual Monthly Status Reports 9**	10 days	Tue 9/21/21
40		**Bi-Annual Monthly Status Reports 10**	10 days	Mon 3/21/22
41		**IV&V Checklists**	**8 days**	**Fri 7/20/18**
42		Submit Deliverable Summary Document	1 day	Fri 7/20/18
43		Develop the IV&V Checklists	1 day	Mon 7/23/18
44		Submit Draft to DWSS Cont. Mangr./OCSE for Review	1 day	Tue 7/24/18
45		Refine the IV&V Checklists	1 day	Wed 7/25/18
46		Deliver to DWSS for Review	1 day	Thu 7/26/18

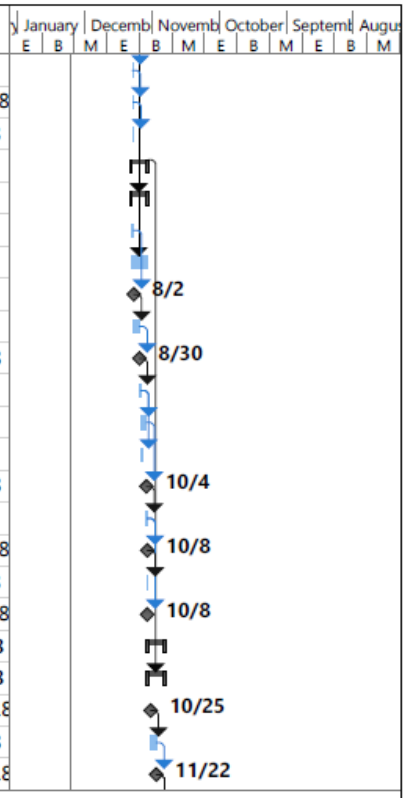


Project: NV IVV CSE Project Pla
Date: Thu 9/21/17

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Page 2

ID		Task Mode	Task Name	Duration	Start
47			Submit Final to DWSS Cont. Mangr./OCSE for Review	1 day	Fri 7/27/18
48			Finalize the IV&V Checklists	1 day	Mon 7/30/18
49			Deliver Final IV&V Checklists	1 day	Tue 7/31/18
50			**Conduct/Produce Initial IV&V Review and Report**	**60 days**	**Fri 7/20/18**
51			**Perform Initial Project Assessment**	**60 days**	**Fri 7/20/18**
52			Perform Review Period Data Collection Activities	10 days	Fri 7/20/18
53			Attend Bi-Annual Meetngs	60 days	Fri 7/20/18
54			Submit Deliverable Summary Document	0 days	Thu 8/2/18
55			Develop Draft Periodic IV&V Review Report	20 days	Fri 8/3/18
56			Submit 1st Draft to DWSS Cont. Mangr./OCSE for Review	0 days	Thu 8/30/18
57			Refine Initial 1st Draft Periodic IV&V Review Report	5 days	Fri 8/31/18
58			Submit 2nd Draft to DWSS for Review	20 days	Fri 9/7/18
59			Refine Initial 2nd Draft Periodic IV&V Review Report	5 days	Fri 9/7/18
60			Submit Final to DWSS Cont. Mangr./OCSE for Review	0 days	Thu 10/4/18
61			Develop Deliverable Observation Report (DOR)	2 days	Fri 10/5/18
62			Deliver Final Initial IV&V Review Report	0 days	Mon 10/8/18
63			Conduct Formal Briefings (Presentations)	3 days	Tue 10/9/18
64			Provide Document Archve	0 days	Mon 10/8/18
65			**Conduct/Produce Perodic IV&V Reviews and Report**	**60 days**	**Fri 10/12/18**
66			**Perform Initial Project Assessment**	**60 days**	**Fri 10/12/18**
69			Submit Deliverable Summary Document	0 days	Thu 10/25/18
70			Develop Draft Periodic IV&V Review Report	20 days	Fri 10/26/18
71			Submit 1st Draft to DWSS Cont. Mangr./OCSE for Review	0 days	Thu 11/22/18

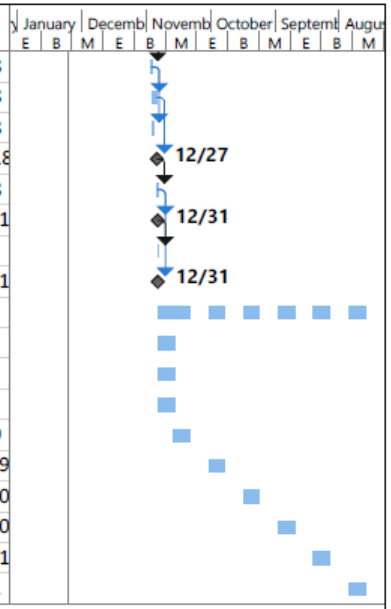


Project: NV IVV CSE Project Pla
Date: Thu 9/21/17

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Page 3

ID		Task Mode	Task Name	Duration	Start
72			Refine 1st Draft Periodic IV&V Review Report	5 days	Fri 11/23/18
73			Submit 2nd Draft to DWSS for Review	20 days	Fri 11/30/18
74			Refine 2nd Draft Periodic IV&V Review Report	5 days	Fri 11/30/18
75			Submit Final to DWSS Cont. Mangr./OCSE for Review	0 days	Thu 12/27/18
76			Develop Deliverable Observation Report (DOR)	2 days	Fri 12/28/18
77			Deliver Final IV&V Review Report	0 days	Mon 12/31/1
78			Conduct Formal Briefings (Presentations)	3 days	Tue 1/1/19
79			Provide Document Archve	0 days	Mon 12/31/1
80			**Conduct/Produce Perodic IV&V Reviews and Report**	**767 days**	**Fri 1/4/19**
81			**Conduct/Produce Perodic IV&V Reviews and Report 1**	60 days	Fri 1/4/19
82			**Conduct/Produce Perodic IV&V Reviews and Report 2**	60 days	Fri 1/4/19
83			**Conduct/Produce Perodic IV&V Reviews and Report 3**	60 days	Fri 1/4/19
84			**Conduct/Produce Perodic IV&V Reviews and Report 4**	60 days	Thu 3/21/19
85			**Conduct/Produce Perodic IV&V Reviews and Report 5**	60 days	Mon 9/23/19
86			**Conduct/Produce Perodic IV&V Reviews and Report 6**	60 days	Mon 3/23/20
87			**Conduct/Produce Perodic IV&V Reviews and Report 7**	60 days	Mon 9/21/20
88			**Conduct/Produce Perodic IV&V Reviews and Report 8**	60 days	Mon 3/22/21
89			**Conduct/Produce Perodic IV&V Reviews and Report 9**	60 days	Tue 9/21/21



Project: NV IVV CSE Project Pla
Date: Thu 9/21/17

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Page 4

IX. APPENDIX (OTHER INFORMATIONAL MATERIAL)

IX.1 Key Staff Qualifications Matrix

The following demonstrates how our IV&V Team's Key Staff meet or exceed all requirements for the replacement project.

IV&V Project Manager Qualifications	Pauline Palmer IV&V Project Manager
A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector;	✓
A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;	✓
A minimum of two (2) years of experience with systems analysis and design;	✓
A minimum of two (2) years of experience with systems development and implementation;	✓
Completed at least one (1) project within the past three (3) years that involved designing business processes and procedures and developing new systems to support the new business processes; and	✓
Completed at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders.	✓

Figure IX-1: Project Manager Key Staff Qualifications

IV&V Key Staff Member Qualifications	Laurie Thornton	Ruben Ramos	May Fung	Donna Kurtz
	IV&V Engagement Manager	IV&V Analyst	IV&V Analyst	IV&V Analyst
The IV&V Team Member for Verification Services assigned by the awarded vendor must have significant experience with industry standard and best practices regarding quality, quality assurance, and quality control principles and techniques:	✓	✓	✓	✓
A minimum of two (2) years of IV&V experience on projects involving the implementation of new business processes and procedures and new automated systems to support the new business processes;	✓	✓	✓	✓
A minimum of two (2) years of IV&V experience on projects relating to the implementation of secure Internet applications;	✓	✓	✓	✓
Completed at least one (1) project within the past three (3) years that involved the receipt, installation, operation and maintenance of computer equipment and software for a Child Support Enforcement or similar large systems;	✓	✓	✓	✓
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;	✓	✓	✓	✓
Completed at least one (1) project within the past three (3) years that assessed training plans involving the development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems;	✓	✓	✓	✓
A minimum of two (2) years of IV&V experience related to system and user acceptance tests utilizing automated testing tools for a similar sized project;	✓	✓	✓	✓
Completed at least one (1) project within the past three (3) years that involved determining the readiness of the system production;	✓	✓	✓	✓
Broad experience with technical writing;	✓	✓	✓	✓
Demonstrated knowledge of Title IV, Part D of the Social Security Act;	✓	✓	✓	✓
Detailed knowledge of the Automated Systems for Child Support Enforcement: A Guide for States 2009;	✓	✓	✓	✓
Completed at least (1) project within the past three (3) years that involved determining the readiness of the system production;	✓	✓	✓	✓

Figure IX-2: Key Staff Qualifications

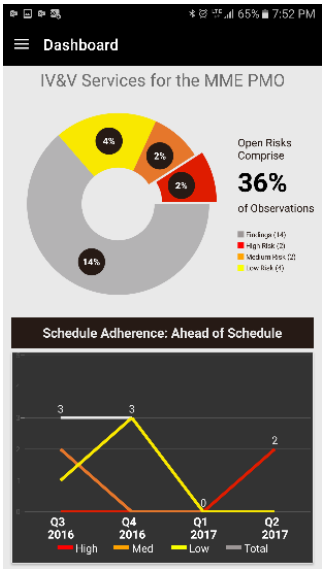
IX.2 PCG Mobile Application

PCG offers our free to the client, exclusive, first-to-market IV&V Mobility Solution, PCG | insight. We recognize and appreciates the need for access to the most up-to-date information and metrics regarding project status and progress, and have built PCG | insight to meet that need.

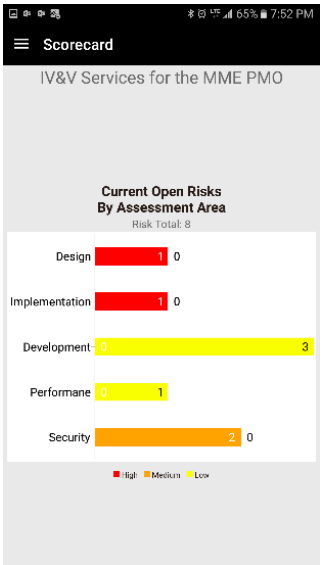
With the ability to deliver content directly to mobile devices, our team is able to provide critical insight in near-real time to authorized project stakeholders—secure, seamless mobile access to project communications and information, whenever and wherever they need it. As a supplement to formal reporting, PCG | insight serves as a practical summary and allows us to extend our 'no surprises' philosophy to our engagements, delivered through an intuitive, graphic interface:

- ***Interactive metrics-based project Dashboard and Scorecard;***
- ***High-level Project Milestone Schedule;***
- ***Filterable/Searchable Findings Log; and***
- ***Additional features and functionality are underway!***

DASHBOARD
Presents a graphic, intuitive interface displaying overall project health status



SCORECARD
Presents a graphic depiction of performance indicators by assessment area



OBSERVATIONS
Presents a tabularized presentation of IV&V findings (risks, issues, etc.)

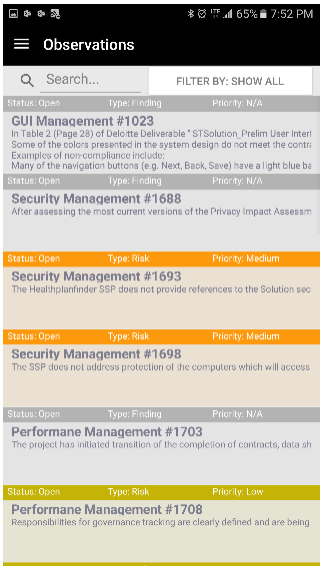


Figure IX-3: PCG | insight Mobile App

PCG | insight can easily be accessed on the go by a project sponsor, director or other authorized stakeholder while in an executive steering committee meeting, a risk and issues meeting or anywhere PCG | insight provides value. We are proud to offer a host of services and tools providing access to our extensive knowledge base along with our core services, uniquely positioning us to deliver the most complete and comprehensive services.

IX.3 IVVMP Work Sample

The following is a sample of an IV&V Management Plan developed by PCG while supporting the California Medicaid Management Information System (CA-MMIS).

Department of Health Care Services

California – Example IV&V MMIS Project (EX-MMIS)

Independent Verification and Validation (IV&V) Plan

Version 1.0

May 11, 2016

Document History

Version	Date	Brief Description of Modifications
1.0	05/11/2016	Draft Submittal

Document Author & Contact Information

Name	Title	Contact Information
Micky Mouse	Project Manager/IV&V Lead	Micky.Mouse@pcgus.com

Document Review and Sign-off

Name	Title	Signature	Date

Table of Contents

1. PURPOSE 1
1.1. IV&V Scope 1
1.2. IV&V Goals 5
1.3. IV&V Plan Deviations from PCG Proposal 6
1.4. IV&V Plan Format 7
2. REFERENCED DOCUMENTS 1
3. DEFINITIONS 1
3.1. Common Terms 1
3.2. Anomaly Criteria 3
4. IV&V OVERVIEW 1
4.1. Organization 1
4.1.1. Degree of Independence 1
4.1.2. IV&V Relationship to Other Project Processes 1
4.1.3. IV&V Project Team Relationship 2
4.2. Schedule 4
4.3. Resources Summary 4
4.3.1. Staff 5
4.3.2. Equipment/Tools 5
4.3.3. Management Process for Findings Identified by IV&V 8
4.3.4. Definition of Finding Types 9
4.3.5. Risk Rating 10
4.3.6. Finances 12
4.3.7. Procedural Requirements 12
4.4. Responsibilities 13
4.4.1. Roles and Responsibilities 13
4.5. Tools, Techniques, and Methods 17
4.5.1. Deliverable Generation Process 19
4.5.2. Sampling Approach 19
4.5.3. Knowledge Transfer 20
4.5.4. Independent Testing Methodology 20
4.5.5. IV&V V-Model 21
4.5.6. Functional Testing 22
4.5.7. Technical Testing 23

5. IV&V PROCESSES (ACTIVITIES AND TASKS) 25
5.1. Activity One – IV&V Management 26
5.1.1. Develop and Maintain the IV&V Schedule 26
5.1.2. Develop and Maintain IV&V Plan 27
5.1.3. Participate in Monthly Project Meetings 29
5.1.4. Prepare IV&V Monthly Status Reports 30
5.2. Activity Two - Assessments 31
5.2.1. Conduct IV&V Phase Assessment 31
5.2.2. Conduct Business Rules Extraction Plan Assessment 33
5.2.3. Conduct Business Rules Extraction Process Review 34
5.2.4. Conduct Requirements Development and Management Process Verification Review 35
5.2.5. Conduct Requirements Evaluation 37
5.2.6. Conduct Requirements Traceability Analysis 40
5.2.7. Conduct General System Design Assessment 41
5.2.8. Conduct Detailed System Design Evaluation 43
5.2.9. Conduct Risk Analysis 45
5.2.10. Evaluate system change requests 47
5.2.11. Conduct Test Planning Assessment 48
5.2.12. Conduct Quality Assurance Evaluation 50
5.2.13. Conduct Code Review of Transfer System 52
5.2.14. Conduct Source Code Review 54
5.2.15. Conduct Configuration Management Assessment 56
5.2.16. Conduct Maintenance Planning Evaluation Report 58
5.2.17. Conduct Initial Interface Analysis 60
5.2.18. Conduct Technical Interface Analysis 62
5.2.19. Conduct architectural design assessment 63
5.2.20. Conduct Security Assessment 65
5.2.21. Conduct Data Conversion Planning Assessment 67
5.2.22. Conduct Performance Monitoring 69
5.2.23. Conduct Test Evaluation Report 70
5.2.24. Conduct Implementation Planning Assessment 72
5.2.25. Conduct Deployment Evaluation 74
5.2.26. Conduct CMS Certification Assessment 75
5.3. Activity Three – Lessons Learned and Closeout of Phase 77
5.3.1. Conduct IV&V Lessons Learned 77
5.3.2. Conduct IV&V Final Report Generation 78

5.4. Activity Four – IV&V Testing 79
5.4.1. Develop IV&V Test Plan and Schedule 79
5.4.2. Complete IV&V Test Design 80
5.4.3. Develop IV&V Test Scripts /Cases 82
5.4.4. Execute IV&V test scripts/cases 84
5.4.5. Prepare IV&V Test Exit Report 86
6. IV&V REPORTING REQUIREMENTS 88
6.1. Task Reports 88
6.2. IV&V Activity Summary Reports 88
6.3. IV&V Final Report 89
7. IV&V ADMINISTRATIVE REQUIREMENTS 90
7.1. Task Iteration Policy 90
7.2. Deviation Policy 90
7.3. Control Procedures 90
7.4. Standards Practices and Conventions 90
8. IV&V DOCUMENTATION REQUIREMENTS 91
8.1. IV&V Deliverable Test Documentation 91
8.1.1. IV&V Test Plan Assessment Report 91
8.1.2. IV&V Replacement Test Evaluation Report 91
8.1.3. IV&V Replacement System Test Plan 91
8.1.4. IV&V Test Cases/Scripts 92
8.1.5. Final IV&V Test Exit Report 92
8.2. IVVP Documentation 92
8.2.1. IV&V Plan 92
APPENDIX A – IV&V HIGH-LEVEL SCHEDULE AND DELIVERABLES MATRIX 93

Table of Figures

Figure 1 – IV&V Project Team Relationship Chart 3
Figure 2 – IV&V Identified Risk, Issue and Preliminary Concern Process 9
Figure 3 – The PCG IV&V Team Positions 13
Figure 4 - IV&V V-Model 21
Figure 5 – IV&V Schedule Diagram 93

Table of Tables

Table 1 – PCG Scope of Work 2
Table 2 – Deviations from PCG NTP 6
Table 3 – IEEE 1012-2010 Plan Deviations 8
Table 4 - Referenced Documents 1
Table 5 – Acronyms 1
Table 6 – IV&V Staff 5
Table 7 – Initial Set of Standards and References 6
Table 8 - Risk Rating Matrix 10
Table 9 - Risk Priority Definitions 12
Table 10 – PCG IV&V Roles and Responsibilities 13

1. Purpose

The purpose of this Independent Verification and Validation (IV&V) Plan is to document how the Independent Verification and Validation (IV&V) services will be completed for the Example Medicaid Management Information System (EX-MMIS) Project.

This IV&V Plan documents the IV&V activities for the MMIS Project. This IVVP describes each IV&V activity and identifies the project phase (or phases) in which it will be performed. Most notably, this plan accommodates the EX-MMIS change in approach to business rules extraction (BRE) and requirements development from one-time activities to recurring phased activities. This IVVP aligns the corresponding IV&V activities with the new MMIS Project BRE schedule such that some IV&V activities which were originally planned to be conducted only once during BRE will now be conducted multiple times, in concert with the new MMIS Project approach. The following sections describe the scope and goals of the current IV&V effort and the format of this IV&V Plan.

1.1. IV&V Scope

The period of performance for the IV&V engagement is July 1, 2014, through April 30, 2016 which includes both the EX-MMIS Takeover and EX-MMIS efforts. Prior IVVP's were submitted for Takeover phase IV&V activities, which have all been successfully completed; the scope of this IVVP is restricted to EX-MMIS activities. During this period of performance and in compliance with the Scope of Work for EX-MMIS IV&V Consultant Services (identified in the Request for Proposal (RFP – 99-9999)), PCG will perform the tasks and activities for EX-MMIS Replacement Project identified within Table 1 – PCG Scope of Work, many of the work efforts and will be conducted during each of the four EX-MMIS Phases as applicable. The four EX-MMIS Phases are:

- Phase I- Pharmacy Benefit Management and Drug Rebate
- Phase II- Drug Authorizations
- Phase III- Medical Authorizations
- Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment

For the duration of this engagement, the term "Independent Verification and Validation (IV&V) Plan" will be used for this document name in lieu of "Software Verification and Validation Plan (SVVP)" as referenced in the SOW. Table 1 – PCG Scope of Work describes the tasks and descriptions PCG will be responsible for during the EX-MMIS.

Table 1 – PCG Scope of Work

Task	Brief Description
Develop and Maintain the IV&V Schedule	PCG IV&V will prepare the work schedule and submit to DHCS, update it monthly and include it in the monthly status report.
Develop and maintain the IV&V Plan	PCG IV&V will prepare and submit to the DHCS, update as applicable, and will manage the IV&V effort to a IV&V Plan.
Participate in Monthly Project Meetings	PCG IV& V meet with the DHCS Chief Deputy Director Policy & Program Support or their designee and with the EX-MMIS Deputy Project Director or designee to discuss work in progress, risks, issues and recommendations.
Prepare and deliver IV&V Monthly Status Reports (MSR)	PCG IV&V will prepare and submit to the EX-MMIS PCG Contract Manager a status report that describes IV&V tasks and activities and findings.
Conduct Phase Assessment	PCG IV&V will conduct a risk based assessment for each phase of the EX-MMIS Project beginning with the Planning Phase. During the planning for each project phase IV&V will identify and analyze technical project risks and evaluate the state of readiness for that phase. Phase assessments may be updated throughout the project as indicated based on volume of findings and/or project progress.
Conduct Business Rules Extraction Plan Review	PCG IV&V will conduct an IV&V risk based Business Requirement Extraction (BRE) plan assessment of the entire Business Rules Extraction plan. IV&V will identify and analyze risks based on the Business Rules Extraction approach and overall planning effort.
Conduct Business Rules Extraction Process Review	PCG IV&V will conduct a risk based assessment of the Business Requirement Extraction process. PCG will identify and analyze risks related to the Business Rules Extraction processes.
Conduct Requirements Development and Management Process Verification Report	PCG IV&V will conduct a risk-based assessment of the processes defined to develop and manage requirements of the Replacement Systems.
Conduct Requirements Evaluation	PCG IV&V will conduct a requirements evaluation of EX-MMIS requirements documented in the official requirements repository (DOORS). A sampling of the requirements will be evaluated to determine if they are correct, unambiguous, complete, consistent, prioritized, verifiable, modifiable, and traceable.
Conduct Requirements Traceability Analysis Reports	PCG IV&V will review the requirements to ensure that they have forward and backward traceability. PCG will select a sample of requirements to complete this task at key milestones in the SDLC in order to evaluate traceability is consistently and appropriately represented.
Conduct General System Design Assessment (GSD) Assessment	PCG IV&V will conduct a general system design assessment. The findings will identify early in the SDLC, potential design risks to the EX-MMIS Replacement System. The GSD

Task	Brief Description
	Assessment will consider the EX-MMIS system design for feasibility, capacity, performance, scalability and risk. In addition, the GSD will consider the overarching question 'does the design support the business need and DHCS strategic objectives?'.
Conduct Detailed System Design Assessment (DSD) Assessment	PCG IV&V will conduct a detailed system design assessment. The findings will provide DHCS early identification of risks related to the system's detailed design and provide information needed for effective mitigation planning. The DSD Assessment will consider such things as, correctness, completeness, accuracy, and testability.
Conduct Risk Analysis	PCG IV&V will perform risk analysis activities for previously identified findings and for ongoing project activities and will report on findings in the IV&V MSR.
Conduct Data Conversion Planning Assessment	PCG IV&V will conduct a detailed data conversion and cleanup assessment which will focus on the Master Data Conversion and Cleanup Plan and associated planning efforts.
Evaluate System Change Requests	PCG IV&V will evaluate system change requests for cost effectiveness, feasibility, adherence to policy etc. Evaluation can be conducted on a representative sample basis throughout the project or on an as needed basis.
Conduct Quality Assurance Evaluation	PCG IV&V will conduct quality assurance evaluations beginning with an assessment of the Quality Management Plan submitted during the planning phase. The findings will provide an independent perspective of the efficiency and adequacy of the quality management processes and practices.
Conduct Code Review	PCG IV&V will conduct a source code evaluation for the acquired transfer system code as early as is feasible. PCG IV&V will evaluate the source code components (source code and source code documentation) for correctness, consistency, completeness, accuracy, readability, reusability and testability.
Conduct Source Code Evaluation	PCG IV&V will conduct code inspections of updated system modules, for each EX-MMIS implementation phase to ensure they meet applicable coding standards and requirements, design specifications, and release and reliability growth standards. As application code is modified to fill gaps and meet EX-MMIS requirements, it will be logically sampled and examined for adherence to project coding standards, accepted industry standards, and typical programming best practices.
Conduct Test Planning Assessment	PCG IV&V will perform an assessment of the FI's Replacement test plans. It will include an evaluation of the documentation and the planned approach/methodology for conducting testing. It will also indicate the level of conformance to the applicable State and industry standards.

