

**STANDARD AGREEMENT**

STD 213 (Rev. 10/2018)

AGREEMENT NUMBER

19-10950

PURCHASING AUTHORITY NUMBER (If Applicable)

CDPH 4265

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

## CONTRACTING AGENCY NAME

California Department of Public Health

## CONTRACTOR NAME

Deloitte Consulting, LLP

2. The term of this Agreement is:

## START DATE

April 01, 2020 or upon final approval by CDPH, whichever is later

## THROUGH END DATE

March 31, 2021

3. The maximum amount of this Agreement is:

\$1,500,000 (one million five hundred thousand dollars)

4. The parties agree to comply with the terms and conditions of the following exhibits, which are by this reference made a part of the Agreement.

EXHIBITS	TITLE	PAGES
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	The agreement is completed under PCC 1102, Proclamation State of Emergency, Executive Order N-25-20	

*Items shown with an asterisk (\*), are hereby incorporated by reference and made part of this agreement as if attached hereto.**These documents can be viewed at [www.dgs.ca.gov/ols/resources/standardcontractlanguage.aspx](http://www.dgs.ca.gov/ols/resources/standardcontractlanguage.aspx)*

IN WITNESS WHEREOF, THIS AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO.

**CONTRACTOR**

CONTRACTOR NAME (if other than an individual, state whether a corporation, partnership, etc.)

Deloitte Consulting, LLP

## CONTRACTOR BUSINESS ADDRESS

980 9th Street, Suite 1800

## CITY

Sacramento

## STATE

CA

## ZIP

95814

## PRINTED NAME OF PERSON SIGNING

Stephen Lee

## TITLE

Managing Director

## CONTRACTOR AUTHORIZED SIGNATURE

## DATE SIGNED

4/1/2020

**STANDARD AGREEMENT**

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CDPH 4265

**STATE OF CALIFORNIA**

## CONTRACTING AGENCY NAME

California Department of Public Health

## CONTRACTING AGENCY ADDRESS

1616 Capitol Avenue, Suite 74.262, MS 1802, PO Box 997377

CITY

Sacramento

STATE

CA

ZIP

95899

## PRINTED NAME OF PERSON SIGNING

Kristy Lieu

TITLE

Chief, Contracts Management Unit

## CONTRACTING AGENCY AUTHORIZED SIGNATURE

*Kristy Lieu*

DATE SIGNED

*04/01/20*

## CALIFORNIA DEPARTMENT OF GENERAL SERVICES APPROVAL

EXEMPTION (If Applicable)

Exempt per: Proclamation of State of Emergency,  
PCC 1102, Executive Order N-25-20

## ATTACHMENT 1 – STATEMENT OF WORK

### 1. STATEMENT AND DESCRIPTION

This Statement of Work (SOW) reflects the services the Offeror may provide to California Department of Public Health (CDPH). The Contractor must have extensive and demonstrated knowledge and experience as identified in this SOW.

In the wake of the COVID-19 pandemic, CDPH executive management has decided to add a new application to its Pega Platform that will provide urgent tracking and documentation of employee metrics, such as physical health and teleworking status. The Contractor agrees to provide enough resources to develop the emergency application utilizing the Pega 7 platform (or most current version).

In addition, the Contractor must provide sufficient teams for potentially one to five (1-5) projects in parallel utilizing the Pega 7 platform (or most current version) and the Certification and Licensing for Government (CLG) framework. The Contractor will work with the ITSD COE to identify reusable components, follow CDPH standards, develop and deploy applications, and perform maintenance and operations activities, including Pega platform software upgrades.

### 2. SERVICE LOCATION

The Contractor may be required to work in various locations based on project needs as proposed in a given work order authorization.

- A. CDPH Headquarter – Downtown Sacramento
- B. Richmond Office
- C. Other CDPH Field Offices
- D. Contractor's Office

### 3. SERVICE HOURS

The services shall be provided during the Contractor's normal CDPH working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, Pacific Time, excluding State of California official holidays. Exceptions may occur if the Contractor and the State agree that services are required outside regular working hours for specific activities (e.g., batch monitoring, build deployment, software upgrades).

### 4. PROJECT REPRESENTATIVES

- A. The project representatives during the term of this contract will be:

<b>California Department of Public Health</b> Mark Turner, Contract Manager Telephone: (916) 440-7203 E-mail: <a href="mailto:mark.turner@cdph.ca.gov">mark.turner@cdph.ca.gov</a>	<b>Deloitte Consulting, LLP</b> Stephen Lee, Contract Manager Telephone: (916) 288-3920 E-mail: <a href="mailto:slee@deloitte.com">slee@deloitte.com</a>
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B. Direct all inquiries to:

<p><b>California Department of Public Health</b> ITDS/COE Attention: Mark Turner 1616 Capitol Avenue, MS 6700 Sacramento, CA 95814</p> <p>Telephone: (916) 440-7203 E-mail: <a href="mailto:mark.turner@cdph.ca.gov">mark.turner@cdph.ca.gov</a></p>	<p><b>Deloitte Consulting, LLP</b> Attention: Stephen Lee 980 9<sup>th</sup> Street, Suite 1800 Sacramento, CA 95814</p> <p>Telephone: (916) 288-3920 E-mail: <a href="mailto:slee@deloitte.com">slee@deloitte.com</a></p>
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C. All payments from CDPH to the Contractor; shall be sent to the following address:

<b>Remittance Address</b>
<p>Deloitte Consulting, LLP P.O. Box 844717 Dallas, TX 75284-4717</p>

- D. Either party may make changes to the information above by giving written notice to the other party. Said changes shall not require an amendment to this contract. However, if the remittance address has changed, the Contractor will be required to submit a completed Std. 204 Payee Data Record form, which must match the invoice address in order to avoid payment delays.

## 5. SERVICES TO BE PERFORMED

The Contractor is expected to provide the following services under this contract:

- A. Work collaboratively with CDPH IT and program staff to ensure that project standards are met, and best practices are followed.
- B. Design, configure or support applications on the Enterprise Licensing platform.
- C. Implement or support on-line web-based applications for the people of California
- D. Perform maintenance and operations for the Enterprise Licensing platform, including Pega software upgrades.
- E. Provide CDPH with project management services, which includes but is not limited to, scheduling, assistance with creation of governance standards, authoring application development roadmaps, and managing resources to complete work order authorizations.

## 6. WORK ORDER AUTHORIZATION (WOA)

All Contractor work will be authorized in advance by the State via a signed WOA. WOAs will authorize services that are within the scope of this Contract. It is understood and agreed by both parties to this Contract that all terms and conditions of this Contract shall remain in force. Such WOA shall in no way constitute a Contract other than as provided pursuant to this Contract nor in any way amend or supersede any of the other provisions of this final Contract, other than as provided pursuant to the WOA.

Personnel resources expended on task accomplishment in excess of the cost authorized in the WOA will be at no cost to the State. All WOAs will be reviewed during Planning sessions and must be signed by the CDPH Contract Manager, CDPH Program Designee and other identified CDPH staff prior to beginning work. Once the work is complete, the CDPH Contractor Manager will approve the WOA for payment. The goal for the WOA is to ensure that the