Task	Brief Description
Conduct Test Evaluation Report	PCG IV&V will conduct an independent evaluation of the EX-MMIS testing process. PCG IV&V will evaluate vendor testing to determine if the software satisfies the criteria established in the test plan and Requirements Traceability Matrix (RTM) and if the software is of sufficient quality to begin the next level of testing.
Conduct Configuration Management Assessment	PCG IV&V will verify that configuration management (CM) is performed in accordance to standards and practices defined in SEI CMMI and the Service Management Framework (identified by the vendor) PCG will evaluate the Configuration Management Plan and implemented practices (for development and maintenance and operations (M&O) for compliance to contract requirements and to applicable standards.
Conduct Maintenance Planning Evaluation	PCG IV&V will be conducting an evaluation of the maintenance planning from the perspective of key plans and procedures in place prior to the maintenance phase.
Conduct Initial Interface Analysis	PCG IV&V will conduct initial interface assessments evaluating the interface plans and activities against project guidelines, policies applicable, industry standards and best practices. The assessments will identify risks to the project and each assessment will build on prior findings. Each initial interface assessment will consider early interface development efforts required for a successful project.
Conduct Analysis Report	PCG IV&V will conduct interface assessments which will include the technical analysis needed to identify and mitigate project risk related to The Technical Interface Assessments will focus on the implementation of each interface.
Conduct Architectural Design Assessment	PCG IV&V will conduct an assessment of the Architecture Plan and follow-on assessments of the Technical Architecture Design documents.
Conduct Security Assessment	PCG IV&V will conduct an assessment of the EX-MMIS Replacement System solution, data conversion, development methods and practices and overall data management practices as documented in the Architecture Plan, SDLC plans and Security and Confidentiality plans to evaluate compliance with relevant department, state and federal security standards.
Conduct Performance Monitoring	PCG IV&V will conduct a review of the FI's system and network performance monitoring output to evaluate actual performance against expected performance as documented in the SLA's or as indicated by DHCS and user experience.
Conduct Implementation Planning Assessment	PCG IV&V will conduct a review and evaluation of the implementation planning activities to verify that the implementation is properly planned and considers all necessary factors for success.
Conduct Deployment Evaluation Report	PCG IV&V will conduct a review and evaluation of the deployment planning activities to verify deployment is properly

Task	Brief Description
	planned and the production environment is adequately prepared to for production M&O. Subsequently, PCG IV&V will monitor the deployment activities and provide updates in the monthly status report.
Conduct CMS Certification Assessment Report	PCG IV&V will conduct an assessment using the CMS certification toolkit Checklists and the FIs CMS Certification Plan to assess the progress toward meeting CMS Certification requirements for each phase of the EX-MMIS. This will provide an early independent verification of progress and/or identification of opportunities for improvement. The PCG IV&V team will review the CMS checklists and record the vendor's progress.
Prepare IV&V Lessons Learned	PCG IV&V will provide lessons learned throughout the term of the engagement. Lessons learned from development practices and processes will identified.
Prepare Final IV&V Report	PCG IV&V will prepare and submit a final IV&V report that details the tasks, activities and findings from the EX-MMIS EX-MMIS IV&V engagement
Develop IV&V Test Plan and Schedule	PCG IV&V will prepare an independent test plan for the Replacement Systems. The test plan for Independent Testing will describe the overview, approach to independent testing, scope, entry/exit criteria, measurements, schedule, completion criteria, and other planning components.
Complete IV&V Test Design	PCG IV&V will complete the IV&V test design to include designing the details of which functions need to be tested together and the sequence of tests. PCG IV&V will confirm the test environments, test data needed and other supporting activities required for a well-planned testing approach.
Develop IV&V Test Cases/Scripts	PCG IV&V will use the requirements elicited for each Replacement System to create a set of independent test cases/scripts to be executed.
Execute IV&V Test Case/Scripts	PCG IV&V will start execute IV&V test scripts to validate the selected functionality of the Replacement system.
Prepare IV&V Test Exit Report	PCG IV&V will create a Test Exit Report document the outcomes of the IV&V independent test effort.

1.2. IV&V Goals

The primary goals of the IV&V effort are to:

- Provide independent review and analysis of the management and technical activities of FI Contractor(s), and DHCS, verifying and validating that activities and services conform to program expectations as documented in the requirements analysis document

- Confirm that all intermediate and final application software deliverables strictly adhere to the project's business and technical requirements intent and users' expectations
- Confirm that all system development activities and processes adhere to industry standards and best practices

PCG IV&V will accomplish these goals using our experience and knowledge of the complex relationship between the technical and business dimensions of a large-scale system development and implementation projects and of industry standards and best practices.

The PCG IV&V Team will offer input and solutions that are intended to help DHCS effectively manage development and implementation tasks, and identify and understand issues and risks. By executing the IV&V Plan, PCG will improve the ability of DHCS to proactively address the risks and issues inherent with complex IT projects such as EX-MMIS EX-MMIS.

1.3. IV&V Plan Deviations from PCG Proposal

The IV&V Plan is based upon the current approach and structure of the EX-MMIS Project. This modification, i.e. re-phasing, of DD&I (now referred to as EX-MMIS Project) has necessitated changes to the work originally proposed by PCG in performing IV&V activities. Table 2 – Deviations from PCG NTP clarifies where this IV&V Plan deviates from the PCG Narrative Technical Proposal (NTP).

Table 2 – Deviations from PCG NTP

IV&V Plan Update	NTP	Reason for Deviation
IV&V Work Plan activity was renamed to IV&V Schedule	IV&V Work Plan	The IV&V Plan provides detailed work plan components in Section 5. IV&V will develop and maintain a project schedule to manage all tasks and resources required to fulfill the terms of the contract
Business Rules Extraction Plan Review will be performed during DD&I Planning Phase	Activity was proposed to occur once during BRE Phase	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
Business Rules Extraction Process Review will be performed 4 times; once for each EX-MMIS Phase	Activity was proposed to occur once during BRE Phase	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
System Requirements Review will be performed 5 times; once during the DD&I Planning Phase, and for each of the four EX-MMIS Phases	Activity was proposed to occur once for each major phase of DD&I	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project

IV&V Plan Update	NTP	Reason for Deviation
Requirements Evaluation will be performed 4 times; once for each EX-MMIS Phase	Activity was proposed to occur once during BRE Phase	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
Initial Requirements and Interim Requirements Traceability Analysis have been combined into one activity to occur 16 times; once for each SDLC phase within each EX-MMIS Phase	The Requirements assessments were proposed to occur once during the BRE Phase. The Interim was proposed to occur multiple times during each DD&I Phase	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project, and to improve usability of the Traceability Analysis for DHCS
Configuration Management Assessment will be performed 5 times; once during the DD&I Planning Phase, and for each of the four EX-MMIS Phases	Activity was proposed to occur once during BRE Phase	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
Quality Assurance Evaluation will be performed 8 times; twice during each of the four EX-MMIS Phases	Activity was proposed to occur as a recurring activity without a specified time period	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
Initial Interface Analysis will be performed 4 times; once for each EX-MMIS Phase	Activity was proposed to occur during the BRE Phase and four DD&I Phases	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
Initial, Interim, and IPO Phase Assessments have been consolidated into one activity to occur once at the beginning of each EX-MMIS Phase, and as needed throughout each EX-MMIS Phase	Each of the three assessments were proposed to occur once for the BRE Phase and four DD&I Phases	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project, and to eliminate redundant information reported to DHCS
IV&V Final Report will be performed 4 times; once for each EX-MMIS Phase	Activity was proposed to occur during the BRE Phase and four DD&I Phases	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project
IV&V Lessons Learned will be performed 4 times; once for each EX-MMIS Phase	Activity was proposed to occur during the BRE Phase and four DD&I Phases	Activity was rescheduled to accommodate the re-phasing approach for the DD&I project

1.4. IV&V Plan Format

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) Standard 1012-2010, Standard for Software Verification and Validation, was used to develop this IV&V Plan. The Plan includes the following sections in conformance to the standard:

- **Section 1, Purpose,** presents the PCG IV&V Plan for performing the verification and validation activities for the EX-MMIS Project. This section

describes the purpose, scope, and goals of the IV&V effort, and the format of the IV&V Plan.

- **Section 2, Referenced Documents,** lists documents that will be used in the creation of the IV&V Plan and as part of completing the scope of work
- **Section 3, Definitions,** contains a list of terms used in the IV&V Plan
- **Section 4, IV&V Overview,** describes the organization, schedule, resources, responsibilities, tools, techniques, and methods necessary to perform the IV&V activities
- **Section 5, IV&V Processes,** provides the detailed processes for providing IV&V services for the project. The activities are based on those requested in the SOW Requirements specified within the RFP 09-86062.
- **Section 6,IV&V Reporting Requirements,** defines the purpose, content, format, recipients, and timing of all IV&V reports
- **Section 7, IV&V Administrative Requirements,** describes the anomaly resolution and reporting, task iteration policy, deviation policy, control procedures, and standards, practices, and conventions
- **Section 8, IV&V Documentation Requirements,** describes how each document will be created, updated, and stored, and who will be responsible for overall document maintenance

Table 3 – IEEE 1012-2010 Plan Deviations describes deviations in this IV&V Plan from the IEEE standards.

Table 3 – IEEE 1012-2010 Plan Deviations

IV&V Plan Section	IEEE 1012 Reference Section	Reason for Deviation
Section 1	Section 4, Scope	The reference name for this document will be “Independent Verification and Validation (IV&V) Plan” as requested by DHCS and will replace the name, “Software Verification and Validation Plan (SVVP)” provided in the RFP SOW.
Section 4	Section 4, Software Integrity Level	The scope of the IV&V activities is defined by the SOW. The IV&V SOW does not include this activity. Therefore, the Software Integrity Level Scheme section has been removed from this IV&V Plan.
Section 5	Section 5 – Software IV&V Processes	The scope of the IV&V activities is defined by the SOW. Therefore, not all IV&V activities included in the standard are included this IV&V Plan. The activities included in the plan correspond to the SOW IV&V activities as applicable to the EX-MMIS Project current phase.

2. Referenced Documents

Table 4 - Referenced Documents lists the standard documents that will be used in the creation of the IV&V Plan or that will be used as part of completing the scope of work. The referenced documents are the most current available at the time of this project. If updates to these documents and standards are published during the EX-MMIS phases PCG will then use the most current version:

Table 4 - Referenced Documents

Document Name
DHCS - EX-MMIS Independent Verification and Validation and Oversight Consultant RFP 09-86062, February 26, 2010
IEEE Standard 1012-2010, Standard for Software Verification and Validation, dated April 12, 2005
FI-MMIS Project Schedule, Draft,
IEEE Std. 1058, Standard for Software Project Management Plans, December 9, 1998
PMI Practice Standard for Work Breakdown Structures Second Edition
PMI A Guide to the Project Management Body of Knowledge (PMBOK) Fourth Edition
IEEE 730-2002 Quality Assurance Plan, September 23, 2002
IEEE 1061-1998 Quality Metrics Methodology, December 8, 1998
IEEE 829-2008 Standard for Software and System Test Documentation, July 18, 2008
IEEE 12207- 2008 Systems and software engineering —Software life cycle processes, February 1, 2008
IEEE 1044-1993 Standard Classification for Software Anomalies, December 2, 1993
IEEE 1028-2008 Standard for Software Reviews and Audits, August 15, 2008

3. Definitions

This section provides a list of terms (i.e., abbreviations, acronyms, and notations) that are used in the IV&V Plan and their definitions to provide a common understanding. This section also includes the criteria for classifying an anomaly.

3.1. Common Terms

Table 5 – Acronyms defines the common terms used in this IVVP

Table 5 – Acronyms

Term	Definition
BRE	Business Rules Extraction
EX-MMIS	Example Medicaid Management Information System
CEAF	California Enterprise Architecture Framework
CI	Configuration Items
COTS	Commercial Off-the-Shelf
CM	Configuration Management
CMMI	Capability Maturity Model Integration
CMS	Center Medicare & Medicaid Services
CPU	Central Processing Unit
CSDD	Conceptual System Design Documentation
CTA	California Technology Agency
DHCS	California Department of Health Care Services
DED	Deliverable Expectation Document
DDD	Detail Design Document
DD&I	Design, Development & Implementation
DRAMS	Drug Rebate Analysis and Management System
DSD	Detailed System Design
ERD	Entity Relationship Diagram
FI	Fiscal Intermediary
FIPS	Federal Information Processing Standards
GSD	General System Design
HE	Health Enterprise
HIPAA	Health Insurance Portability and Accountability Act of 1996
HITECH	Health Information Technology for Economic and Clinical Health Act of 2009
IDD	Integrated Data Dictionary

Term	Definition
IEC	International Electrotechnical Commission
IEEE	Institute for Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITPOF	IT Project Oversight Framework
IV&V	Independent Verification and Validation
JAD	Joint Application Design
LDM	Logical Data Modeling
M&O	Maintenance and Operations
MEDS	Medi - Cal Eligibility Data System
MITA	Medicaid Information Technology Architecture
MITA SS-A	Medicaid Information Technology Architecture State Self - Assessment
NIST	National Institute of Standards and Technology
PBM	Pharmacy Benefits Management
PDM	Physical Data Model
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
QA	Quality Assurance
RFP	Request for Proposal
RTM	Requirements Traceability Matrix
SAM	State Administration Manual
SDA	Software Development Approach
SDLC	System Development Lifecycle
SDN	System Development Notice
SEI	Software Engineering Institute
SIMM	Statewide Information Management Manual
SLA	Service Level Agreements
SME	Subject Matter Expert
SOW	Statement of Work
SVVP	Software Verification and Validation Plan
TAD	Technical Architecture Design
UAT	User Acceptance Testing
WBS	Work Breakdown Structure

3.2. Anomaly Criteria

The following identifies the criteria that may be used to categorize anomalies found during activity, documentation, and process reviews.

- **Critical Deficiency** – A critical deficiency or issue factors upon the overall success or failure of the project
- **Material Deficiency** – A material deficiency is defined as any deviation from the agreed upon standards, requirements or approved DED, and may include such things as the omission of critical information or inclusion of errant information
- **Cosmetic Deficiency**- A cosmetic deficiency includes grammatical typographical and other errors which inhibit readability of documents but likely do not have significant effect on the success of the project. These deficiencies are typically not documented by IV&V unless the error is so egregious that the meaning or intent of the document in question cannot be determined.

4. IV&V Overview

This section describes the organization, schedule, resources responsibilities, tools, techniques, and methods the PCG IV&V team will employ to appropriately perform IV&V for the EX-MMIS.

4.1. Organization

The organization of the PCG IV&V effort is described in the following paragraphs, including the degree of independence, relationship of IV&V processes to other processes, and relationship and communication links of the IV&V team to the overall project team.

4.1.1. Degree of Independence

It is essential to maintain an appropriate degree of independence from the client organization, hardware and software vendors, and other approval or review organizations to effectively provide IV&V services. This autonomy ensures that recommendations provided by the IV&V team are in the best interest of the organization and project. The three primary areas for this independence approach, based on IEEE 1012-2010, are:

- **Technical** – PCG is not affiliated with hardware or software resellers, which allows for truly independent reviews of all technical documents, components, approaches, installations, and maintenance. The PCG IV&V team formulates its own understanding of a problem and provides recommendations as appropriate for a resolution. Although PCG brings an independent technical perspective, the IV&V team will work cooperatively and constructively with the EX-MMIS to ensure full understanding of a problem, discuss ideas for resolution, provide guidance to DHCS and the vendor, and validate the implementation of a workable solution.
- **Managerial** – The PCG IV&V team will be managed by PCG personnel, enabling the team to independently select the work products and processes to review (within the constraints of the project); select the techniques and methods to conduct the IV&V activities; and report findings without restrictions to management.
- **Financial** – The PCG Project Manager/IV&V Lead maintains the budget for providing IV&V services and has no authority over any other project budget.

4.1.2. IV&V Relationship to Other Project Processes

PCG IV&V activities are integrated into the project's implementation activities and are conducted throughout the life of the project. In general, the continual IV&V activities can be grouped as analysis, testing, evaluations/reviews, management,

and reporting. These IV&V activities will be completed by PCG and scheduled in parallel with the project's implementation schedule to provide timely input for:

- Identifying new issues
- Identifying new risks and recommending mitigation strategies
- Providing management with data that may be used to determine if the project is ready to advance to the next phase
- Identifying recommendations for process improvements
- Documenting lessons learned

The following describes the IV&V team's relationship with:

- **Project Management** – The Project Manager/IV&V Lead will work closely with the EX-MMIS Deputy Project Director or designee to ensure that tasks in each Schedule are synchronized and resources are coordinated. The IV&V team will report its findings to the EX-MMIS Deputy Project Director or designee and gain approval to discuss them with the EX-MMIS team (as applicable).
- **Quality Assurance** – While the intent of the reviews will differ, the IV&V team will perform its IV&V tasks concurrently with those performed by the DHCS or FI Vendor quality assurance team. The coordination of these activities will ensure minimal disruption to the overall project schedule. In reviewing products that have been re-worked to resolve deficiencies, the IV&V team may also take into consideration the findings from the quality assurance team to ensure the whole product meets all requirements.
- **Change Management** – The IV&V team will be involved in the change management process to observe and provide guidance where applicable. The team will also use the results from the change management process in its review of work products and processes to ensure approved changes have been appropriately incorporated and unapproved changes have not been executed.
- **Risk Management** – The IV&V team will work closely with project management staff and the EX-MMIS Deputy Project Director or designee to identify risks, develop mitigation strategies, and monitor risk resolution.
- **Issue Management** – The IV&V team will work closely with project management staff and the EX-MMIS Deputy Project Director or designee to identify issues, develop action plans, and monitor issue resolution.

4.1.3. IV&V Project Team Relationship

The PCG methodology and approach to providing IV&V services includes active involvement with the project team and activities. Figure 1 – IV&V Project Team Relationship Chart below provides an overview of the PCG IV&V team's

relationship with other groups on the project followed by a narrative to provide a brief explanation.

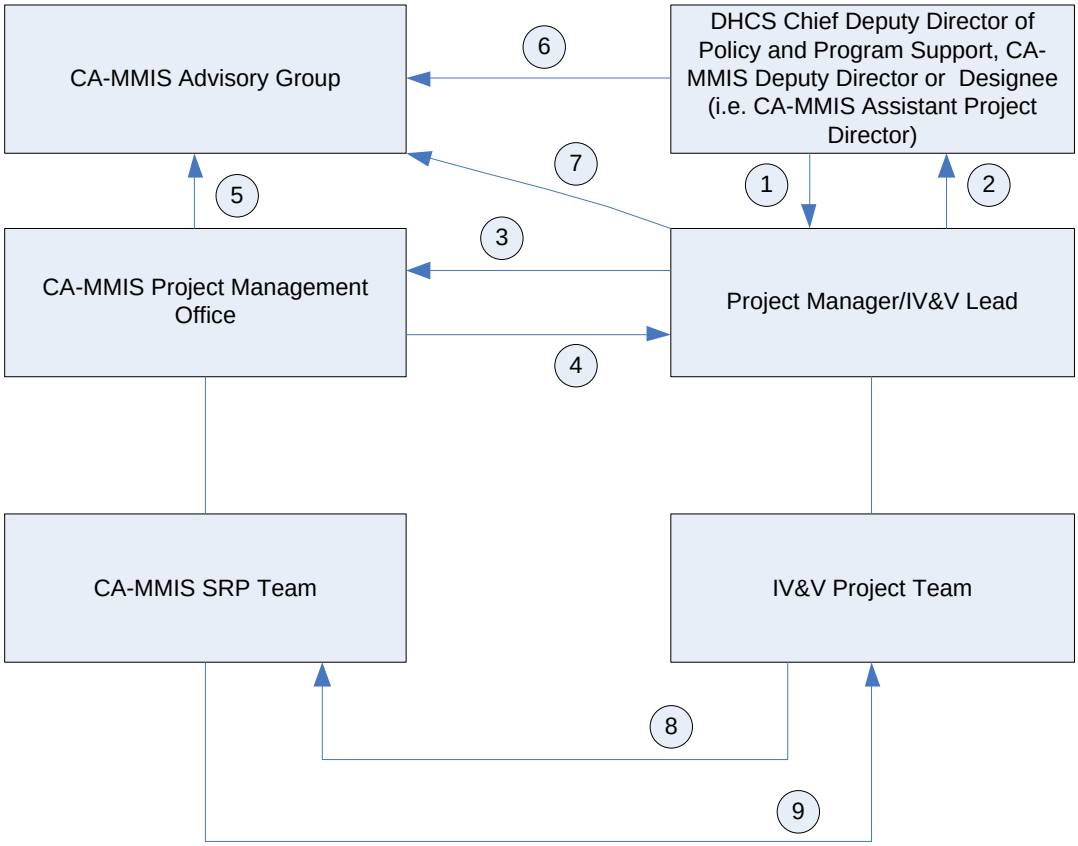


Figure 1 – IV&V Project Team Relationship Chart

- DHCS Chief Deputy Director of Policy and Program Support (PPS) and EX-MMIS Program Deputy Director or designee, approves/denies IV&V deliverables, provides comments on IV&V draft, requests special presentations and reports (as needed) and provides assistance (as needed) to resolve issues.
- Project Manager/IV&V Lead, on behalf of the IV&V team, submits IV&V deliverables, special reports, and notification of issues and risks in a timely manner and conducts special presentations and special reports, as requested
- Project Manager/IV&V Lead, on behalf of IV&V team, provides copies of IV&V reports and special interim reports as directed by the EX-MMIS Advisory Group (CAG), provides recommendations on project activities/issues as appropriate, and provides assistance as needed to resolve issues. As reviews are conducted, the Project Manager/IV&V Lead provides copies of IV&V reports and special interim reports to the PCG

IV&V contract administrator and as directed by the CAG, provides recommendations on project activities/issues, as appropriate.

- EX-MMIS Project Management Office (CPMO), comprised of the EX-MMIS Deputy Project Director and the Project Management Vendor, provides project management documentation (as needed), notification of project management meeting notices, and provides assistance (as needed) to resolve issues. The CPMO also requests oral presentations and special reports approved by the EX-MMIS Executive Management Committee.
- CPMO provides monthly status of project activities
- DHCS Chief Deputy Director of PPS and the DHCS EX-MMIS Deputy Project Director provides monthly status of activities to address IV&V findings
- As directed by the CAG, the Project Manager/IV&V Lead will provide a monthly executive summary of findings and may be requested to provide/present special reports and/or recommendations on project activities/issues, as appropriate
- As appropriate, IV&V Team members participate in development activities as an observer, review processes and artifacts, and provide recommendations. IV&V Team members clarify content of reports findings, and recommendations with the EX-MMIS team.
- The EX-MMIS Team leads and members (DHCS and contractor) provide project documentation, work products, access to project tools (as needed), access to appropriate local area network directories, response to communication, meeting notices, issue resolutions, and assistance with IV&V reviews and evaluations by providing access to the appropriate personnel

4.2. Schedule

The activities in the IVVP will be coordinated with the EX-MMIS schedules. PCG will develop a detailed IV&V schedule, as an appendix to this deliverable per the SOW that will align the appropriate IV&V activities with the corresponding project activity and task activity.

PCG will monitor changes to the EX-MMIS Schedules and make adjustments to the IV&V Schedule as needed through the duration of the project. The IV&V Schedule will be updated and submitted with the IV&V monthly status report.

4.3. Resources Summary

This section identifies the staff, equipment/tools, finances and procedural requirements PCG will use to provide the IV&V services for the EX-MMIS.

4.3.1. Staff

Table 6 – IV&V Staff identifies the PCG staff and their role that will perform the IV&V services for the EX-MMIS.

Table 6 – IV&V Staff

Staff	Role
Mitch Dobbins	Engagement Manager
Tim Nye	Project Manager/IV&V Lead
Gary Reimers	IV&V Technical Lead
Jeff Hellzen	Senior IV&V Consultant (SME)
Lisa Howard	Senior IV&V Consultant (SME)
Bud Chatterley	Senior IV&V Consultant (SME)
Lauren Barton	Senior IV&V Consultant (SME)
Ken Wilmoth	Senior IV&V Consultant (SME)
Kevin Wardle	Senior IV&V Consultant (SME)
Earl Burba	Senior IV&V Consultant (SME)
Patricia Berger	Senior IV&V Consultant (SME)
David LaMar	Senior IV&V Consultant (SME)

PCG recognizes that in any major IV&V project there are peaks and valleys in activities. In order to successfully achieve the tasks and activities detailed in Section 5, IV&V Processes (, and using our prior knowledge of similar implementation projects, PCG will use a flexible resource plan that:

- Applies sufficient resources to any task to meet schedules
- Maximizes efficiency of the team
- Provides best value to the DHCS by negating any idle time of IV&V resources

PCG will align its project plan with those of the EX-MMIS Project activities to maximize the effectiveness of our IV&V team and also to minimize any impact to the EX-MMIS Project team. The PCG Project Manager/IV&V Lead will analyze each occurrence of a task and ensure that the most appropriate resource combination is assigned.

4.3.2. Equipment/Tools

The following are the equipment and tools that will be used by the PCG IV&V team for the duration of the project:

- **IV&V Software Tools** – PCG will use the following software tools as part of conducting IV&V activities, completing assessments, and producing deliverables:
  - *Microsoft Office Suite* – MS Office will be used to develop contract deliverables (including the Plans, Progress Reports, presentations, issue analysis, etc.)
  - *Microsoft Project* – MS Project will be used to develop and maintain the IV&V Schedule
  - *Issues Tracking System* – An PCG developed and maintained Issues Tracking System will be used to track and manage issues opened by IV&V from initiation to final resolution. Extracts from this system will be included in the IV&V MSR.
  - *Risk Tracking System* – An PCG developed and maintained risk tracking system will be used to track and manage risks from initiation to final resolution. Extracts from this system will be included in the IV&V MSR.
  - *Lessons Learned System* – An PCG developed and maintained lessons learned tracking system will be used to track lessons learned and used for the duration of the engagement. Extracts from this system will be included in the IV&V Final Report
- **IV&V Hardware Tools** – There are no special hardware tools known to be required at this time
- **Industry Standards and Best Practices** – PCG uses industry standards and best practices as part of providing IV&V services. Table 7 – Initial Set of Standards and References provides the initial set of standards and references that will be used as reference guides during the course of the project.

Table 7 – Initial Set of Standards and References

Practice Area	Standard/Reference	Name/Subject
Project Management	A Guide to the Project Management Body of Knowledge (PMBOK) Fourth Edition	PMI Standards
	IEEE 1490-2003	Adoption of PMI Standard
	IEEE 1058-1998	Standard for Software Project Management Plans
Software Project Management	IEEE 1012-2010	S/W Verification and Validation
	IEEE 12207-2008	Information Technology – Software life cycle processes
IT/Software Design and Development	IEEE 1063-2001	Standard for S/W User Documentation

Practice Area	Standard/Reference	Name/Subject
	IEEE 1471-2000	Recommended Practice for Architectural Description (AD) of S/W Intensive Systems
Risk Management	IEEE 16085-2006	System Engineering - Risk Management
	SIMM Section 45	IT Project Oversight Framework
Requirements Management	IEEE 830-1998	Recommended Practice for S/W Requirements Specification
	IEEE 1233-1998	Guide for Developing System Requirements Specifications (SRS)
Software Testing	IEEE 829-2008	Software Test Documentation
Configuration Management	IEEE 828-2005	S/W Configuration Management
Quality Management	IEEE 730-2002	Quality Assurance Plan
	IEEE 1012-2010	S/W Verification and Validation
	IEEE 1061-1998	Quality Metrics Methodology

- **PCG Procedures** – The IV&V team will utilize PCG's procedures for providing IV&V services. The procedures are based on IEEE, PMI, and SEI CMMI concepts and best practices, and provide the IV&V team with guidelines for providing tailored services. PCG's internal process improvement activities also are used as input to procedures.
- **Document Templates** – PCG has a library of successfully used project planning documents and will utilize those to maximize our efficiency and leverage our lessons learned on previous, similar engagements
- **IV&V Checklists to Perform Reviews** – PCG will utilize established checklists, when applicable, based upon industry standards, contract requirements, and internal standards as one of the tools for document reviews. The results gathered using these tools will be provided within feedback provided to the EX-MMIS Deputy Project Director or designee.
- **Deliverable Expectation Documents** – To ensure that the IV&V deliverables meet with stakeholders' expectations; PCG uses a Deliverable Expectation Document (DED) to communicate what is to be developed. The goal for the use of DEDs is to ensure that a common understanding exists between the DHCS and PCG regarding the scope and content (depth and breadth) of the deliverable prior to PCG beginning work on the deliverable. The DED will contain items such as:

- Deliverable objectives
- An outline of the deliverable, table of contents, sample format, sample pages, and a general description of the information that will be contained in the deliverable
- Deliverable acceptance criteria that is consistent with the requirements of the contract

PCG will review the DED with the EX-MMIS Deputy Project Director or designee and incorporate the necessary changes.

4.3.3. Management Process for Findings Identified by IV&V

Results of IV&V analysis may be documented as findings, which take the form of risks, issues, or preliminary concerns (see below for the definition of each). It is important that the findings are presented to the project so appropriate action may be taken. IV&V will use the following process for presenting IV&V-identified findings to the project. Because maintaining independence is a core component of IV&V work, IV&V will maintain an independent tracking system for findings. This process includes the use of two tracking systems: 1) the IV&V tracking system, which contains IV&V evaluations of risks, issues and preliminary concerns, and 2) the project tracking system, which contains the project's management of risks and issues.

- Results of IV&V analysis will be documented as findings (risks, issues or preliminary concerns) and memorialized in the IV&V tracking system
- IV&V will vet findings with DHCS in a weekly meeting. Items which require immediate attention will be brought to DHCS as urgent items instead of waiting for the weekly meeting. DHCS will determine if the findings should be entered into the project's risk or issue management system.
  - If a finding is entered into the project's risk or issue management system, it will follow the project's risk/issue management process. IV&V will not update the project's risk or issue tracking tool with status; that task should be performed by the project. IV&V will continue to track findings and document their status in the IV&V tracking system.
  - If an IV&V-identified finding is not entered into the project's risk or issue management system, it will remain in the IV&V tracking system. IV&V will track the finding and document its status in the IV&V tracking system. Status updates may reflect project progress, changes to the priority ranking, closing or re-assigning the finding.
- IV&V will monitor and report, from an independent viewpoint, the project's progress on addressing findings identified by IV&V. IV&V's analysis of the project's progress toward addressing findings will be updated and documented in the IV&V tracking system and shared with DHCS.

The process is represented in Figure 2 – IV&V Identified Risk, Issue and Preliminary Concern Process below.

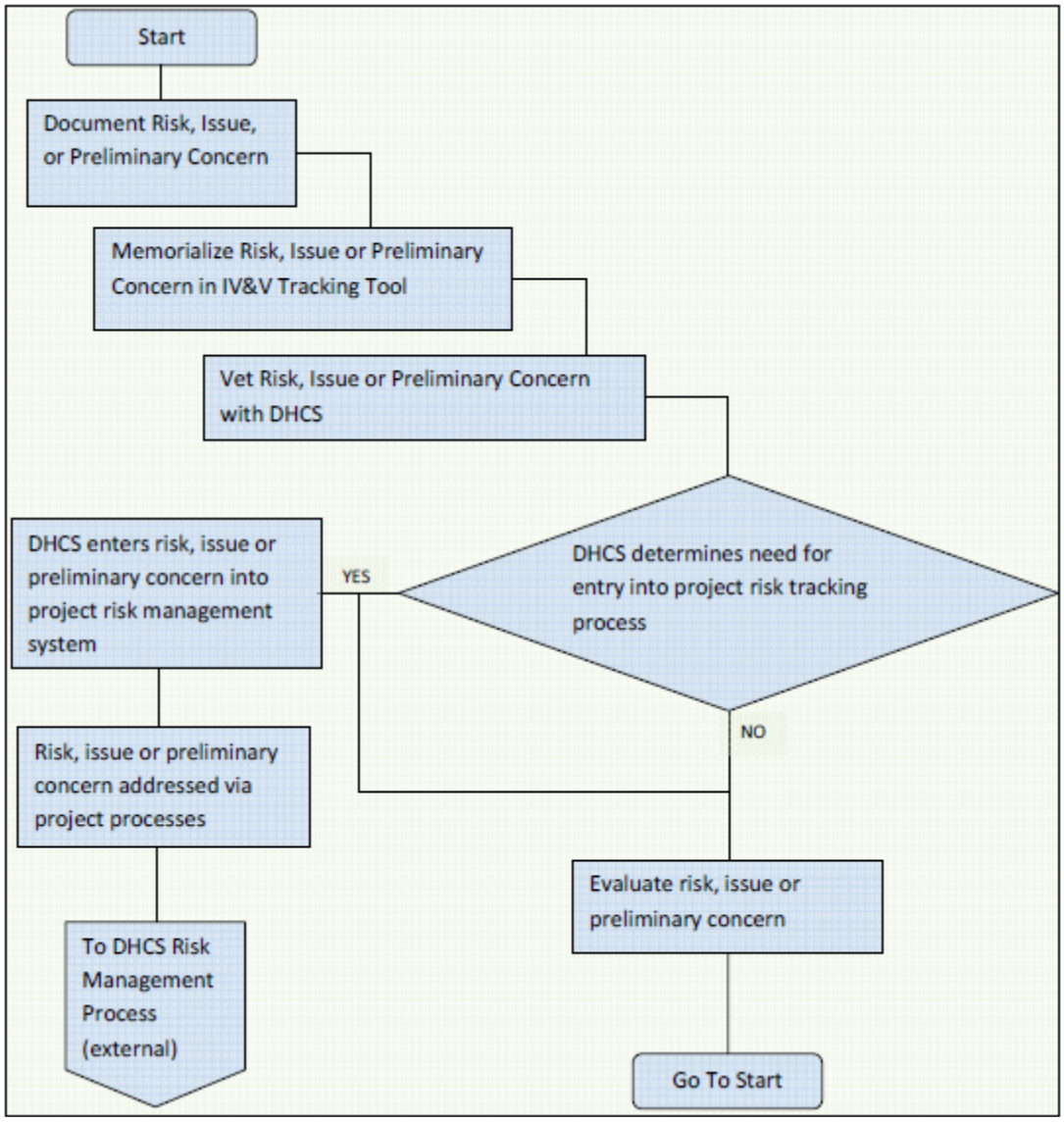


Figure 2 – IV&V Identified Risk, Issue and Preliminary Concern Process

4.3.4. Definition of Finding Types

Results of IV&V analysis may be documented as findings, which take the form of risks, issues, or preliminary concerns. Each is defined below.

- A preliminary concern is an item we believe may pose risk to the project, but more analysis and a better understanding of the subject area is necessary before classifying the item as a formal risk. Preliminary concerns are documented in statements which articulate the concern and indicate further analysis and/or understanding of the matter is required. They are intended to give project management early indicator of areas

that may become risks or issues through the assessment of their impact and probability is reliant on further analysis.

- A risk is "an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives." We identify risks with negative effects and expand the definition to include both conditions which may occur and those which may not occur (e.g. lack of a well-defined requirements traceability process could lead to delivery of an incomplete system, requiring costly and time consuming rework).
- An issue is an event, often previously identified as a risk, which has occurred and caused negative impact to the project. Issues are documented in issue statements which identify the event, its impact to the project, and status towards resolution.

4.3.5. Risk Rating

A key to risk management is having an understanding of all the potential risks to the project and ensuring that these risks and risk mitigation strategies are communicated to key project stakeholders on an ongoing basis. Risk analysis should begin early during project planning by determining or identifying the factors that may affect the project. Risk can impact a project in many different ways: project quality, manageability, cost, and schedule. Proper risk identification seeks to determine how the risk may affect the project and to document the project area(s) impacted by the identified risk.

Once risks are identified and characterized, both qualitative and quantitative factors are examined. Our analysis examines project conditions to determine a) the probability of the risk being realized and b) the impact to the project, if the risk is realized. Overall risk exposure is determined by locating the intersect of the probability rating with the impact rating in the Risk Rating Matrix.

The PCG team will document the following for each risk:

- Risk Statement
- Analysis (to include impact to the project if not mitigated)
- Exposure
  - Probability
  - Impact
  - Recommended Mitigation

Table 8 - Risk Rating Matrix determines the priority of each risk based on an assessment of probability of occurrence and magnitude of impact.

Table 8 - Risk Rating Matrix

	Magnitude of Impact

Probability of Occurrence	1 Negligible	2 Minor	3 Moderate	4 Significant	5 Critical
5 Probable (80% – 99%)				High Risk	
4 Likely (60% – 79%)					
3 Possible (40% – 59%)		Medium Risk			
2 Unlikely (20% – 39%)	Low Risk				
1 Improbable (1% – 19%)					

Table 9 - Risk Priority Definitions defines the Risk Priorities that PCG uses when identifying risks.

Table 9 - Risk Priority Definitions

Risk Priority	Definition
High	Possibility of substantial impact to product quality, manageability, cost, or schedule. A major disruption is likely and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
Medium	Possibility of moderate impact to product quality, manageability, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
Low	Possibility of slight impact to product quality, manageability, cost, or schedule. Minimal disruption is likely and some oversight is needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

An issue is an event, often previously identified as a risk, which has occurred and caused negative impact to the project. Issues are documented in issue statements which identify the event, its impact to the project, and status towards resolution.

4.3.6. Finances

PCG will perform IV&V services within the proposed budget. The PCG Project Manger/IV&V Lead will maintain and monitor the IV&V budget to ensure the activities are completed within the budget constraints.

4.3.7. Procedural Requirements

It is expected that the PCG IV&V team will need to have read access to specific information maintained in project resources such as network drives, the project document management system(s), or project library. Information that may require read access includes:

- Project documentation, plans, requirements, procurement information, procedures, and results
- Other project documentation to including security policy and procedures, vendor contracts, and memorandums of understanding

4.4. Responsibilities

The IV&V team will be responsible for completing the tasks identified in the RFP Statement of Work and as directed by the EX-MMIS Deputy Project Director or designee. The following organization chart depicts the IV&V team members, and their roles and reporting relationships.

Figure 3 – The PCG IV&V Team represents the relationships among the PCG IV&V team positions for the EX-MMIS project

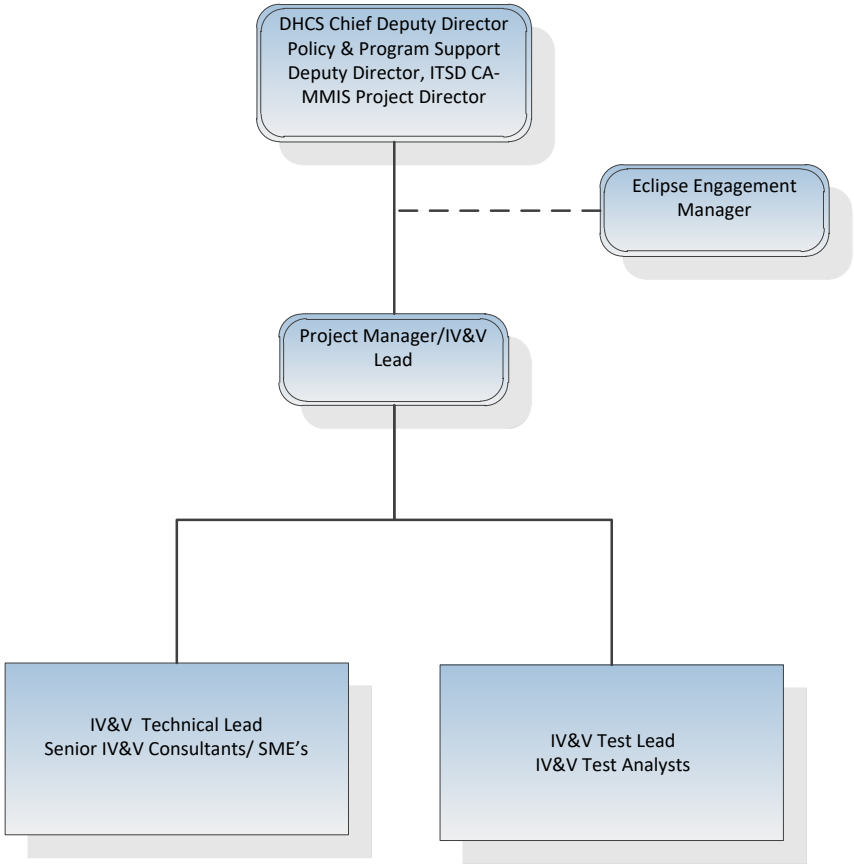


Figure 3 – The PCG IV&V Team Positions

4.4.1. Roles and Responsibilities

Table 10 – PCG IV&V Roles and Responsibilities Table 10 – PCG IV&V Roles and Responsibilities provides a list of responsibilities for each PCG IV&V team member's role.

Table 10 – PCG IV&V Roles and Responsibilities

Role	Responsibilities
PCG Engagement Manager	• Overall responsibility for successful completion of the engagement • Provide support to Project Manager/IV&V Lead, as needed

Role	Responsibilities
Project Manager/IV&V Lead	• Serves as the PCG Project Manager/IV&V Lead and as the primary point of interface with DHCS management and can act on all aspects of IV&V • Ensures all management plans are completed as needed and consistent with related management plans • Develops and maintains project schedule, ensures the milestones and deliverables correspond to the development project schedule • Ensures the best use of personnel and assigns tasks for timely completion • Ensures the applicable standards are used to complete the tasks, regularly evaluate PCG teams' performance, implement process improvements and corrective action as needed • Monitors project progress with the approved Schedule and updates made monthly to ensure it corresponds to development vendor's Schedule • Monitor the project progress of the activities and provide progress reporting in a status reports for all activities • Oversees the development of deliverables and ensures project deliverables are completed in a timely manner and with the highest quality • Ensures compliance with the contract, state and federal regulations and internal standards and procedures • Ensures risks and issues are tracked and monitored • Conducts management briefings, as needed • Ensures project information is timely, regularly generated and disseminated to project team, internal and external, and the customer receives information quickly on as 'as needed' basis • Attend project and status meetings as required • Attends Steering committee meetings and provides oversight presentations
IV&V Technical Lead (Senior Consultant)	• Develops the Deliverable Expectation Documents (DEDs) for all IV&V deliverables • Reviews designated software development products and processes and prepares Review Reports (as needed) • Reviews and monitors development processes to ensure they are being documented, implemented and analyzed for improvement • Conducts designated reviews and prepares Review Reports • Assesses designated project processes and provides recommendations for improvements • Provides weekly IV&V status to Project Manager/IV&V Lead • Attends project and status meetings as required • Identifies, documents, resolves, and/or escalates issues to the appropriate level

Role	Responsibilities
	• Supports the IV&V team and the project with specific knowledge of functional areas and technology/industry standards • Develops IV&V checklists, as needed • Provide direction to Senior IV&V Consultants – SMEs (SMEs) • Conduct plan documentation IV&V reviews • Conduct IV&V tasks/activities per the IV&V Plan • Prepare IV&V final report • Provides support, as needed, to the PCG Project Manager/IV&V Lead
Senior IV&V Consultants – SMEs	• Develops the Deliverable Expectation Documents (DEDs) for all IV&V deliverables, as needed • Provides weekly IV&V status to Project Manager/IV&V Lead • Attends project and status meetings as required • Identifies, documents, resolves, and/or escalates issues to the appropriate level • Supports the IV&V team and the project with specific knowledge of functional areas and technology/industry standards • Participate in requirement Joint Application Design (JAD) sessions and document results of those meetings • Validate workflow requirement mappings using data captured at JADs • Verify work products created from the FI throughout the major MMIS contract components • Review Systems Designs of all MMIS contract components and documents risks and variations based on earlier defined requirements and the standards • Review Technical Designs of all MMIS contract components and documents risks and variations based on earlier defined requirements and the standards • Validate Code reviews/walkthroughs of all MMIS contract components and documents risks and variations based on earlier defined requirements and the standards • Validate Requirements Traceability • Review implementation plan of all MMIS contract components and documents risks and variations based on earlier defined requirements • Verifies MITA compliance and functions line up with the state self-assessment • Validate FI Test Plans and parallel testing of all MMIS contract components and documents risks and variations based on earlier defined requirements • Validate the preparation of test scripts and the execution of UAT of all MMIS contract components and documents risks and variations based on earlier defined requirements

Role	Responsibilities
	• Provide support for documenting CMS requirements and ongoing support as assigned by the Project Manager/IV&V Lead • Verify adequacy and validity of software quality assurance processes and the application of SEI CMMI continuous quality improvement efforts • Evaluation and assessment of services provided by other project consultants • Prepare IV&V final report • Provides support, as needed, to the PCG IV&V Technical Lead and Project Manager/IV&V Lead
IV&V Test Lead	• Assist in assuring the planning and management of the test resources • Assist in assessing the progress and effectiveness of the test effort • Assist in planning the testing effort by analyzing the requirements of project • Assist in defining the Testing Strategy • Assist in the development of the test plan for the tasks, dependencies and participants to mitigate the risks to system quality • Assure that the environment (hardware and software requirements) to support testing is appropriate and workable • Develop assignments for the IV&V Testing Team members • Help assure that the content and structure of the Testing documents / artifacts is produced and maintained • Help assure that standards and guidelines as defined by the organization are documented, implemented, monitored and enforced regarding testing efforts • Review or assign the review of the Test Cases/scripts document • Appropriately escalate any issues concerning project requirements (Software, Hardware, Resources) to Project Manager/IV&V Lead • Provide IV&V testing status reports and send the status reports (Daily, Weekly, etc.) as appropriate • Provide weekly status to the project and attend meetings as appropriate • Provide communication with stakeholders and the project management team as needed and necessary • Act as the single point of contact between Project and developers and IV&V test team • Track and prepare summary statistics regarding testing results, test case coverage, required resources, defects discovered and their status, performance baselines etc. • Provide document support by reviewing and commenting on the various reports prepared by the project test team

Role	Responsibilities
	• Help assure that testing milestones are met • Help provide the metrics at the end of each phase and/or at project completion • Provides support, as needed, to the PCG IV&V Technical Lead and Project Manager/IV&V Lead
IV&V Test Analysts	• Assist in identification of target test items to be evaluated by the testing efforts • Assist in defining the appropriate tests and associated test data as required • Assist in gathering and managing test data • Assist in the evaluation of the test results and outcomes of each test cycle • Utilize the defect tracking system used by the project to communicate defects and problems as encountered during testing • Works with the Testing team to assist with the preparation of test plans • Assist with the testing based on guidelines and standards as defined by the project • Assist in the preparation of test cases/scripts • Ensure high quality and accuracy of the application for the project through deployment • Assist in the preparation and maintenance of test plans involving testing tools • Assist in the preparation of test plans and test cases/scripts for each component as related to business rules including expected results • Provide estimates and feedback to the Project Manager/IV&V Lead regarding schedule • Provides support, as needed, to the IV&V Test Lead as needed

4.5. Tools, Techniques, and Methods

The IV&V services will be primarily based upon IEEE 1012-2010, Software Verification and Validation and applied in accordance with IEEE 12207-2008, Software Life Cycle Processes. PCG has tailored its approach and methodology to be consistent with the needs of the EX-MMIS Project. The PCG IV&V team will perform the appropriate analysis, evaluation or review, and provide feedback and recommendations to the project on a flow basis. This information will be compiled and submitted as part of the appropriate deliverable for review and necessary action, if any. PCG will be available to provide additional briefings on the feedback.

The goal of the PCG IV&V methodology is to provide an objective assessment of products and processes throughout the project life cycle. PCG's IV&V services focus on four key elements:

- **Use a Planned Approach** – The IV&V Plan will include identification of all IV&V tasks, activities, resources, schedules, methodologies, tools, standards, administrative requirements and reporting requirements. The Plan will serve as the guide for performing all activities and will be used to perform the IV&V closeout.
- **Use the Best Tools** – IV&V will utilize the best tools for assessing the quality of the product, and the effectiveness and efficiency of the processes. Several standards have been identified in Section 4.3.2 as relevant to the EX-MMIS and will be applied appropriately. Additional standards and best practices will be applied as necessary to assess the project and its activities.
- **Apply Experience** – With any IT project, the importance of identifying problems early is critical. This requires the use of personnel with significant experience in critical knowledge areas. The PCG IV&V team is composed of experienced consultants with current expertise in the business and application of technologies defined by the EX-MMIS.
- **Build an Independent Cooperative Team** - The PCG IV&V team will work with the EX-MMIS Project team (where applicable) in a cooperative and constructive manner, while retaining an independent perspective and contributing to overall project success.

PCG will tailor its approach to be consistent with the focus of the EX-MMIS and will conduct all reviews utilizing the following processes:

- **Discovery** – Review project documentation, work products, deliverables, and interview key project team members to gain a thorough understanding of the assessment area. It is during this phase that applicable standards, best practices and lessons learned will be identified as evaluation criteria.
- **Research and Analysis** – Research and analysis will be conducted for specific aspects of the products or processes being assessed in order to form an opinion of the validity of the proposed tool selection, design, and/or implementation approach. Once the initial analysis is completed the assessment results will be documented.
- **Clarification** – Seek clarification from key project team members on specific aspects to ensure agreement and concurrence between the EX-MMIS, DHCS, and the PCG IV&V team.
- **Document** – Document the results of discovery, research, analysis, and clarification in the form of a review report. These reports will contain key findings, observations and risk assessments. While it is critical that the PCG IV&V team maintain its independence, it is also critical that

constructive feedback in the form of mitigation strategies and alternatives, as well as the potential impact to the project if the risk is not addressed, be provided by the PCG IV&V team. However, PCG recognizes that it is the EX-MMIS Project team that will determine which recommendations will be incorporated or modified for incorporation, or if a different approach will be taken.

4.5.1. Deliverable Generation Process

For each required deliverable, PCG will use a 4-step deliverable approach:

- *Deliverable Expectation Document* – Prior to beginning work on any documents that PCG will be directly producing, PCG will meet with the EX-MMIS Deputy Project Director to discuss their format and content. The goal of this discussion is to ensure that a common understanding exists between the DHCS and PCG regarding the scope and content (depth and breadth) of the deliverable prior to PCG beginning work.
- *Interim Work Products* – The results of group work sessions will be incorporated into Interim Work Products for internal Project Team reviews. This process ensures early warning should a miss-understanding have occurred.
- *Baseline Draft Deliverable* – PCG will produce a baseline draft deliverable for formal project review/comment prior to submission of the final deliverable.
- *Final Deliverable* – The submission of the final deliverable will incorporate input from the Baseline Draft Deliverable review.

All baseline draft and final deliverable work products are subject to PCG's internal Quality Assurance (QA) process. PCG will internally review all products prior to submission to DHCS. Internal reviews include self-review, peer review and/or Project Manager/IV&V Lead review.

The PCG QA process meets strict standards of quality, ranging from the basics of proper grammar, punctuation, and spelling, to more complex areas of internal document consistency, alignment with applicable standards, industry best practices, and the overall message that is being communicated.

4.5.2. Sampling Approach

PCG uses a practical approach to conducting IV&V services. In this regard, any time it is impractical or unnecessary for IV&V to evaluate/review 100% of what is produced by a development process, PCG may use a sample. The sample will be selected using a structured approach based on industry standards/concepts. The sample size varies for each project as the variables are unique per project and project task. IV&V tasks completed using a sampling approach will be discussed with DHCS prior to initiating the task. A task such as review of test

results is an example of when a sampling approach for the Replacement Phase could be used. The details of the sampling approach, i.e., formula used, sample size selection, will be included in the IV&V review report provided to EX-MMIS should a sampling approach be used.

4.5.3. Knowledge Transfer

We view DHCS and PCG as a unified team. We offer our services as a partner, a mentor, and as a knowledge transfer agent, focused on providing leadership support with the key objective of enabling DHCS to effectively manage the EX-MMIS project. It is important to our success that our clients understand and can own the findings we identified.

Our knowledge transfer approach is based on mentoring and clear communication of best practice methodology and processes. As applicable, we reference standards and lessons learned from other projects to provide context to our written communication. Our work products stand alone and/or contain clear references so that the reader is able to understand the process. As we work with EX-MMIS staff on a continual basis for understanding of our process for conducting evaluations/reviews and understanding the basis for issues/risks included in our evaluation reports, EX-MMIS staff will gain a better understanding for IV&V.

As areas for more formalized knowledge transfer are identified, we ask to clearly identify the EX-MMIS resources involved in the transfer and can establish a more structured mentoring relationship or customize our knowledge transfer methods/documentation to meet the needs.

4.5.4. Independent Testing Methodology

The PCG approach to independent testing for projects is based upon both the IEEE 1012-2010 and the IEEE 829-2008 standards for testing new systems. PCG's independent testing services provide our clients with an independent verification of key components of the software and system to determine that requirements (functional and technical) have been satisfied, and that the system functions as intended. Independent testing is conducted with the same level of independence as all other IV&V tasks. As such, the IV&V testing is outside of the EX-MMIS prime vendor and DHCS management and technical realm.

The goal of independent testing is to:

- Detect and correct software errors in key portions of the system as early as possible
- Provide management with additional insight into the test process and application related risks
- Establish a basis for assessing the completion of each test phase
- Ensure compliance with stated performance requirements

- Provide a basis for the recommendation to proceed with implementation

PCG will work with the EX-MMIS to ensure that comprehensive test plans are created, well-defined test cases/scripts are developed, and a process exists for documenting results for each of the four replacement phases. These tests will primarily focus on components of system development that are functionally complex, time critical, error-prone, or in which critical dependencies exist (i.e., key external interfaces).

It is important to note that PCG's independent testing activities will be conducted independently, but also simultaneously with the Project's overall system integration testing (SIT) and user acceptance testing efforts. As a result, there will be little impact to the overall project's testing schedule. PCG is reliant upon the EX-MMIS to provide independent test environment needs such as test data, system clock settings, interfaces and executables.

4.5.5. IV&V V-Model

PCG utilizes the IV&V V-Model as a standard methodology for independent testing on system development projects. The IV&V V-Model correlates to the V-Model of system development, and presents a summary of the main steps to be taken in conjunction with the corresponding project deliverables within the IV&V framework. It is a process that represents the sequence of steps in a project life cycle development that describes the results that have to be produced during system development. As displayed in Figure 4 - IV&V V-Model below, the left side of the model represents the decomposition of requirements and creation of system specifications, and the right side of the model represents integration of parts and their verification.

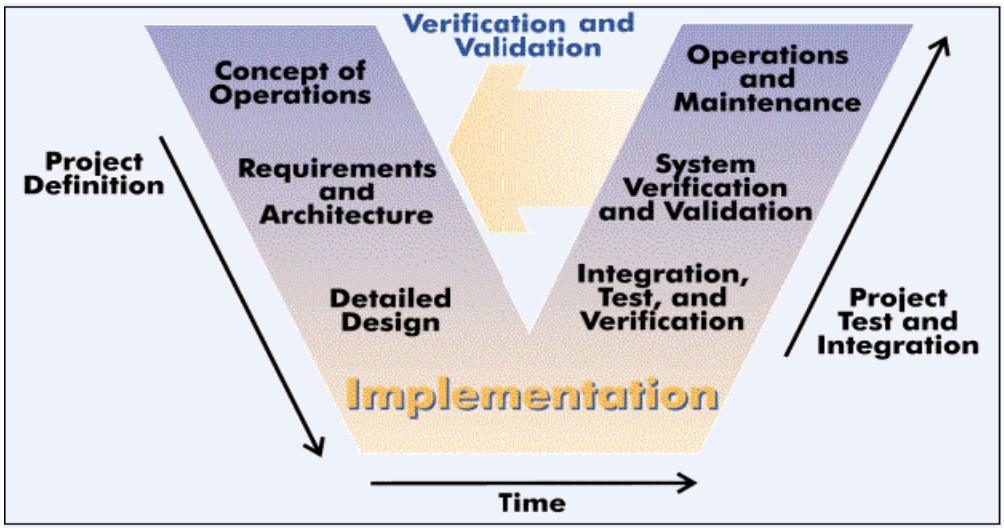


Figure 4 - IV&V V-Model

The IV&V V-Model provides guidance for the planning and realization of projects. The following objectives are intended to be achieved by a project execution:

- **Minimization of Project Risks** – The IV&V V-Model improves project transparency and project control by specifying standardized approaches and describing the corresponding results. It permits an early recognition of planning deviation and risks.
- **Improvement and Guarantee of Quality** – As a standardized process model, the IV&V V-Model ensures that the results to be provided are complete and have the desired quality. Defined interim results can be checked at an early stage. Uniform product contents will improve readability, understandability and verifiability.
- **Reduction of Total Cost over the Entire Project and System Life Cycle** – The effort for the development, production, operation and maintenance of a system can be calculated, estimated and controlled in a transparent manner by applying a standardized process model. The results obtained are uniform and easily retraced.
- **Improvement of Communication between all Stakeholders** – The standardized and uniform description of all relevant elements and terms is the basis for the mutual understanding between all stakeholders. Thus, the frictional loss between user, acquirer, supplier and developer is reduced.

4.5.6. Functional Testing

PCG performs reviews of the functional testing on the entire system and conducts independent tests up to and beyond the bounds defined in the requirements specification(s). The following list defines the types of test cases/scripts PCG expects to review and evaluate, and represents the body of functional testing that PCG will address within the IV&V test plan:

- **Component Integration Testing** – Testing of a partially integrated application to identify defects involving the interaction of components. These can be custom developed software or Commercial Off-the-Shelf (COTS) applications.
- **Requirements Based/Design Specification** – Verify the execution of the selected test cases/scripts to demonstrate that requirements and design specifications have been implemented in the system and that all functionality performs as intended.
- **Destructive Testing** – These tests are designed to force the system to respond to invalid data entries, exception conditions, and valid but extreme data conditions (boundary conditions).
- **Run-Time Errors** – Test Cases/scripts that will validate whether or not the run-time errors have been eliminated.

- **Data Element Testing** – Tests to ensure that all applicable data types can be used across the application. This testing requires the use of an equivalence class of input data values that will trigger all unique/independent actions within the application.
- **Data Integrity Testing** – These tests will ensure integrity of all data entered and used across the application, and that the MMIS database does not experience any database corruption in a multi-user environment while performing various functions and sharing the same data files.
- **Security Testing** – Tests to ensure that all levels of application security have been implemented based on security requirements and design specifications. In addition, tests to assess the vulnerability of the MMIS to external threats.
- **End-to-End Testing** – Execute tests designed to simulate actual workflow/operational conditions. End-to-end testing will require a fully integrated application environment.
- **User-Friendly Assessment** – Perform a usability assessment and provide appropriate feedback regarding adherence to the MMIS requirements, and standard user interface and workflow design.
- **Consistency Check** – Perform a Consistency Check and provide appropriate feedback regarding adherence to MMIS requirements.
- **Regression Testing** – Provide regression testing on all areas that have been modified by changes/fixes encountered during the course of testing.
- **Parallel Testing** – Testing of the replacement MMIS against the legacy system using declared conditions as a reference. Verification of these points will be documented as well as the confirmed and unconfirmed variances in the parallel runs.

4.5.7. Technical Testing

PCG performs reviews of the technical testing on the entire system and conducts independent tests up to and beyond the bounds defined in the requirements specification(s). The following list defines the types of test cases/scripts PCG expects to review and evaluate, and represents the body of technical testing that PCG will address within the IV&V Test Plan:

- **Performance –** Tests that will measure the response times for various user actions in a multi-user situation for up to a predetermined number of connected and concurrent users.
- **Interfaces –** Tests on all interfaces to external legacy systems or to replacement systems to ensure that they can communicate and transfer the required data, that the interfaces are secure, and that the timeframes

for data transfer and transaction processing meet requirements for both the MMIS and the external or legacy systems.

- **Firewalls –** Tests on hardware to prevent outside system access to those who do not have appropriate permission or authorization.
- **Load Balancing –** Tests that address high-performance and high-availability in the application by maintaining equal distribution of work among the execution architecture components and by routing requests to functioning architecture components in the event of a failure.

5. IV&V Processes (Activities and Tasks)

This section provides the processes to be used throughout the EX-MMIS, and the IV&V activities to complete the SOW IV&V services. Each activity includes the tasks which will be used to complete associated deliverables, and process attributes which will be used to develop the IV&V Schedule.

- Methods and Criteria
- Inputs
- Outputs/Deliverable
- Project Phase(s)
- Resources
- Applicable Standards
- Measure of Completion
- Roles and Responsibilities

The following activities will be performed throughout the EX-MMIS:

- Activity One – IV&V Management
  - Develop and Maintain the IV&V Schedule
  - Develop and Maintain the IV&V Plan
  - Participate in Monthly Project Meetings
  - Prepare and Deliver IV&V Monthly Status Report
- Activity Two - Assessments
  - Conduct Phase Assessment
  - Conduct Business Rules Extraction Plan Review
  - Conduct Business Rules Extraction Process Review
  - Conduct Requirements Development and Management Process Verification review
  - Conduct Requirements Evaluation
  - Conduct Requirements Traceability Analysis
  - Conduct General System Design Assessment
  - Conduct Detailed System Design Evaluation
  - Conduct Risk Analysis
  - Conduct Data Conversion Planning Assessment
  - Evaluate System Change Request
  - Conduct Test Planning Assessment
  - Conduct Quality Assurance Evaluation

- Conduct Code Review
- Conduct Source Code Review of Transfer System
- Conduct Test Evaluation Report
- Conduct Configuration Management Assessment
- Conduct Maintenance Planning Evaluation Report
- Conduct Initial Interface Analysis
- Conduct Technical Interface Analysis
- Conduct Architectural Design Assessment
- Conduct Security Assessment
- Conduct Performance Monitoring Assessment
- Conduct Implementation Planning Assessment
- Conduct Deployment Evaluation
- Conduct CMS Certification Assessment

- Activity 3 Lessons Learned and Closeout Phase
  - Conduct IV&V Lessons Learned
  - Conduct IV&V Final Report
- Activity 4 – IV&V Testing
  - Develop IV&V Test Plan and Schedule
  - Complete IV&V Test Design
  - Develop IV&V Test Cases/Scripts
  - Execute IV&V Test Cases/Scripts
  - Prepare IV&V Test Exit Report

In general, the activities will provide an independent assessment of the EX-MMIS progress and identify risks and issues for the duration of the engagement. They include specified deliverables and tasks.

5.1. Activity One – IV&V Management

5.1.1. Develop and Maintain the IV&V Schedule

Develop and Maintain the IV&V Schedule (SOW F.1)	
Methods and Criteria	PCG will develop and submit a detailed Schedule for accomplishing the tasks identified in the SOW. This plan will include timelines, milestones, resource requirements, tasks, deliverables, deliverables acceptance criteria, etc. to perform the tasks for this SOW. PCG will maintain the Schedules for the duration of the engagement. It will be developed using IEEE Std. 1058, PMI Practice Std for WBS and PMBOK as guides. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager, as needed

Develop and Maintain the IV&V Schedule (SOW F.1)	
	• Complete resource allocation for the duration of the project • Schedule IV&V tasks to correspond to the IV&V Plan and EX-MMIS schedules • Monitor the related project plans and schedules for changes that impact the Schedule • Update the Schedule, monthly
Inputs	EX-MMIS Plans, Work Products, and Schedules EX-MMIS IV&V & Oversight RFP SOW
Outputs/Deliverable	Initial Schedule (deliverable) Monthly Updates (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead IV&V Technical Lead Senior IV&V Consultants – SMEs DHCS Contract Manager
Applicable Standards	PMBOK PMI Practice Std for WBS IEEE 1058
Measure of Completion	Last Monthly Update accepted
Roles and Responsibility	PCG Project Manager/IV&V Lead will complete the task with input from the IV&V Technical Lead and Senior IV&V Consultants- SME's DHCS Contract Manager will review/approve the deliverable

5.1.2. Develop and Maintain IV&V Plan

Develop and Maintain IV&V Plan (SOW F.3)	
Methods and Criteria	PCG will prepare the Independent Verification and Validation (IV&V) Plan for all lifecycle processes formatted per IEEE Std. 1012-2010, using IEEE 1059 and the RFP SOW requirements. The plan will include identification of all IV&V milestones, tasks, activities, resources, schedules, methodologies, tools and standards. The IV&V Plan will serve as the guide for performing all activities. PCG will update the IV&V Plan to keep it current throughout the IV&V effort. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Plan the IV&V schedule for each task that corresponds to the

Develop and Maintain IV&V Plan (SOW F.3)	
	development schedule • Plan the interface between the IV&V effort and the FI Vendor • Schedule IV&V tasks to support project management reviews and technical reviews • Identify project milestones • Determine the IV&V tasks defined to be in scope by the RFP SOW requirements • Prepare IV&V Plan • Submit draft IV&V Plan • Update IV&V Plan, as needed • Submit IV&V Plan for approval • Baseline IV&V Plan after approval from DHCS Contract Manager
Inputs	EX-MMIS Plans and Work Products EX-MMIS IV&V RFP & SOW
Outputs/Deliverable	DED (work product) IV&V Plan (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead IV&V Technical Lead Senior IV&V Consultants – SMEs DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 1059
Measure of Completion	Deliverable Acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead will plan and prepare materials for this task All Senior IV&V Consultants will provide input for the IV&V Plan updates, as needed DHCS Contract Manager will review/approve the deliverable

5.1.3. Participate in Monthly Project Meetings

Project Meetings (SOW B)	
Methods and Criteria	On a weekly basis, PCG IV&V will meet with the DHCS to discuss work in progress risks, issues, and recommendations. As needed, PCG will provide advice and guidance for implementing recommended actions and, to the extent possible, help to assess and minimize the overall impact of some recommendations. Steps associated with this task are: • Determine regular meeting schedule with EX-MMIS Deputy Project Director • Develop findings regarding status, schedule, risks, and issues • Meet with EX-MMIS Deputy Project Director to discuss critical items and overall impacts • Document progress and resolutions to be implemented Additionally, the PCG Engagement Manager or their designee will meet with the DHCS Chief Deputy Director monthly to discuss IV&V work in progress and identify opportunities for improvement to IV&V processes
Inputs	IV&V Risk Report IV&V Schedule All other IV&V deliverables as appropriate
Outputs/Deliverable	Updates to IV&V Schedule, IV&V Risk Log, and Action Items, as needed
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Engagement Manager Project Manager/IV&V Lead IV&V Technical Lead Oversight Lead Senior IV&V Consultants – SMEs
Applicable Standards	N/A
Measure of Completion	Completion of engagement
Roles and Responsibilities	The Engagement Manager or their designee will attend all monthly meetings The Project Manager/IV&V Lead, IV&V Technical Lead, and Oversight Lead will attend all weekly meetings. The Senior IV&V Consultants – SMEs may attend the weekly meetings as needed

5.1.4. Prepare IV&V Monthly Status Reports

IV&V Monthly Status Report (SOW F.4)	
Methods and Criteria	PCG will submit a written Monthly Status Report (MSR) to the DHCS Contract Manager. The specifics will be fully defined in the IV&V Plan deliverable. The report at a minimum will contain: • Activities performed in the reporting period • Activities planned for the next reporting period • Detailed findings and recommendation for activities in progress • Identification of risks and issues that will impede completion of the work/study • Recommendations regarding how to mitigate the impact of the identified risks and issues Steps associated with this task: • Complete the DED process with DHCS Contract Manager to be used for the initial report and for reoccurring monthly report • Ensure IV&V Schedule is updated • Gather relevant IV&V data for the reporting period as needed, such as updated risks and issues, product and/or process findings • Prepare and submit report to DHCS Contract Manager • Provide updated report, if requested • Update IV&V Action Item log, as needed
Inputs	Risk Log IV&V Task Reports IV&V Schedule IV&V updates on on-going activities IV&V preliminary finds; work in progress
Outputs/Deliverable	DED (work product) Monthly Status Report (deliverable) Updated IV&V Schedule
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead IV&V Technical Lead Senior IV&V Consultants – SMEs IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 1012
Measure of Completion	Deliverables accepted

IV&V Monthly Status Report (SOW F.4)	
Roles and Responsibilities	PCG Project Manager/IV&V Lead will plan and oversee the task PCG IV&V Technical Lead will review content for thoroughness and accuracy The Senior IV&V Consultants – SMEs will provide input from activities for the month The IV&V Test Lead will provide input from activities for the month DHCS Contract Manager will review/approve the deliverable

5.2. Activity Two - Assessments

5.2.1. Conduct IV&V Phase Assessment

Phase Assessment (SOW C.1.a, C.1.b, C.1.c, C.1.g, E.2, E.2.a, E.2.b)	
Methods and Criteria	PCG will conduct an IV&V risk based assessment for each phase of the EX-MMIS Project beginning with the Planning Phase. During the planning for each project phase PCG will identify and analyze technical project risks and evaluate the state of readiness for that phase. Phase assessments may be updated throughout the project as indicated based on volume of issues/risks and/or project progress. The assessment will include: Verification of the conformance of the EX-MMIS FI Contractor's system architecture approach and software system design and development with contract requirements, requirements for enhanced Federal Funding, established and accepted criteria, industry best practices and technical standards. Validation of the quality and reliability of the CA–MMIS FI Contractor deliverables. Steps associated with the activity: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (i.e. review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the phase processes and procedures) • Research & Analysis—research and analyze specific aspects of the phase in order to form an opinion of the validity of the processes, software development and implementation approach. Components to consider: ▪ Identify the technical, business and organizational risks ▪ Identify technical risks relevant to the defined requirements, proposed technical architecture, system development life cycle processes, proposed tools and utilities, test strategy, and system security ▪ Review State/project policy/standards for software development (SDLC) ▪ Analyze each risk for probability of occurrence and potential

Phase Assessment (SOW C.1.a, C.1.b, C.1.c, C.1.g, E.2, E.2.a, E.2.b)	
	impact on the project, and prioritize ▪ Verify that risk management planning produces plans for addressing each major risk item and coordinates individual risk plans to the overall project plan ▪ Verify that risk planning ensures project schedules and cost estimates are adjusted to ensure adequate time is allocated to properly develop and execute risk mitigation measures when required ▪ Verify that critical risk items are highlighted as part of project review ▪ Provide recommendations to eliminate, reduce, or mitigate the risk ▪ Verify senior management involvement in software processes (governance) ▪ Adequacy of resources (staffing and funding) for software processes ▪ Availability of training for processes and technical tools ▪ Adequacy of process improvement plans ° Clarification—seek clarification from key project team members on specific aspects of the system phase to ensure agreement and concurrence among DHCS, PCG and the project team ° Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. ° Prepare the report ° Submit the draft report to the DHCS Contract Manager for review ° Update the report, as needed • Submit the final report to DHCS Contract Manager for approval
Inputs	Project Management Plans Architecture and Design work products Planning documents and work products for each phase Vendor Schedule EX-MMIS RFP & SOW
Outputs/Deliverable	DED (work product) Phase I through IV Assessment Report (deliverable) Phase Assessment Report updates as indicated Monthly Status Report Updates
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment

Phase Assessment (SOW C.1.a, C.1.b, C.1.c, C.1.g, E.2, E.2.a, E.2.b)	
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 16085 IEEE 12207
Measure of Completion	Deliverable accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME) with expertise in Technical and Functional requirements will conduct the reviews for their appropriate section of the development plans and other materials. DHCS Contract Manager will review/approve the deliverable.

5.2.2. Conduct Business Rules Extraction Plan Assessment

Business Rules Extraction Plan Assessment (SOW C.1.c)	
Methods and Criteria	PCG will conduct an IV&V risk based assessment of the Business Rules Extraction plan. PCG will identify and analyze the project management risks based on the Business Rules Extraction approach and overall planning effort. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Perform BRE planning assessment • Prepare and submit draft report to DHCS Contract Manager • Submittal of the final report to DHCS Contract Manager for approval
Inputs	Business Rules Extraction Plan Project Management Plans Software Development Approach EX-MMIS Contract (RFP/NTP) Best Practices References Extraction artifacts as available Business Rules Repository (DOOR)
Outputs/Deliverable	DED (work product) BRE Plan Assessment Report (deliverable) Updated Monthly Status Report (deliverable)
Project Phase(s)	EX-MMIS Pre-Kickoff Planning Phase
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager

Business Rules Extraction Plan Assessment (SOW C.1.c)	
Applicable Standards	IEEE 12207 IEEE 1012
Measure of Completion	BRE Assessment Report accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task Senior IV&V Consultants (SME) with experience in multiple software languages, business rules extraction and MMIS systems and methodologies will review the plans and prepare the report. DHCS Contract Manager will review/accept the deliverable

5.2.3. Conduct Business Rules Extraction Process Review

Business Rules Extraction Process Review (SOW C.1.c)	
Methods and Criteria	PCG will conduct an IV&V risk based assessment of the Business Rules Extraction process. PCG will identify and analyze technical and management project risks as the Business Rules are extracted from the Legacy system(s). The assessment will include: Steps associated with this task: • Complete DED process with DHCS Contract Manager • Risk management of BRE process, Business rules audits to include: ▪ Business Rules Repository ▪ Business Rules Implementation Repository ▪ Extracted rules sampling for validation and traceability ▪ Association of business rules to requirements ▪ Code extraction sampling if available ▪ Taxonomy Classification • Review of testing methods • BRE test plan assessment if available • Prepare and submit draft report to DHCS Contract Manager • Update the report, as needed • Submittal of the final report to DHCS Contract Manager for approval
Inputs	Business Rules Extraction Plan Phase specific BRE work products Requirements/Business Rules Repository (DOORS) Rules Implementation Repositories Project Management Plans EX-MMIS Project Schedule Software Development Approach Taxonomy Classification Scheme Documented policies Legacy Code Logic if available

Business Rules Extraction Process Review (SOW C.1.c)	
Outputs/Deliverable	DED (work product) BRE Process Assessment Report (deliverable) BRE Process Assessment Report (as requested/needed) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 12207 IEEE 1012
Measure of Completion	BRE Assessment Report accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task Senior IV&V Consultant (SME) with business rule extraction methodology experience will review the BRE processes and prepare the report DHCS Contract Manager will review/accept the deliverable

5.2.4. Conduct Requirements Development and Management Process Verification Review

Requirements Development and Management Process Verification Review (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	As part of the IV&V acquisition support, PCG will conduct system functional and technical requirements reviews of the Replacement System requirements development and management planning and processes. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (i.e. review project documentation, work products, deliverables and interview key project team) members to gain a thorough understanding of the requirements development and management processes, and associated Business Rules Extraction, Change (Control) Management, configuration management and SDLC processes. • Research & Analysis—research and analyze the requirement development and management effort to assess the capabilities of the processes. Review and analyze the Requirements Development and Management Plan, Change (control) Management Plan and the

Requirements Development and Management Process Verification Review (SOW C.1.b, C.1.c, C.1.g, F.4)	
	SDLC processes for an evaluation of the ability to maintain requirements according to plan for the duration of the project. Components to consider: ▪ Review requirements, linkage to business rules, and SDLC plans ▪ Verify the processes comply with relevant standards (CMMI, IEEE etc.) ▪ Verify that plans, processes and procedures are consistent, comprehensive and sustainable. ▪ Conduct a review of development of requirements management practice to determine how closely the documented process are being followed ▪ Conduct a review of requirements in DOORS to determine if current identification, categorization, and refinement practice is producing valid outcomes • Clarification -- seek clarification from key project team members on specific aspects of the requirements development and management processes to ensure agreement and concurrence among DHCS, PCG and the ACS project team • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies • Prepare the report • Submit draft report to DHCS Contract Manager for review • Update the report, as needed • Submit final report to DHCS Contract Manager for approval
Inputs	EX-MMIS RFP & SOW Statement of Need if available Business Rules Extraction Plan Software Development Approach Project Management Plans SDLC Design, and Test plans and processes if available Vendor RFP Gap Analysis (+Exhibit A, Section II, Exhibit E and 7 conditions for Enhanced Federal Funding) System requirement specification documentation Requirements traceability matrix Applicable industry standards Project standards State policy/regulations Requirements Repository (DOORS)
Outputs/Deliverable	DED (work product) Requirements Development and Management Plan Assessment Report (deliverable)

Requirements Development and Management Process Verification Review (SOW C.1.b, C.1.c, C.1.g, F.4)	
	Requirements Development and Management Plan Assessment Report Update (as requested/needed) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Pre-Kickoff Planning • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 830 IEEE 1028 IEEE 1012 CMMI Requirements Development (RD) Requirements Management (REQM) IEEE 1233 State Medicaid Manual IEEE 16085 DTS Security Standards MEDS & SSA Requirements HIPAA Requirements
Measure of Completion	Deliverable accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task Senior IV&V Consultant (SME) with expertise in system development and architectural requirement MMIS program and technical needs will conduct the reviews DHCS Contract Manager will review/accept the deliverable

5.2.5. Conduct Requirements Evaluation

Requirements Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	The requirements validation tasks will include review of SR documented requirements as reported in the official requirements repository (DOORS). A sampling of the requirements will be evaluated to determine if they are correct, unambiguous, complete, consistent, prioritized, verifiable, modifiable, and traceable.

Requirements Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (i.e. review project documentation, work products, deliverables and interview key project team) members to gain a thorough understanding of the requirements and associated Business Rules • Research & Analysis—research and analyze the replacement system requirement and the validity and quality thereof. Components to consider ▪ Evaluate the requirement specifications for: ▪ Correct - Verify that applicable specifications, such as a system requirements specification are in alignment with higher level project documentation and user needs ▪ Unambiguous - Verify that the requirements are concisely stated without recourse to technical jargon, acronyms (unless defined elsewhere in the Requirements document), or other esoteric verbiage; expresses objective facts, not subjective opinions; is subject to one and only one interpretation. Vague subjects, adjectives, prepositions, verbs and subjective phrases are avoided. Negative statements and compound statements are avoided ▪ Complete - Verify that each requirement is fully stated in one place with no missing information ▪ Consistent – Verify that the requirement does not contradict any other requirement and is fully consistent with all authoritative external documentation and agreed to standards ▪ Prioritized – Verify that requirements are separately identified or grouped as to importance to the customer ▪ Verifiable – Verify that the implementation of the requirement can be determined through one of four possible methods: inspection, demonstration, test or analysis ▪ Modifiable – Verify that each requirement be uniquely labeled and expressed separately from other requirements so it can be referred to unambiguously ▪ Traceable – Verify that each requirement meets all or part of a business need as stated by stakeholders and authoritatively documented • Evaluate the requirement specifications to determine if they meet the needs and objectives for the intended use • Existing business functionality (as documented in Exhibit A, Section II) and represented in the legacy system • Replacement system business functionality (as documented in Exhibit A, Section VI) • Technical capability as documented in Exhibit E, 7 conditions for Federal Funding • Prepare the report • Submit draft report to DHCS Contract Manager for review

Requirements Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Update the report, as needed • Submit final report to DHCS Contract Manager for approval
Inputs	EX-MMIS RFP/NTP Approved CR's Requirements specifications and design documentations Project Management Plans Requirements Repository (DOORS) SDA SDN's
Outputs/Deliverable	DED (work product) Requirements Evaluation Report (deliverable)Requirements Evaluation Report Update (as requested/needed) Update Monthly Report as needed
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 830 State Security Policy/Standards IEEE 1016
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task Senior IV&V Consultant (SME) with expertise in MMIS requirements; System Development and Architecture will conduct the reviews The IV&V Test Lead will conduct a review of the appropriate sections of requirements for testability DHCS Contract Manager will review/accept the deliverable

5.2.6. Conduct Requirements Traceability Analysis

Requirements Traceability Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG will review the requirements to ensure that they are tracked and have forward and backward traceability. PCG will select a requirements sample size to complete this task at key milestones in the SDLC to ensure traceability is consistently and appropriately represented in exit criteria. (Requirements specifications, design, test). Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the SDLC procedures relevant to requirements trace-ability • Research & Analysis— Review requirements at key SDLC milestones to ensure traceability is maintained. Components to consider: ▪ Correctness, consistency, completeness, and accuracy of tracings ▪ Verify forward and backward traceability ▪ Verify that the mapping method is logical and can be maintained throughout the project ▪ Changes to requirements and functionality are tracked according to the Change (Control) Management Processes, and that technical and management project documentation affected by the change is updated • Clarification—seek clarification from key project team members on specific aspects of the traceability to ensure agreement and concurrence among DHCS, PCG and the project team • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain a description of the sampling procedures and statistical analysis. Findings related to identified anomalies and trends. • Prepare report • Submit draft report to DHCS Contract Manager for review • Update the report, if needed • Submit final report to DHCS Contact Manager for approval
Inputs	EX-MMIS RFP & SOW Requirement specifications and design documentation Test Plan Test Plan Results Requirements/Business Rules Repository (DOORS) Business Implementation Repository Requirement Traceability Matrix (RTM) Project Management Plans SDA

Requirements Traceability Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	
Outputs/Deliverable	Requirements Traceability Evaluation Report (deliverable) Requirements Traceability Evaluation Report Updates (as needed/requested) Updated Monthly Status Report (deliverable)
Project Phase(s)	Inception, Elaboration, Construction, and Transition of the SPARK-ITS SDLC phases for each of the four project phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 830 ISO/IEC 12207
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task Senior IV&V Consultant (SME) with expertise in MMIS functions will conduct the reviews The IV&V Test Lead will review the test plans against the RTM DHCS Contract Manager will review/accept the deliverable

5.2.7. Conduct General System Design Assessment

General System Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	Technical assessments are a key component to the success of IV&V services provided by PCG and in turn contribute to the success of the project. Our method of technical assessments completed with the broad experience of our consultants has proven to be highly significant input to the success of our clients' projects. The quality of experience that our Consultants provide is an unmatched asset to the IV&V services provided to DHCS. As part of our IV&V services for DHCS EX-MMIS, we are purposing a general system design evaluation/technical assessment. We believe the technical assessment will be critical to the success of the project and downstream development processes. In addition, the findings will provide DHCS notification early in the SDLC of potential design risks to the SR System. The general system design assessment will consider the SR design for feasibility, capacity, performance, scalability and risk. In

General System Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	addition, consider the overarching question 'does the design support the business need and State's strategic objectives'. Our assessment will include the portfolio projects as a whole system as well as the individual project as each project each designed. Steps associated with this task are: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the system design). • Research & Analysis—research and analyze specific aspects of the system design in order to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ Feasibility – Will the proposed design work and will the requirements be satisfied by the defined technologies, methods, and algorithms defined for the project? ▪ Capacity – Will the proposed production configuration have the capacity to handle the workload? ▪ Performance – Will the proposed production configuration meet the performance criteria? ▪ Scalability – Will the proposed technical architecture be able to scale up to meet future workload and performance criteria? ▪ Risk – Can all of these objectives be met within a reasonable risk tolerance? ▪ Maintainability – Does the design introduce maintenance concerns? ▪ Adequate tools – Are the third party tools, if any, selected by the FI-Contractor to support the design adequate to meet the system's need? ▪ Database design • Clarification—seek clarification from key project team members on specific aspects of the system design to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Submit draft report to DHCS Contract Manager for review • Update the review as needed • Submit final report to DHCS Contract Manger for approval
Inputs	Preliminary System Description EX-MMIS RFP & SOW GSD

General System Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Outputs/Deliverable	DED (work product) General System Design Assessment Report (deliverable) General System Design Assessment Report Update (as needed/requested) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	ITIL Documented best-practices California Enterprise Architecture (CEAP) documentation IEEE 12207
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME) with expertise in System Development will conduct the reviews for their appropriate section of the development plans and related materials. DHCS Contract Manager will review/accept the deliverable

5.2.8. Conduct Detailed System Design Evaluation

Detailed System Design Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG purposes to conduct a detailed system design evaluation for the SR System. The technical risk assessment findings will provide DHCS early identification of risk related to the system detail design and provide information needed for effective mitigation planning. The assessment will be completed using the applicable IEEE standards as guides and best industry practices. The assessment will consider such things as, correctness, completeness, accuracy, and testability. PCG will include the portfolio projects as the entire system detail design as well as the individual project as each detailed system design is completed. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the system detail design)

Detailed System Design Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Research & Analysis—research and analyze specific aspects of the detail design in order to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ Verify and validate that the detail design is consistent with the approved general system design ▪ Verify that the design complies with standards, references, regulations, policies, physical laws, and business rules ▪ Operational software and various types of tools that will be required for SR System once deployed—does the system software address the system software requirements ▪ Assess system software (e.g., operating system, computer aided software engineering tools, database management system, repository, telecommunications software, graphical user interface) for feasibility, impact on performance and functional requirements, maturity, supportability, adherence to standards, developer's knowledge of and experience with the system ▪ Consistency between the design elements and external consistency with architectural design ▪ Objective acceptance criteria for validating each software design element and the system design ▪ Design elements are testable to objective acceptance criteria ▪ Database model • Clarification - seek clarification from key project team members on specific aspects of the detail design to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	IV&V Architecture Design Assessment Report IV&V GSD Assessment Report Refined Requirements (DOORS) Architecture Plan and Design documents Software Development Approach Requirements Specifications Documents Preliminary System Description if available EX-MMIS RFP & SOW DSD GSD IDD Data Conversion and Cleanup Plan and work products SDN's

Detailed System Design Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Outputs/Deliverable	DED (work product) Detailed System Design Assessment Report (deliverable) Detailed System Design Assessment Report Updates (as requested/needed) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 1028 IEEE 1016 ISO/IEC 12207
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. Senior IV&V Consultant (SME) with expertise in System Development will conduct the reviews. The IV&V Test Lead will review the test plans against the RTM. DHCS Contract Manager will review/accept the deliverable

5.2.9. Conduct Risk Analysis

Risk Analysis (SOW F.4)	
Methods and Criteria	Throughout the project, PCG will participate in risk assessment sessions with the project team, review risk matrices and mitigation plans, and identify and analyze technical project risks. PCG will provide recommendations on how to mitigate each identified risk and will ensure that these risks are continuously assessed and analyzed throughout the project. Steps associated with this task are: • Complete the DED process with the DHCS • Identify technical risks relevant to the defined requirements, proposed technical architecture, system development life cycle processes, proposed tools and utilities, test strategy, and system security • Analyze each technical risk for probability of occurrence and potential impact on the project, and prioritize

Risk Analysis (SOW F.4)	
	• Verify that risk management planning produces plans for addressing each major risk item and coordinates individual risk plans to the overall project plan • Verify that risk planning ensures that project schedules and cost estimates are adjusted to ensure that adequate time is allocated to properly develop and execute risk mitigation measures when required • Verify that the critical risk items are highlighted as part of project reviews • Develop Risk Analysis and Recommendations and submit draft to DHCS for review • Update as needed • Finalize Risk Analysis and Recommendations and submit to DHCS for approval
Inputs	Risk Management plan Risk Reports IV&V Reports
Outputs/Deliverable	Risk Analysis and Recommendations provided in IV&V Monthly Report and/or in a separate report as appropriate
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultants – SMEs Senior IV&V Consultant (SME) IV&V Program/Legacy EX-MMIS Expert
Applicable Standards	IEEE 16085
Measure of Completion	Deliverable Acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. PCG Primary, Program/Legacy EX-MMIS Expert and all Senior IV&V Consultants – SMEs will identify and elevate risks from IV&V tasks applicable from their area of business and technical expertise. IV&V Test Lead will identify and elevate risks from planning and performing testing activities.

5.2.10. Evaluate system change requests

Evaluate system change requests (SOW C.1)	
Methods and Criteria	During the development of the Replacement System, the normal course of change activity in the legacy system will continue, driven by new regulation and legislation, new user requirements and/or technology. However, change control at the program level will become more complex throughout the transition to the new Replacement System. Change requests will continue to be processed for the legacy environment potentially requiring a corresponding change to the Replacement System to ensure it is aligned with the EX-MMIS business needs. Additionally, requirements to interface to the legacy environment will generate change requests to implement the interface and may require additional change requests to ensure synchronization between the legacy and replacement environments. PCG understands the importance of managing the change request effort for cost and schedule management. An essential component for estimating cost is software application size. PCG, as discussed in the PCG Difference section of this proposal, has obtained extensive quantitative information from system changes to primarily California projects. This information enables PCG to conduct system change request reviews for reasonableness of cost based on quantitative data. The information will be essential input to 'fully informed' DHCS management's change request decisions. Both cost and timeliness are key considerations for the outcomes of this service. PCG purposes to evaluate system change requests as requested by DHCS for the duration of the engagement. Change requests can be evaluated on an as needed or representative sample basis. Steps associated with this task: • Review change requests for: ▪ Cost effectiveness of significant changes ▪ Reasonableness of estimated cost using PCG's tool ▪ Consideration of all solutions that may offer a viable alternative to requested changes ▪ Adherence to policies and regulations ▪ Change request documentation meets system requirements ▪ Documentation is concise, thorough, and comprehensive ▪ Adequacy of evaluation for major impacts to business processes or staff • Prepare and submit report to DHCS Contract Manager • Provide updated report, if requested • Update IV&V Action Item log, as needed
Inputs	Change Control Plan Request for Change System Requirements Basis of estimates documentation
Outputs/Deliverable	Change Request Evaluation, as needed (deliverable) Updated Monthly Status Reports

Evaluate system change requests (SOW C.1)	
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead IV&V Technical Lead Senior IV&V Consultants – SMEs
Applicable Standards	IEEE 828 IEEE 1012 SEI CMMI for Development
Measure of Completion	Completion of engagement
Roles and Responsibilities	PCG Project Manager/IV&V Lead will plan and oversee the task. The Senior IV&V Consultants – SMEs with the applicable skill set for the change will review and estimate requests as needed.

5.2.11. Conduct Test Planning Assessment

Test Planning Assessment (C.1.d, E.4.b.1)	
Methods and Criteria	The EX-MMIS Replacement System's testing, as with all systems, verify and validate the developed system meets the approved requirements and DHCS' business need. The effectiveness and adequacy of test planning provides DHCS a measure of test quality expected for the developed system. PCG IV&V will conduct test planning assessments to provide DHCS with early indication of the quality, effectiveness and adequacy, of EX-MMIS Replacement System testing. We will conduct an evaluation of the FI's environment(s), tools, procedures, and plans. Test evaluations will be made for each planned project and will include each planned test phase (i.e. system, stress, volume, parallel, acceptance, and regression). The evaluations will indicate the FI's level of compliance to the appropriate, documented State and industry standards. They will also verify that the test processes are adequate and complete, identify gaps, coverage and traceability of requirements, and recommend changes where insufficiencies are identified. To accomplish these assessments, PCG will use IEEE standard 829, 1012 and SEI CMMI as guides as well as best industry practices. The assessments will consider the FI-Contractor's planning efforts for system, stress, volume, parallel, and UAT phases. PCG's initial planning purposes 3 Test Plan Assessments per project phase; report 1 for system; 1 for parallel and 1 for UAT.

Test Planning Assessment (C.1.d, E.4.b.1)	
	Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the system testing). • Research & Analysis—research and analyze specific aspects of the system testing in order to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ FI-Contractor's test documentation (test plans, test scripts) for ▪ Appropriateness of test methods and standards used ▪ Conformance with project-defined test document standards ▪ Test coverage of appropriate level of requirements for testing ▪ Regression testing approach ▪ Consistency among the test documents ▪ The resources assembled to perform the testing, number of tests required, processes utilized, reporting procedures, documentation generated, and completion criteria ▪ The defect and issue tracking process ▪ The test environment and tools configuration to support efficient and consistent testing • Clarification—seek clarification from key project team members on specific aspects of the system test to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	DSD IDD Test Plan Test Scripts/Cases RTM User documentation
Outputs/Deliverable	DED (work product) Test Plan Assessment Report – System (deliverable) Test Plan Assessment Report – Parallel (deliverable) Test Plan Assessment Report – UAT (deliverable) Monthly Status Report Updated, as applicable (deliverable) Risk Log Update (internal work product)

Test Planning Assessment (C.1.d, E.4.b.1)	
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact IV&V Test Lead Test Analysts DHCS Contract Manager
Applicable Standards	IEEE 829 IEEE 1012 SEI CMMI
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The IV&V Test Lead will review and assess the plans. The Test Analysts will support the IV&V Test Lead. DHCS Contract Manager will review/accept the deliverable

5.2.12. Conduct Quality Assurance Evaluation

Quality Assurance Evaluation (SOW C.1.e, F.4)	
Methods and Criteria	Quality assurance evaluations will be conducted by PCG IV&V for each phase of the EX-MMIS beginning with the assessment of the Quality Management Plan submitted during the planning phase. The findings will provide DHCS management an independent perspective of the efficiency and adequacy of the quality management processes and practices. The evaluations will be completed using PMBOK, ISO 9000:2008, and SEI CMMI as a guide. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the quality assurance process). • Research & Analysis—research and analyze specific aspects of the quality assurance process in order to form an opinion of the efficiency and adequacy of the proposed tool selection, procedures and implementation approach. Activities include: ▪ Initially verify the scope of Quality Management for the EX-MMIS Project is consistent with the contract requirements and DHCS expectations ▪ Evaluate the Quality Management Plan for adherence to defined standards and contract requirements, Assess consistency and

Quality Assurance Evaluation (SOW C.1.e, F.4)	
	adequacy of: ° Identifying and documenting performance baselines ° Defining quality standards and measurements for work products and deliverables ° Establishing performance targets ° Defining and implementing metrics ° Verifying and validating that the Project's work products and deliverables meet defined quality standards ° Methods for identifying and resolving risks and issues regarding work product and deliverable quality ° Procedures to identify, management and track improvement projects to successful resolution ° Reporting ▪ Evaluate materials and automated tools used to support the Quality Management process. ▪ For each report following the initial report: ° Assess progress against previous reports to determine if quality assurance procedures are being followed and risks are being addressed ° Assess the process improvement practices to determine compliance with the QMP and consistency and accuracy of identifying opportunities for improvement, managing implementation and tracking to resolution ° Clarification—seeks clarification from key project team members on specific aspects of the quality assurance process to ensure agreement and concurrence among DHCS, PCG and the project team. ° Document—document the results of discovery, research, analysis and clarification in the form analysis reports for each implementation phase. These reports will contain key findings, observations, risk assessments and recommended risk mitigation strategies. ° Prepare and submit draft report to DHCS Contract Manger for review ° Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Quality Management Plan Metric Plans Quality Assurance Procedures Manual QA Reports
Outputs/Deliverable	DED (work product) Quality Management Evaluation Reports (deliverable) Phase I through IV Quality Management Evaluation Report Updates Monthly Status Report Updates

Quality Assurance Evaluation (SOW C.1.e, F.4)	
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 730 IEEE12207 IEEE 1061 SEI CMMI
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in CMMI and quality processes will conduct the reviews. DHCS Contract Manager will review/accept the deliverable

5.2.13. Conduct Code Review of Transfer System

Code Review of Transfer System (SOW F.4)	
Methods and Criteria	The base code for the EX-MMIS Replacement System will be acquired from another state. PCG believes it is essential to the development phase of the EX-MMIS Project to have a clearly defined baseline and potential risk inherited with the source code acquired. Early detection of risks will be critical for project planning and scheduling. Therefore, PCG purposes to include a source code evaluation for the acquired code. PCG IV&V will evaluate the source code components (source code and source code documentation) for correctness, consistency, completeness, accuracy, readability, reusability and testability. PCG IV&V will use best industry practices to complete this activity. Steps associated with this task: • Complete the DED process with the DHCS • Analyze the source code to verify that the asset is consistent with the purposed domain model and domain architecture • Verify that the source code components comply with standards, references, regulations, policies, physical laws, and business rules • Validate the source code component sequences of states and state changes using logic and data flows coupled with domain expertise, prototyping results, engineering principles, or other basis

Code Review of Transfer System (SOW F.4)	
	• Evaluate the source code components (source code and source code documentation) for correctness, consistency, completeness, accuracy, readability, and testability. The task criteria are: ▪ Correctness ° Assess the appropriateness of coding methods and standards ▪ Consistency ° Verify that all terms and code concepts are documented consistently ° Verify that there is internal consistency between the source code components ▪ Completeness ° Verify that the following elements are in the source code, within the assumptions and constraints of the system: ° Functionality (e.g., algorithms, state/mode definitions, input/output validation, exception handling, reporting and logging) ° Process definition and scheduling ° Hardware, software, and user interface descriptions ° Performance criteria (e.g., timing, sizing, speed, capacity, accuracy, precision, safety, and security) ° Critical configuration data ° System, device, and software control (e.g., initialization, transaction and state monitoring, and self-testing) ▪ Accuracy ° Verify that the documentation is legible, understandable, and unambiguous to the intended audience ▪ Readability ° Verify that the documentation defines all acronyms, mnemonics, abbreviations, terms, and symbols ▪ Testability ° Verify source code components are testable against objective acceptance criteria • Prepare the report • Submit the report • Update the report, as needed
Inputs	DSD IDD Potential need for other design documents such as the Detail Design Document (DDD), Conceptual System Design Document (CSDD), etc. Copy of FI Source Code

Code Review of Transfer System (SOW F.4)	
Outputs/Deliverable	DED (work product) Acquisition Evaluation Report (deliverable) Risk Log Update
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1012
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME) with expertise in System Assessments will review the source code. DHCS will review/accept the deliverable

5.2.14. Conduct Source Code Review

Source Code and Source Code Documentation Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG will evaluate the results of code inspections of system modules to ensure they meet applicable coding standards and requirements, design specifications, and release and reliability growth standards. The application developed source code will be logically sampled and examined for adherence to project coding standards, accepted industry standards, and typical programming best practices. Historically, the software lifecycle has usually focused on development. However, so much of a system's cost is incurred during maintenance and operations (M&O) that maintenance issues have become more important and, arguably, “maintainability” should receive higher priority during development. While the need for maintainability is acknowledged, little is done to define, implement and assure the effective use of practices that would result in more maintainable systems. For the EX-MMIS Project, PCG will employ a maintenance-focused approach to the software code evaluation process. Steps associated with this task: • Complete the DED process with the DHCS • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the source code). • Research & Analysis—research and analyze specific aspects of the

Source Code and Source Code Documentation Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	source code in order to form an opinion of the validity of the design and implementation approach. Components to consider • Verify that software including code reviews are planned and executed as guided by IEEE Std 1028 – 1997 Standard for Software Reviews • Independently evaluate software code for maintainability in the following areas: • Application partitioning and modularity, including abstraction, complexity management, change isolation, cohesion and coupling, and size. • Source code standards and practices, including data and variables, code constructs, code conventions, defensive programming. • Methods and tools, including formal reviews and software tools used to support the use and enforcement of engineering standards. • Consistency - all terms and code concepts are documented consistently. • Completeness – are the elements in the source code within the assumptions and constraints of the system • Testability – is the source code testable against objective acceptance criteria? • Clarification—seeks clarification from key project team members on specific aspects of the source code to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to the DHCS for review • Update report as needed • Submit final report to DHCS Contract Manger for approval
Inputs	DSD IEEE 1028 Applicable Code standards Source Code Source Code Documentation
Outputs/Deliverable	DED (work product) Source Code Evaluation Report (deliverable) Risk Log Update
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment

Source Code and Source Code Documentation Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) FI programmers or programmer managers DHCS staff involved in application code modification
Applicable Standards	IEEE 1012 IEEE 1028
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. Senior IV&V Consultant (SME) with expertise in system assessments will conduct the reviews. DHCS will review/accept the deliverable

5.2.15. Conduct Configuration Management Assessment

Configuration Management Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG will verify that configuration management (CM) is performed in accordance to standards and practices defined in CMMI and the Service Management Framework (identified by the vendor) PCG will evaluate the Configuration Management Plan and implemented practices (development and maintenance and operations (M&O)) for compliance to contract requirements and to applicable standards. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather date (i.e. review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the configuration management process.) • Research & Analysis—research and analyze specific aspects of the system design in order to form an opinion of the validity of the proposed tool selection and implementation approach. Components to consider: ▪ Configuration items are identified and managed in accordance with best practice for all managed components of the EX-MMIS system. ▪ A process for describing the software product functionality, tracking program versions, and managing changes is used ▪ A process for identifying, naming and tracking changes for all Configuration items (CIs) is in place and being used appropriately ▪ The configuration management process is adequate for the development complexity, software and system size, software integrity level, project plans, system environments and user requirements ▪ Validate configured items (CI's) and associated CM records stored in the project repositories are complete, consistent and correct

Configuration Management Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	▪ Verify integrity of the systems configuration is controlled over time; and the status and content of the baselines are known ▪ Validate CM for externally delivered hardware and related software products used inside the project organization are complete, consistent and correct ▪ Validate that internal quality assurance audits the baseline products and internal project CM activities are performed on a regular basis • Clarification—seeks clarification from key project team members on specific aspects of configuration management to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare task report • Submit draft task report to DHCS Contract Manager for review • Update report, as needed • Submit final task report to DHC Contract Manager for approval
Inputs	Configuration Management (CM) Plan CM Procedures Change Control Management Plan Quality Assurance (QA) Plan Project Schedule CM and QA detail Schedules
Outputs/Deliverable	DED (work product) Configuration Management Assessment Report (deliverable) Phase I through IV Configuration Management Assessment Report Updates Monthly Status Report Updates
Project Phase(s)	Stakeholder Requirements Definition- Business Rule Extraction, System Design – for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 828 PMBOK CMMI for Development V1.3

Configuration Management Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Measure of Completion	Deliverable approval
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in CMMI and System Configuration will conduct the reviews for their appropriate section of the development plans and related materials. DHCS Contract Manager will review/accept the deliverable

5.2.16. Conduct Maintenance Planning Evaluation Report

Maintenance Planning Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	The EX-MMIS Replacement System maintenance planning will be evaluated by PCG IV&V from the perspective of key plans and procedures in place prior to each maintenance phase. It is common to expect the same plans for Maintenance and Operations processes as for EX-MMIS to be in place, such as Configuration Management, Release Management, Quality Assurance, Change Management, etc., however M&O represents a different scope of work, priorities and impact indicating the need for different processes. PCG will consider technical processes and supporting documentation for efficient maintenance planning. Steps associated with this task: • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of maintenance planning). • Research & Analysis—research and analyze specific aspects of maintenance planning for each implementation phase, to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ Transition Plan ▪ Operation Plan ▪ Environment Management ▪ Incident and Problem Management ▪ Configuration Management ▪ Change Management ▪ Release Management ▪ Disaster Recovery Plan ▪ Backup and Recovery • Clarification—seeks clarification from key project team members on specific aspects of maintenance planning to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed

Maintenance Planning Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Submit completed report to DHCS Contract Manger for approval
Inputs	Transition Plan Operation Plan Business Continuity and Disaster Recovery Plan Service Management Framework processes (Incident, Problem, Change, Configuration, Release) Backup and Recovery Project Management Plans
Outputs/Deliverable	DED (work product) Phase I through IV Maintenance Planning Evaluation Report (deliverable) Monthly Status Report Updates (deliverable)
Project Phase(s)	Software Installation for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 12207 IEEE 14764 IEEE 1012 SAM Chapter 5355 NIST DHCS Standards
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME) with expertise in disaster recovery and operations will review the input materials. DHCS Contract Manager will review/accept the deliverable

5.2.17. Conduct Initial Interface Analysis

Initial Interface Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	

Methods and Criteria	The SR System will have a large number of interfaces. Interfaces will be added, modified and removed as the DDI project moves through each phase. PCG IV&V purposes to provide DHCS with several interface analyses throughout the system development process. The assessments will be conducted for each phase of the project and will build on prior findings and risks. In addition, as the development of interfaces progresses, applicable facets will be included in our assessments.
	PCG will complete these assessments using applicable industry standards and best industry practices.
	The initial interface assessments will be conducted using applicable industry standards as guides and best industry practices. Each initial interface assessment will consider early interface developments efforts required for a successful project.
	Steps associated with this task:
	• Complete the DED process with the DHCS Contract Manager
	• Discovery – gather data (i.e. Review project documentation, work products, deliverables, and interview key project team members to gain a thorough understanding of the state of EX-MMIS interfaces at a point in time.)
	• Research & Analysis – Research and analyze specific aspects of the interfaces including both management processes and the current state of the schedule, technical concerns, communication, and reporting in order to form an opinion of the project's progress relative to interfaces. Components to consider:
	  ▪ Correctness - Validate the external and internal system and software interface requirements and feasibility.
	  ▪ Consistency - Verify that the interface descriptions are consistent between/among the requirement specifications.
	  ▪ Completeness - Verify that each interface is described and includes data format, mapping and translation rules and performance criteria.
	  ▪ Accuracy - Verify that each interface provides information that accurately represents the requirements and business needs.
	  ▪ Testability - Verify that there are objective acceptance criteria for validating the interface requirements.
	• Clarification – Seek clarification from key project team members on specific aspects of initial results from our research and analysis to ensure a full and accurate understanding of the state of EX-MMIS interfaces.
	• Document – Document the results of discovery, research, analysis, and clarification in the form of a risk. This risk statement will contain a risk description, risk exposure rating, and possible mitigation strategies.
	• Prepare draft report
	• Submit report to DHCS Contract Manager for review
	• Update report, as needed

Initial Interface Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Submit complete report to DHCS Contract Manager for approval
Inputs	GSD DSD IDD RTM Phase specific IDD work products Data Conversion and Cleanup Plan Phase specific Data Conversion Work Products Implementation Plan Requirements Specifications Document Project Management Plans Architecture Plan Software Development Approach Project Schedule Architecture Plan
Outputs/Deliverable	DED (work product) Interface Analysis Report (deliverable) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME)DHCS Contract Manager
Applicable Standards	IEEE 830 IEEE 1233
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. Senior IV&V Consultant (SME) with expertise in architecture, data conversion and interfaces to EX-MMIS will conduct the review for their appropriate section of the requirements and IDD. DHCS Contract Manager will review/accept the deliverable

5.2.18. Conduct Technical Interface Analysis

Technical Interface Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	As stated previously, interfaces will be a large component of the SR System. PCG purposes to provide DHCS with the technical IV&V support needed to mitigate risk related to interfaces by conducting several interface assessments during the EX-MMIS development phase. The interim assessments will be a conducted as a 'point in time' and PCG will complete these assessments using applicable industry standards and best industry practices. Steps associated with this task: • Discovery – gather data (Review project documentation, work products, deliverables, and interview key project team members to gain a thorough understanding of the state of EX-MMIS interfaces at this point in time). • Research & Analysis – Research and analyze specific aspects of the interfaces including both management processes and the current state of the schedule, technical concerns, test plan, implementation plan, communication, and reporting in order to form an opinion of the project's progress relative to interfaces. • Additional components to consider, following the initial assessment: ▪ Consistency among the various specification documents ▪ Verify that interfaces are designed for effective configuration management applicable ▪ Testing method/approach, to consider converted data ▪ Interface issue resolution process ▪ FI-Contractor's implementation of approved plans and required standards/policy • Clarification – Seek clarification from key project team members on specific aspects of initial results from our research and analysis to ensure a full and accurate understanding of the state of EX-MMIS interfaces. • Document – Document the results of discovery, research, analysis, and clarification in the form of a risk. This risk statement will contain a risk description, risk exposure rating, and possible mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	GSD DSD IDD Interface Design work products Data Conversion and Cleanup Plan and follow-on work products Implementation Plan Project Management Plans

Technical Interface Analysis (SOW C.1.b, C.1.c, C.1.g, F.4)	
	SDA System Architecture Design
Outputs/Deliverable	Technical Interface Assessment Report Update (deliverable) Updated Monthly Status Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Engagement Manager / Coordinator Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1028 IEEE 1012 IEEE 12207
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Engagement Manager/Coordinator will coordinate efforts with interface partners as appropriate The Senior IV&V Consultant (SME) with expertise in Architecture and interfaces to EX-MMIS will conduct the review for their appropriate section of the RFP and IDD DHCS Contract Manager will review/accept the deliverable

5.2.19. Conduct architectural design assessment

Architectural Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	The EX-MMIS Replacement System is a large complex system which will be implemented over four phases. PCG proposes a separate assessment of the Architecture plan and design, because they are essential components for ensuring the integrity of the EX-MMIS solution across the multiple implementation phases, and the consistency with which it meets DHCS requirements. This will allow for a more comprehensive assessment as well as provide timely reporting to DHCS to support management decisions. The assessment will be completed by skilled technical consultants using applicable industry standards as guides and best industry practices. The assessment will include the architecture plan as well as the individual phase architecture designs.

Architectural Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	Steps associated with this task are: • Complete the DED process • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the architecture design). • Research & Analysis—research and analyze specific aspects of the architecture plan development in order to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ Architecture Plan compliance with MITA and other architectural standards as determined by DHCS ▪ Architecture Plan "Fit for Purpose," -- will the proposed architecture plan provide required guidance, principles and models to ensure on-going system engineering produces a solution that meets contract requirements, enhanced Federal Funding requirements and complies with DHCS long term objectives? ▪ For the Technical Architecture Design (TAD) for each implementation phase, components to consider, for feasibility, include the distribution of data and processes in the proposed architecture, • Consideration for the following will also be included in the TAD assessments: ▪ Feasibility – Will the proposed technical architecture work and will the requirements be satisfied by the defined technologies, methods, and algorithms defined for the project? ▪ Capacity – Will the proposed production configuration have the capacity to handle the workload? ▪ Performance – Will the proposed production configuration meet the performance criteria? ▪ Scalability – Will the proposed technical architecture be able to scale up to meet future workload and performance criteria? ▪ Risk – Can all of these objectives be met within a reasonable risk tolerance? • Clarification—seeks clarification from key project team members on specific aspects of the architecture design to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare the report • Submit the draft report to the DHCS Contract Manager • Update the report, as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Architecture Plan Technical Architecture Design

Architectural Design Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	EX-MMIS RFP & SOW GSD RTM
Outputs/Deliverable	DED (work product) Architecture Plan Assessment Report (deliverable) Phase I through IV Technical Architecture Design (TAD) Assessment Reports (deliverable) Monthly Status Report Updates
Project Phase(s)	System Architecture Design for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 42010 California Enterprise Architecture Framework (CEAF)
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in Architecture will conduct the reviews. DHCS Contract Manager will review/accept the deliverable

5.2.20. Conduct Security Assessment

Security Assessment (additional service)	
Methods and Criteria	To be fully compliant with the DHCS Security policy and federal security and privacy requirements as defined in the NIST 800-53 Recommended Security Controls for Federal Information Systems and HIPAA, it is essential to have multiple audit checkpoints throughout the project. To avoid rework and potential security vulnerabilities, it will be necessary to ensure the EX-MMIS maintains conformance throughout the development lifecycle for all implementation phases as ONC updates the standards through to final adoption (estimated to be required by 2014). We propose the following services as necessary to meet applicable security requirements and standards. A review and assessment report of the vendor's proposed solution, data conversion approach, development methods and practices as documented in the Architecture Plan, SDLC plans, and Security and Confidentiality plans. This report will provide a gap analysis early on in

Security Assessment (additional service)	
	the project to identify potential areas where further development may be needed that may not have been reflected in the vendor's SOW. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • During the planning for each implementation phase, review the security requirements for EX-MMIS and assess The Replacement System functional and technical requirements for compliance with DHCS security requirements. • Analyze the system concept from a security perspective, and ensure that potential security risks with respect to confidentiality (disclosure of sensitive information/data), integrity (modification of information/data), availability (withholding of information or services), and accountability (attributing actions to an individual/process) have been identified. Include an assessment of the sensitivity of the information/data to be processed. • Analyze security risks introduced by the system itself, integration with the Legacy system as well as those associated with the external environments with which the system interfaces. The assessment will include the security risks associated with the system design that facilitates remote wired and wireless EX-MMIS access. • Prepare the report • Submit draft report to DHCS Contract Manager for review • Update the report, as needed • Submit completed report to DHCS Contract Manager for approval
Inputs	NIST 800-53 Contract requirements Security and Confidentiality Plans DHCS Security Policy HIPAA State Security Standards
Outputs/Deliverable	DED (work product) Phase I through IV Security Assessment Reports (deliverable) Monthly Status Report Updates
Project Phase(s)	Stakeholder Requirements Definition Business Rule Extraction for all Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager

Security Assessment (additional service)	
Applicable Standards	Section 13410(d) of the HITECH Act, which became effective on February 18, 2009, revised section 1176(a) of the Social Security Act (the Act) NIST Standards DHCS Security Standards & Policy MEDS & SSA Security Standards SAM Chapter 5335.1 DTS Security Requirements FIPS Standards
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME) with expertise in Security, will conduct the reviews DHCS Contract Manager will review/accept the deliverable

5.2.21. Conduct Data Conversion Planning Assessment

Data Conversion Planning Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG, with its experience on large IT developments, purposes a conversion planning assessment to support a successful SR System. The assessment focus on the overall strategy, planning and approach as well as the phase specific conversion and cleanup activities. Conversion activities will be monitored until completed. Findings from the assessments will be provided in formal reports. Additional findings from the on-going activities will be provided in the IV&V Monthly Status Report. Steps associated with this task: • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the system's conversion). • Research & Analysis—research and analyze specific aspects of data conversion and cleanup in order to form an opinion of the validity of the proposed tool selection, design and implementation approach. Components to consider: ▪ Conversion Strategy – Scope, approach, schedule, constraints, assumptions, change control and testing. ▪ Conversion Preparation – Identified prerequisites, backup strategy, restore processes, and acceptance criteria, training. ▪ Conversion Specifications – Translation rules, field processing, data mapping, Data structures and dictionary. ▪ Conversion Timeline - The schedule of activities to complete conversion at implementation. ▪ Data Cleanup – Strategy and defined methods, cleanup schedule, redaction, cleansing, masking, verification methods and results, and reporting

Data Conversion Planning Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Clarification—seeks clarification from key project team members on specific aspects of the system conversion to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Master Data Conversion and Cleanup Plan Phase Specific Conversion artifacts Data readiness, clean-up practices GSD DSD IDD Database models (LDM, PDM, and ERD) Implementation Plan Phase Specific Interface Plans (IDD) Project Management Plans SDA SDN's CR's
Outputs/Deliverable	DED (work product) Conversion Assessment Report (deliverable) Conversion Assessment Report Updates (as requested/needed) Monthly Status Report Updated
Project Phase(s)	Pre-kickoff Planning Phase for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 12207
Measure of Completion	Deliverables accepted

Data Conversion Planning Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. Senior IV&V Consultant (SME) with expertise in data conversion will conduct the reviews. DHCS Contract Manager will review/accept the deliverable

5.2.22. Conduct Performance Monitoring

Performance Monitoring (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG IV&V will conduct a review of the FI's system and network performance monitoring output to evaluate actual performance against expected performance as documented in the SLA or as indicated by DHCS and user experience. System performance is a critical measure for a successful system and for some stakeholders the most significant measure. Performance monitoring begins early in the SDLC with defining the requirements followed by architecture design, database design and testing The EX-MMIS Replacement System will be processing high volumes of transactions simultaneously with other critical system processes. It will be essential to a have system operating consistently and efficiently. PCG will use vendors' performance reports, applicable industry standards and best industry practices to complete the activity. The findings will be provided in a task report or the IV&V Monthly Status Report as deemed appropriate. Steps associated with the activity: • Complete the DED process • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the system performance requirements and design). • Research & Analysis—research and analyze specific aspects of the system design in order to form an opinion of the validity of the FI's proposed tool selection, design and implementation approach. Components to consider: ▪ Performance requirements are clearly defined and testable ▪ Test plans produce valid and appropriate results ▪ Test environments and test strategy is sufficient to emulate production environments ▪ Review of database transaction rates to determine the need to reorganize or re-index the database ▪ Review of CPU performance monitoring reports for load balancing ▪ Review and evaluation of direct access storage utilization ▪ Review of network traffic reports to ensure adequate bandwidth ▪ Critical outputs of a system (e.g., scheduled frequency, expected range of values, scheduled system reports, reports of events) • Clarifications—seek clarification from key project team members on specific aspects of the system design to ensure agreement and concurrence among DHCS, PCG and the project team.

Performance Monitoring (SOW C.1.b, C.1.c, C.1.g, F.4)	
	• Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Requirement specifications Design specifications Available performance monitoring output FI's Performance Test Plans FI's Performance Test Results
Outputs/Deliverable	DED, if needed, (work product) Phase I through IV Performance Assessment Reports, (deliverable) Monthly Status Report Updates
Project Phase(s)	System Implementation for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME)
Applicable Standards	IEEE 1012
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in system performance will conduct the reviews.

5.2.23. Conduct Test Evaluation Report

Test Evaluation (SOW C.1d, E.4.b.2)	
Methods and Criteria	PCG IV&V will provide DHCS an independent evaluation of the CA-MMS Replacement System testing process. PCG will evaluate vendor testing to determine if the software satisfies the criteria established in the test plan and Requirements Traceability Matrix and if the software is of sufficient quality to begin the next level of testing. Test evaluations will be made for each major release and project phase and will include each planned test phase (i.e. system, stress, volume, parallel, acceptance, and regression). Throughout testing, PCG will monitor the testing activities and defect tracking process and recommend

Test Evaluation (SOW C.1d, E.4.b.2)	
	improvements to the overall testing approach. The monitoring and review will focus on the accuracy, issues and risks to the Project. Steps associated with this task: • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the testing process). • Research & Analysis—research and analyze specific aspects of the system design in order to form an opinion of the validity of the implementation approach. PCG may include test witnessing which will involve monitoring the fidelity of test execution to the specified test procedures and witnessing the recording of the test results. Components to consider: ▪ Validate that the test results trace to test criteria established by the test traceability in the test planning documents ▪ Defect tracking ▪ Issue resolution ▪ Test exit criteria is satisfied ▪ Effective use of a configuration management process ▪ Compliance with applicable standards, policies and/or procedures • Clarification—seeks clarification from key project team members on specific aspects of the testing to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Test Plan Test scripts/cases Defect reports Issue reports Test Results
Outputs/Deliverable	DED (work product) Test Evaluation Report - System (deliverable) Test Evaluation Report – Parallel (deliverable) Test Evaluation Report – UAT (deliverable) Monthly Status Report Update, as applicable (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment

Test Evaluation (SOW C.1d, E.4.b.2)	
Resources	Project Manager/IV&V Lead Contact IV&V Test Lead Test Analysts DHCS Contract Manager
Applicable Standards	IEEE 829 IEEE 1012 SEI CMMI
Measure of Completion	Deliverable acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The IV&V Test Lead will conduct the review of the test results The Test Analysts will support the IV&V Test Lead. DHCS Contract Manager will review/accept the deliverable

5.2.24. Conduct Implementation Planning Assessment

Implementation Planning Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	PCG IV&V has the experience and expertise to provide DHCS with the support needed to determine system overall readiness for deployment. Aside from design, code, testing, etc. plans and processes, the project must have adequate plans and processes in place for implementing the system into production. PCG will review and evaluate the implementation planning activities for the EX-MMIS Replacement System to ensure the implementation is properly planned and considers all necessary factors for success. Initial findings from this assessment will be provided to the State via an Implementation Assessment Report. As part of this process PCG will continue to monitor implementation activities and report findings in the Monthly Status Report. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the implementation). • Research & Analysis—research and analyze specific aspects of the implementation in order to form an opinion of the validity of the proposed plan, processes and implementation approach. Components to consider: ▪ Implementation Plan completeness and comprehension ▪ Time frame viability ▪ Environment requirements ▪ Entrance criteria fulfillment ▪ Conversion coordination ▪ Milestone requirements

Implementation Planning Assessment (SOW C.1.b, C.1.c, C.1.g, F.4)	
	▪ Resource requirements ▪ Success metrics • Clarification—seeks clarification from key project team members on specific aspects of the implementation to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Project schedule Implementation Plan Operational Readiness work products
Outputs/Deliverable	DED (work product) Phase I through IV Implementation Assessment Reports (deliverable) Monthly Status Report Updates
Project Phase(s)	Software Installation for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 12207 IEEE 1012
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in System Development will conduct the reviews of the appropriate sections of the plans. DHCS Contract Manager will review/accept the deliverable

5.2.25. Conduct Deployment Evaluation

Deployment Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
Methods and Criteria	The deployment process for the EX-MMIS Replacement System will be evaluated by PCG IV&V. PCG will conduct a review for each EX-MMIS Implementation phase and prepare a report to provide the findings. Subsequently, PCG IV&V will continue to monitor the deployment activities and provide updates in the monthly status report. Steps associated with this task: • Discovery—gather data (review project documentation, work products, deliverables and interview key project team members to gain a thorough understanding of the deployment process). • Research & Analysis—research and analyze specific aspects of the system deployment in order to form an opinion of the validity of the proposed process and implementation approach. Components to consider: ▪ A documented process to ensure all configured items are up-to-date and under configuration management ▪ Process for state approval ▪ Process for deployment notification and readiness of support teams such as State Data Center Services and Network Services WAN support teams and interface partners ▪ Documentation in place to support the following ° Release Installation Procedures including a description of how the production environment shall be upgraded ° Post Installation Verification Test Plan ensuring that the software was successfully installed and shall operate ° Release Back-Out Plan detailing the strategies and tasks required to restore the system to the prior release in the case of release verification failure • Clarification—seeks clarification from key project team members on specific aspects of the deployment process to ensure agreement and concurrence among DHCS, PCG and the project team. • Document—document the results of discovery, research, analysis and clarification in the form of an analysis report. This report will contain key findings, observations, risk assessments and recommended risk mitigation strategies. • Prepare and submit draft report to DHCS Contract Manger for review • Update report as needed • Submit completed report to DHCS Contract Manger for approval
Inputs	Implementation Plan Deployment Plan Release Management Plan Configuration Management Plan Change Request and Change Control records Release procedures

Deployment Evaluation (SOW C.1.b, C.1.c, C.1.g, F.4)	
	Project schedule Operational Readiness Plan
Outputs/Deliverable	DED (work product) Phase I through IV Deployment Evaluation Report (deliverable) Monthly Status Report Updates
Project Phase(s)	Software Installation for all four Phases: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	IEEE 1012 IEEE 12207
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The Senior IV&V Consultant (SME), with expertise in System Development and/or MMIS will conduct the reviews. DHCS Contract Manager will review/accept the deliverable

5.2.26. Conduct CMS Certification Assessment

CMS Certification Assessment (SOW C.1)	
Methods and Criteria	Using the CMS certification toolkit Checklists, and the FIs CMS Certification Plan PCG team will validate, the progress toward meeting CMS Certification requirements for each phase of the EX-MMIS. This will give the state an early independent verification and/or identification of opportunities for improvement if indicated. Each milestone of the multiple phases, the PCG IV&V team will review the checklists and record the vendor's progress. Steps associated with this task: • Review of the current status of the MITA State Self-Assessment (SS-A) • Review the CMS Certification Readiness Plan and verify all certification requirements are adequately addressed • Compare goals of current MITA SS-A to the EX-MMIS phase design work products and document gaps and risks • Validate the progress of each phase of the EX-MMIS as defined in the Certification Readiness Plan and document the accomplishments

CMS Certification Assessment (SOW C.1)	
	and shortfalls for each • Prepare the report • Submit draft report to DHCS Contract Manager for review • Update the report, as needed • Submit final report to DHCS Contract Manager for approval
Inputs	CMS MITA Toolkit EX-MMIS MITA SS-A Vendor CMS Certification Plan EX-MMIS RFP & SOW Architecture Plan Technical Architecture Design GSD DSD IDD
Outputs/Deliverable	Phase I through IV CMS Certification Assessment Reports (deliverable) Monthly Status Report Updates
Project Phase(s)	Software Installation for each EX-MMIS Phase following final UAT: • Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact Senior IV&V Consultant (SME) DHCS Contract Manager
Applicable Standards	CMS MITA Toolkit (Current version)
Measure of Completion	Deliverable Acceptance
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee this activity. The Senior IV&V Consultant (SME) with MITA expertise will review the inputs. DHCS Contract Manager will review/accept the deliverable

5.3. Activity Three – Lessons Learned and Closeout of Phase

5.3.1. Conduct IV&V Lessons Learned

IV&V Lessons Learned (SOW E.7)	
Methods and Criteria	PCG will provide lessons learned throughout the term of the engagement. Lessons learned from development practices and processes will be collected and reported on a timely basis. This will allow DHCS to implement changes if desired. Steps to complete this activity: • Complete the DED process with the DHCS Contract Manager. • Collect lessons learned as outputs from all IV&V tasks • Maintain a lessons learned database for the duration of the contract • Prepare and submit the report to DHCS Chief Deputy Director of Medical Programs (Project Sponsor) or their designee, the California Technology Agency), and the EX-MMIS Deputy Project Director (Contracting Officer) or their designee
Inputs	Prior IV&V evaluation/risk reports Risk Reports
Outputs/Deliverable	Lesson Learned DED (work product) Lesson Learned Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead IV&V Technical Lead Senior IV&V Consultants – SMEs IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 1012
Measure of Completion	Completion of contract
Roles and Responsibilities	PCG Project Manager/IV&V Technical Lead Contact will plan and oversee the task. All Senior IV&V Consultants – SMEs will provide lessons learned from their activities. The IV&V Test Lead will provide lessons learned from their activities. DHCS Contract Manager will review/accept the deliverable

5.3.2. Conduct IV&V Final Report Generation

IV&V Final Report Generation (SOW E.7)	
Methods and Criteria	PCG IV&V will develop and submit a Final Report to the DHCS Contract Manager. The report, at a minimum will include, project successes, project activities, accomplishments, lessons learned summary and suggestions for improving managerial processes and/or technical performance through M&O. The report will be prepared using IEEE Std. 1012. Steps associated with this task: • Complete the DED process with the DHCS Contract Manager • Gather essential IV&V data • Prepare report • Submit the Final Report • Update the Final Report, if needed
Inputs	IV&V lessons learned log IV&V Monthly Status Reports IV&V Schedule IV&V Plan
Outputs/Deliverable	DED (work product) Final Report (deliverable) Risk Log Update
Project Phase(s)	Final Phase Software Acceptance
Resources	Project Manager/IV&V Lead Contact Engagement Manager / Coordinator Senior IV&V Consultants – SMEs IV&V Test Lead DHCS Contract Manager
Applicable Standards	IEEE 1012
Measure of Completion	Deliverables accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead will plan and oversee the task. The IV&V Technical Lead will review content for thoroughness and accuracy. All Senior IV&V Consultants – SMEs will provide summaries from their activities. The IV&V Test Lead will provide summaries from their activities DHCS Contract Manager will review/accept the deliverable

5.4. Activity Four – IV&V Testing

The IV&V testing tasks and activities discussed below are for IV&V Independent testing for each of the four replacement phases:

- Phase I- Pharmacy Benefit Management and Drug Rebate
- Phase II- Drug Authorizations
- Phase III- Medical Authorizations
- Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment

5.4.1. Develop IV&V Test Plan and Schedule

Develop IV&V Test Plan and Schedule (NTP 5.3.8.4)	
Methods and Criteria	The PCG will conduct IV&V testing to support DHCS in evaluating the system's overall completeness, adequacy and conformance to the approved requirements. Independent Test activities will be planned and follow a standard project management approach through completion. Loosely stated, we will assess (initiate), plan, execute, control, and then close the Independent Test activities. An Independent Test project plan will be created as well as a detailed work breakdown structure of all tasks, milestones, dependencies, duration, and other normal project management activities. Additionally, the test plan for Independent Test will describe the program overview, approach to independent testing, scope, entry/exit criteria, measurements, schedule, completion criteria, and other planning components. Updates to this project plan will be made based on changes to the overall program. A test plan for the replacement project will be created for each of the four phases. Step associated with this activity: • Complete the DED process with the EX-MMIS PCG Project Manager/IV&V Lead • Plan IV&V testing to validate that the software correctly implements system and software requirements in an operational environment • Plan tracing of IV&V test requirements to test cases/scripts and execution results • Plan documentation of test tasks and results • Prepare the IV&V Test Plan • Submit the IV&V Test Plan to EX-MMIS PCG Project Manager/IV&V Lead • Update the plan, as needed • Submit the final IV&V Test Plan to EX-MMIS PCG Project Manager/IV&V Lead
Inputs	Replacement Systems Independent Test requirements Replacement System Design Known Replacement System defects

Develop IV&V Test Plan and Schedule (NTP 5.3.8.4)	
	A Replacement architecture Individual Replacement System requirements
Outputs/Deliverable	DED (work product) Independent Test project plan documented and approved (work product) Independent Replacement System Test Plan documented and approved (deliverable) Updated Monthly Status Report (deliverable)
Project Phase	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	IV&V Team Lead Test Lead Test Analysts EX-MMIS PCG Project Manager/IV&V Lead
Applicable Standards	IEEE 829 SEI CMMI PMBOK
Measure of Completion	Deliverable accepted
Roles and Responsibilities	PCG IV&V Team Lead will oversee the task. The Test Lead will develop the test plan and schedule with the input and support of the Test Analysts. EX-MMIS PCG Project Manager/IV&V Lead will review/accept the deliverable

5.4.2. Complete IV&V Test Design

Complete IV&V Test Design (NTP 5.3.8.4)	
Methods and Criteria	PCG will complete the design activities required to be completed for a successful IV&V testing. Test design is defined by IEEE 829 as documentation specifying the details of the test approach for a software feature or combination of software features and identifying the associated tests (commonly including the organization of the tests into groups). In addition to designing the details of which functions need to be tested together as well as the sequence, PCG IV&V test group will confirm the test environments, test data needed and other supporting activities required for a well-planned testing approach.

Complete IV&V Test Design (NTP 5.3.8.4)	
	Steps associated with this task. • All facilities, hardware, software, tools and utilities, data, and security required to support the IV&V testing activities will be installed and tested for readiness prior to the execution phase, and for the duration of EX-MMIS Phase Testing. • Assess the testing infrastructure to ensure that it is sufficient to support Independent Test concurrently with regularly planned testing. We will work with the State and the vendor to make this determination. We will also run independent tests once the test environment has been established to validate that it has been installed according to specification and can operate as required to support the testing efforts. • Ensure the anomaly management process is in place. All anomalies identified during IV&V testing will be documented in detail in an anomaly report log. Each will also be associated to the test case(s)/script(s) that generated the defect. • Translate business requirements into testable functions, as needed • Determine the grouping of functions to be tested and the sequence to ensure complete testing. • Test data will be established to support execution of the planned test cases/scripts. We will analyze the best approach for the EX-MMIS systems to develop the required data and to create the necessary test beds. In all likelihood, test data will be created via two very common methods; 1) use copy of actual production data (encryption may be necessary) or 2) create the test data to support the specific tests and requirements. PCG will work with State staff to determining exactly what types of test data will be required and also provide 'hands-on training' on defining test data, as appropriate. Additional test data will be created during actual testing as required. The data created will support the balance of testing required during transition. The data will serve as the base test bed for future UAT efforts. • Create a Traceability Matrix and use it to validate planned test coverage and ensure testing priorities have been achieved. A test traceability matrix provides the ability to identify related requirements, business rules, test scenarios, test conditions, and test cases/scripts. The tool supports the recording of all required elements and provides the facility for clearly showing/mapping requirements and test cases/scripts planned for testing. The mapping will provide proof that test cases/scripts have been created for documented requirements. • Establish the metrics that will be used for IV&V testing
Inputs	Replacement Systems Detailed Requirements Applicable security related environment requirements Business process flows Replacement System Design Current Defect Management Process Known Replacement System Defects

Complete IV&V Test Design (NTP 5.3.8.4)	
	Replacement System Architecture Existing Test Cases/scripts
Outputs/Deliverable	Anomaly Management Process (internal IV&V process) Test Data created and ready (work product), Traceability Matrix (work product) Update monthly status report – (deliverable)
Project Phase	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	IV&V Team Lead Test Lead Test Analysts EX-MMIS PCG Project Manager/IV&V Lead
Applicable Standards	IEEE 1012 IEEE 829
Measure of Completion	Deliverable accepted
Roles and Responsibilities	PCG IV&V Team Lead will oversee the task. The Test Lead will develop the test design. Test Analysts will prepare test materials. EX-MMIS PCG Project Manager/IV&V Lead will review/accept the deliverable

5.4.3. Develop IV&V Test Scripts /Cases

Develop IV&V test cases/ scripts (additional service)	
Methods and Criteria	The IV&V test cases/scripts used by the PCG test team will be derived from two sources; 1) test team will create them, and 2) a percentage, selected by random selection, of vendor developed test cases/scripts PCG will use the requirements elicited for each EX-MMIS project to create a set of independent test cases/scripts that will be executed during each planned test cycle for each planned EX-MMIS. The test cases/scripts created will amount to approximately 2% to 3% of the projected total. We will also randomly select up to 3% of the test cases/scripts prepared by the State vendor for a given EX-MMIS project to examine, execute, and validate that they are viable and that they tie to the documented requirements. PCG will work with the ACS Test Team during this process to ensure that the IV&V test cases/scripts meet the business objectives in addition to PCG providing 'hands-on training' for developing test cases/scripts.

Develop IV&V test cases/ scripts (additional service)	
	All documented test cases/scripts will be categorized and stored at a location designated by the State for re-use later. We will evaluate any existing test tools for use during IV&V testing. All documented test cases/scripts will be categorized and stored at a location designated by the State for re-use later. We will evaluate any existing test tools for use during Independent testing and may elect, with agreement from the State, to rely on our small business partner for tools that will enhance our ability to manage and deliver testing. PCG will use a standardized test case format and customize it to meet the needs of the EX-MMIS. This format has been used successfully on many previous testing engagements and details the step-by-step actions required to execute each test case/script and the expected results. It also indicates who executed the test cases/scripts and who signed off on its final state. Test cases/scripts will be stored in a common library (repository) with standard, naming conventions that will be determined, with the agreement of the State, prior to starting test case/script documentation. The test cases/scripts will include references to the test data required for the test and its location. The test cases/scripts repository will be used as a place to store and manage test cases/scripts and will have easy identification of test cases/scripts to be used and/or modified for reuse in subsequent test efforts. Steps to complete this task: • Complete the DED process with the DHCS Contract Manager • Translate the business requirements into manual test cases/scripts • Develop test cases/scripts for IV&V testing • Continue tracing required by the test plan. • Verify that the test cases/scripts conform to project-defined test document purpose, format, and content • Validate the test cases/scripts meet the criteria of the test design • Prepare the test case/scripts document • Submit the document for approval by DHCS Contract Manager • Update and finalize the test case/scripts documented, as needed • Populate test case/scripts repository with approved test cases/scripts
Inputs	Detailed requirements for each planned project EX-MMIS system design Known EX-MMIS defects Existing test cases/scripts User documentation Requirement Traceability Matrix (RTM) IV&V test design outputs Existing EX-MMIS test tools
Outputs/Deliverable	IV&V test cases/ scripts (deliverable) IV&V test case/script repository (work product)

Develop IV&V test cases/ scripts (additional service)	
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact IV&V Test Lead Test Analysts DHCS Contract Manager
Applicable Standards	IEEE 829 IEEE 1012 IEEE 830 IEEE 1233
Measure of Completion	IV&V test scripts/cases accepted
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The IV&V Test Lead will define the test scenarios All Test Analysts will develop test scripts DHCS Contract Manager will review/accept the deliverable

5.4.4. Execute IV&V test scripts/cases

Execute IV&V test cases/scripts (additional service)	
Methods and Criteria	PCG will start executing IV&V test cases/scripts after the IV&V test design activities are complete and DHCS has approved the test cases/scripts. PCG will follow the methodology discussed in previous section of this document to plan, execute, and complete independent testing. All planned test cases/scripts will be executed at least once. Subsequent re-testing will be the result of defects found. State testers, if available, will have the opportunity to participate in IV&V testing to provide 'hands-on training' for preparing them for future testing tasks. As the test cases/scripts are executed, the results will be captured, documented, tracked. They will also be made readily available to the State for review and discussion. All resulting defects will be evaluated for severity and priority and scheduled within the "fix" cycle. PCG is prepared to execute two cycles of fixes, at a minimum. In order to maintain the independent testing schedule, we will work with the State to evaluate which (if any) are currently available in the EX-MMIS environment and should none be available, work with our partner to meet the testing goals and objectives. Throughout the independent testing cycle, PCG will openly communicate test status and progress via regularly scheduled and ad hoc meetings. We will also conduct periodic walkthroughs on specified tests, upon

Execute IV&V test cases/scripts (additional service)	
	request. The State will also be invited to observe testing. Steps to complete this task: • Perform IV&V testing using the DHCS approved test cases/scripts • Analyze test results to validate that the software satisfies the system requirements • Validate that the test results trace to test criteria established by the test traceability in the test planning documents • Document the results as required by the IV&V test plan • Use the acceptance test results to validate the test acceptance criteria • Document discrepancies between actual and expected test results
Inputs	Test environment established and validated Test data created and ready Requirement Traceability Matrix (RTM) Test cases/scripts developed and documented IV&V test cases/scripts repository Defect Management repository and process Executable code IV&V test plan
Outputs/Deliverable	Test results (work product) Defects logged (work product) Updated Requirement Traceability Matrix (work product) Validated System (work product) Monthly Status Report Updated (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	Project Manager/IV&V Lead Contact IV&V Test Lead Test Analysts
Applicable Standards	IEEE 829 IEEE 1012 IEEE 830 IEEE 1233

Execute IV&V test cases/scripts (additional service)	
Measure of Completion	The independent testing will be deemed complete when all planned test cases/scripts have been executed at least once and as indicated in the Independent Test Plan, defects found have been logged and those that have gained agreement to be fixed have been, the independent test documentation has been updated, and the results of independent testing have been logged.
Roles and Responsibilities	PCG Project Manager/IV&V Lead Contact will oversee the task. The IV&V Test Lead will execute test scripts with the input and support of all Test Analysts.

5.4.5. Prepare IV&V Test Exit Report

Prepare IV&V Test Exit Report (NTP 5.3.8.4)	
Methods and Criteria	Prior to final completion of the IV&V testing, a test exit report will be created and submitted to the State for approval and concurrence that the project has completed satisfactorily. The report will summarize all of the IV&V testing activities and including lessons learned during the process that can be applied to future testing as a mechanism for process improvements. This report will serve to inform the DHCS Management of the status and quality of the completed testing. It will include; purpose, scope, test overview or approach, test steps, final defect counts and status, exit criteria, and a summary of the phase. Further, it will include; entry and exit dates, a summary of the problems found including total, closed, and open, any pertinent metrics derived, conclusions, and open/outstanding issues and action plan for closing problems that may remaining open. In addition, lessons learned, including successes (things done well), opportunities for improving the testing processes, and recommendations for changes to managerial processes and/or technical performance collected throughout IV&V testing will be compiled and documented at the end of IV&V testing. Steps to complete this task: • Complete the DED process with the EX-MMIS PCG Project Manager/IV&V Lead • Summarize in the final report the testing activities, task, and results, including status and disposition of anomalies • Summarize lessons learned, if previously provided, or provide detailed information • Provide an assessment of the overall software quality and provide recommendations • Submit draft Final IV&V Test Exit Report to EX-MMIS PCG Project Manager/IV&V Lead for review • Update the report as needed • Submit Final IV&V Test Exit Report to EX-MMIS PCG Project

Prepare IV&V Test Exit Report (NTP 5.3.8.4)	
	Manager/IV&V Lead for approval
Inputs	Test Results Anomalies Logged Updated Traceability Matrix Validated System Lessons learned Prior test status report
Outputs/Deliverable	DED (work product) Final IV&V Test Exit Report (deliverable)
Project Phase(s)	• Phase I- Pharmacy Benefit Management and Drug Rebate • Phase II- Drug Authorizations • Phase III- Medical Authorizations • Phase IV- Full Replacement, Third Party Liability (TPL) and fully integrated Provider Enrollment
Resources	IV&V Team Lead Test Lead Test Analysts EX-MMIS PCG Project Manager/IV&V Lead
Applicable Standards	IEEE 829 IEEE 1012
Measure of Completion	Final EX-MMIS Final Exit Report accepted
Roles and Responsibilities	PCG IV&V Test Lead will oversee the task. The PCG Test Lead will develop the test report with the input and support of the PCG Test Analysts. EX-MMIS PCG Project Manager/IV&V Lead will review/accept the deliverable

6. IV&V Reporting Requirements

This section defines the purpose, content, format, recipients, and timing of all IV&V reports that will be submitted to the EX-MMIS PCG Project Manager/IV&V Lead.

6.1. Task Reports

Task reports will be prepared, as needed, to report findings, deviations, and errors found in documentation, deliverables, or processes being reviewed. Task reports will include, as applicable:

- A summary of critical and/or global issues found
- A detailed listing of deficiencies, with comments and suggestions for improvement
- Identification of risks, if any
- Identification of issues, if any

6.2. IV&V Activity Summary Reports

On an 'as needed' basis, the Project Manager/ IV&V Lead will report a summary of IV&V activity status via the prescribed DHCS format.

Weekly meetings will be held with the EX-MMIS PCG Project Manager/IV&V Lead to provide a verbal activity summary. These sessions may also discuss IV&V tasks/activities' priority based on the project's current status.

A monthly status report will also be completed, per the SOW. IV&V Monthly Status Reports (MSR) will be submitted to DHCS no later than the 10th work day of the next reporting period, and include:

- Significant activities accomplished during the reporting month
- Significant activities planned for the upcoming month and support needed by way of artifacts or availability of staff from DHCS
- Preliminary findings related to current and ongoing activities
- Identification of risks and issues that will impede completion of current and ongoing activities
- Status of risks and issues tracked by the PCG

A DED for the MSR has been prepared and submitted to DHCS. The DED provides the level of content and format for the report.

6.3. IV&V Final Report

The IV&V Final Report will be produced as part of project closeout activities for the EX-MMIS. The Final Report will summarize and consolidate the results of the IV&V issues, risks, tasks, and recommendations and a compilation of lessons learned from the project assessments as related to goals and objectives, schedules, budget variances, risks and mitigation efforts. The report will also include recommendations for ongoing system maintenance and operations management practices and processes.

A DED will be prepared and submitted to DHCS. The DED will provide the level of content and format for the report. The DED will be submitted for approval prior to submitting the final report.

7. IV&V Administrative Requirements

This section describes the anomaly resolution and reporting, task iteration policy, deviation policy, control procedures, and standards, practices, and conventions.

7.1. Task Iteration Policy

The products that are input to the IV&V effort are often changed as (for example) requirements change, approaches change, or issues are resolved. When changes are made, IV&V tasks are iterated by repeating previous tasks or initiating new ones. PCG will assess each change, consider the criticality, cost, schedule, and quality impact, and determine if the IV&V task should be repeated or if a new task is required.

7.2. Deviation Policy

Deviations from this IV&V Plan will be documented on a standard form with the following information: task identification, deviation rationale, and effect on quality of product or process being reviewed. Deviations will be initiated under direction of the PCG Project Manager/IV&V Lead, and in agreement with the DHCS.

Deviations that are expected to occur more than once and have a significant effect on remaining activities will require an update to the appropriate sections of the IV&V Plan.

7.3. Control Procedures

PCG will log all deliverables identified in the IV&V Plan within PCG's deliverable tracking system. PCG will maintain an electronic copy of each deliverable in a secured network environment that is accessible by the appropriate IV&V staff. The secured network environment will be maintained using industry standard backup and restore capabilities. The IV&V team will also utilize version control to ensure an audit trail exists.

7.4. Standards Practices and Conventions

Section 4.3.2Equipment/Tools and Section 4.5, Tools, Techniques, and Methods, define the industry standards and practices that PCG will use to provide IV&V services.

8. IV&V Documentation Requirements

This section describes the documentation that will be prepared.

In addition, this section describes how each document will be created, updated, and stored, and who will be responsible for overall document maintenance.

8.1. IV&V Deliverable Test Documentation

PCG IV&V will prepare test documentation prepared using IEEE Standard 829 as a guide. The following test documentation will be prepared as defined in Section 5.

8.1.1. IV&V Test Plan Assessment Report

PCG IV&V will assess the FI-Contractor's testing approach and processes and provide the findings in a written report. The IV&V Test Plan Assessment Report for the Replacement Projects, at a minimum, will provide:

- Appropriateness of test methods and standards used
- Conformance with project-defined test document standards and SOW
- Test coverage of appropriate level of requirements for testing
- Regression testing approach
- Consistency among the test documents

In addition, a DED will be provided for approval by the DHCS prior to submitting the report.

8.1.2. IV&V Replacement Test Evaluation Report

IV&V will prepare and submit to DHCS a report at the end of the FI-Contractor's testing activities. The report will include the findings of the testing process, in addition to IV&V's recommendation for proceeding to the next phase of the project and the basis for the recommendation.

A DED will be provided for approval by the DHCS prior to submitting the report.

8.1.3. IV&V Replacement System Test Plan

An Independent Test project plan will be created as well as a detailed work breakdown structure of all tasks, milestones, dependencies, duration, and other normal project management activities. Additionally, the test plan for Independent Test will describe the program overview, approach to independent testing, scope, entry/exit criteria, measurements, schedule, completion criteria, and other planning components.

A DED will be provided for approval by the EX-MMIS PCG Project Manager/IV&V Lead prior to submitting the test plan.

8.1.4. IV&V Test Cases/Scripts

The IV&V test cases/scripts used for the replacement systems will be submitted to DHCS. The test Cases/scripts will include test cases/scripts created by IV&V and the randomly selected test cases/scripts prepared by ACS that will be executed by PCG.

8.1.5. Final IV&V Test Exit Report

The Final IV&V Test Exit Report will summarize all of the IV&V independent testing activities, including lessons learned.

A DED will be provided for approval by the EX-MMIS PCG Project Manager/IV&V Lead prior to submitting the report.

8.2. IVVP Documentation

PCG will create, update, and store documents using the tools identified in Section 4.3.2. The IV&V team member who creates the document will be considered the owner of that document and be responsible for its updates and storage. The IV&V Lead or designee will disseminate the documents to the appropriate state and/or implementation vendor staff in addition to the EX-MMIS PCG Project Manager/IV&V Lead.

8.2.1. IV&V Plan

The initial work product for this IV&V effort is this IVVP, which describes how IV&V services will be performed. This IVVP follows the IEEE standard 1012-2010. The IVVP will be maintained throughout the life of the project.

Appendix A – IV&V High-Level Schedule and Deliverables Matrix

The IV&V Plan describes the activities which will be performed throughout the EX-MMIS Project. The tasks and processes described in Section 5 of the Plan will be used to develop a detailed IV&V Schedule which will be produced and maintained using Microsoft Project software. Figure 5 – IV&V Schedule Diagram shows the overall flow of how the IV&V activities correlate to the EX-MMIS SDLC Phases. Additionally, an IV&V Deliverables Matrix is attached which maps out in detail when the IV&V activities will occur.

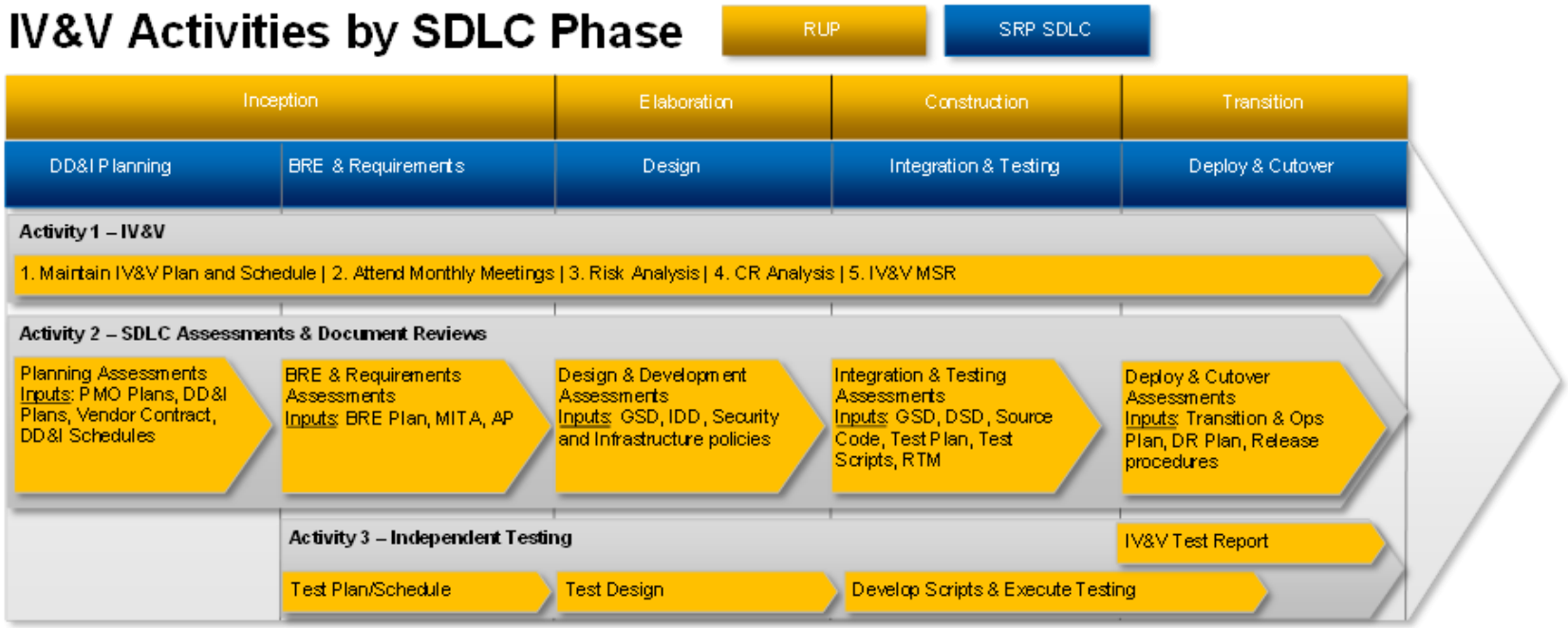


Figure 5 – IV&V Schedule Diagram

IX.4 Project Metric Matrix

The following is a copy of our IV&V project risk matrix.

System and Acceptance Test Metrics – Quality Checklist

Overall General Assessment/Suggestions (If Appropriate)
1.

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
	System Test Plan	Scope - The Scope of functionality being tested must be clearly defined. Also, if there are items clearly defined as not in scope for a particular release they should be listed.		
		Test Process – The test process, approach and various types of functional test that will be performed during execution should be clearly defined.		
		Assumptions and Constraints – The assumptions leading into this phase of test and any known constraints should be clearly defined.		
		External References – The plan must be consistent with other artifacts that make references to the System Test Plan such as the Master Test Plan, Defect Management Plan etc.		
		Planning – Test Planning activities must be clearly defined.		
		Execution – Test Execution activities such as how the test scripts will be run and how defects will be handled must be clearly defined.		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		Roles and Responsibilities – The roles that will participate in this phase of testing and their responsibilities should be clearly defined.		
		Entry and Exit Criteria – The entry criteria for System Test to begin and Exit Criteria to mark how System Test ends should be clearly defined.		
		Test Data – The Test data requirements needed for system test should be clearly defined		
		Test Environment – The Environment configuration and infrastructure in which System Test will take place should be clearly documented.		
	System Test Scripts	Test script list – All System Test Scripts that will be executed should be identified for requirement in scope.		
		Planning information - The Test scripts should have • Unique identification number, • Created Date, • Created by, • Requirement traced to • appropriately categorized, • Brief description of the purpose of the test		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		script, • description of preconditions that need to be in place before the test script is executed • Steps to be carried out to test a piece of functionality, • Expected outcomes for each step		
		Execution Information - The system test script should have • Executed date, • Executed by, • result of the test at each step • Actual Result • Additional comments by tester or associated defects.		
	Traceability Matrix	Requirements Coverage - The System Test Traceability matrix should clearly map all test scripts to the requirement in scope (The traceability should follow the requirement traceability path defined in the Requirements Management Plan). Any gaps or deviations should be appropriately explained.		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
	System Test Report	Scope - The Report should clearly define what was tested		
		Execution Summary/Overview – The report should clearly summarize the activities that took place during test execution such as how many cycles of test, dates of execution, environment and resources used etc.		
		Test Results - It should clearly document the result of each test script and any defects associated with test scripts		
		Test Metrics - It should clearly document the execution and defect metrics that were identified during System Test		
		Deviations from Plan - It should clearly capture any deviations or decisions that did not comply with the System Test Plan and reasoning for why these decisions were taken.		
		Final Recommendation - It should clearly state the recommendation to move to the next phase in the project based on the results obtained from System Test		
	Defect Management Plan	Defect Lifecycle - The plan should clearly define the lifecycle of a defect that may be identified during a test phase		
		Defects by Types of test - It should clearly state		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		which test phases the Plan applies to		
		Defect Management for System and UAT - At a minimum it should document the defect management process for System Test and User Acceptance Test		
		Defect Status - It should clearly define the various statuses associated with a defect, provide a description of what each status means and how this determined by the team.		
		Defect Priority/Severity - It should clearly define the priorities/severity associated with a defect, provide a description of what these values mean and how this determined by the team.		
		Deviations from normal procedure - It should clearly define why and how a defect may deviate from the regular defect management lifecycle (such as an emergency defect)		
		Origins of Defects - It should clearly identify all the sources a defect may arise from such as system test, regression test, performance test etc.		
		Roles and Responsibilities - It should clearly define the roles and responsibilities associated with the defect management process		
		Attributes of defects - It should clearly define the attributes that will be associated with a defect (such as Release, Environment Found, Target fix date etc.)		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
	User Acceptance Test Plan	Scope - The Scope of functionality being tested must be clearly defined. Also, if there are items clearly defined as not in scope for a particular release they should be listed.		
		Test Process – The test process, approach and various types of functional test that will be performed during execution should be clearly defined.		
		Assumptions and Constraints – The assumptions leading into this phase of test and any known constraints should be clearly defined.		
		External References – The plan must be consistent with other artifacts that make references to the UAT Plan such as the Master Test Plan, Defect Management Plan etc.		
		Planning – Test Planning activities must be clearly defined.		
		Execution – Test Execution activities such as how the test scripts will be run and how defects will be handled must be clearly defined.		
		Roles and Responsibilities – The roles that will participate in this phase of testing and their responsibilities should be clearly defined.		
		Entry and Exit Criteria – The entry criteria for UAT to begin and Exit Criteria to mark how UAT ends should		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		be clearly defined.		
		Test Data – The Test data requirements needed for UAT should be clearly defined		
		Test Environment – The Environment configuration and infrastructure in which UAT will take place should be clearly documented.		
	User Acceptance Test Scripts/Scenarios	Test script list – All UAT Test Scripts that will be executed should be identified for requirement in scope.		
		Planning information - The Test scripts should have • Unique identification number, • Created Date, • Created by, • Requirement traced to • appropriately categorized, • Brief description of the purpose of the test script, • description of preconditions that need to be in place before the test script is executed • Steps to be carried out to test a piece of		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		functionality, • Expected outcomes for each step		
		Execution Information - The UAT script should have • Executed date, • Executed by, • result of the test at each step • Actual Result • Additional comments by tester or associated defects.		
	User Acceptance Test Report	Scope - The Report should clearly define what was tested		
		Execution Summary/Overview – The report should clearly summarize the activities that took place during test execution such as how many cycles of test, dates of execution, environment and resources used etc.		
		Test Results - It should clearly document the result of each test script and any defects associated with test scripts		
		Test Metrics - It should clearly document the execution and defect metrics that were identified		

ID	Quality Checklist Item	Standard Measurement	Met? Yes/No/Partial	Comments/Recommendations
		during UAT		
		Deviations from Plan - It should clearly capture any deviations or decisions that did not comply with the UAT Plan and reasoning for why these decisions were taken.		
		Final Recommendation - It should clearly state the recommendation to move to the next phase in the project based on the results obtained UAT.		

IX.5 IV&V Risk Log (Sample Assessment)

The following is a sample IV&V Risk Log. This log is used for risk identification, mitigation planning, progress tracking, and communication.

The provided sample includes sample risks compiled by PCG for the NOMADS project. This provides additional insight into the level of detail captured during the IV&V risk process.

Please note that the attached sample includes only Testing related risks. The risk log template allows for risks to be documented and monitored for the following categories:

- ***Contractor's PM***
- ***Requirements Management***
- ***Quality Management***
- ***Operating Environment***
- ***Design and Development***
- ***Testing***
- ***Data Management***
- ***Security***
- ***Historical***

The sample risk log is provided on the next page.

Public Consulting Group
Technology Consulting

ASSESSMENT IDENTIFICATION				OBSERVATIONS						
IV&V Reference number	Entry Type	Status Date	Status	Observation	Updates	Risk Recommendation	Priority/ Severity	IV&V Status	Federal Comments	State Comments
e-te.11069	Risk	4/25/2014	Closed	**Post-Go-Live Changes - Emergency Builds & System Impact** Insufficient time and notice for the team to review and/or test impacted changes may result in a negative impact on the eligibility system. In such cases, the vendor team selects 5-6 test cases and if there is an 80% pass rate, the fix is marked as ready for production. At times, there is insufficient time for the state to perform end-to-end testing prior to production roll-out.	04/25/2014 SD: As noted in the update for risk #e-te.11066, IV&V is continuing the recommend that the defect management process be reviewed and updates made as appropriate. At this time, IV&V will close this risk and continue to track the risk under IV&V risk #e-te.11066.	The teams should work closely together to develop a process for emergency builds that factors in the nature of the changes being rolled out and ensures that theteam is comfortable with the level of testing being done on any impacted changes.	Medium	Closed	N/A	N/A
e-te.11066	Risk	12/30/2014	Closed	**UAT Defect Management:** Having to manage 2 defect repositories to handle all defects runs the risk of disconnects should the repositories become out of synch.	12/30/14: The standing round table meetings continue to be held with the state and vendor to discuss any issues that arise during the testing. As all defects are being tracked in the one defect repository (Bugzilla), IV&V is closing this risk at this time.	The State should consider supporting a centralized defect management process that utilizes a project wide defect management tool.	Low	Closed		
e-te.11074	Risk	1/30/2015	Updated	**Pilot Testing** Insufficient time and notice for the vendor to review maintenance/build changes in the Staging environment may result in a negative impact on the ability to complete the CMS Pilot testing effort within the planned schedule.	10/24/14: IV&V has no new updates for this risk at this time. IV&V is keeping this low risk open at this time and will continue to monitor upcoming planning efforts. 9/26/14: CMS held a webinar to provide updated guidance on the testing effort and recording/reporting of results.	IV&V recommends that the state proactively review any promoted fixes to the Staging environment ahead of time during this period to ensure they have a good understanding of what the changes are and how this would impact planned testing.	Low	Open		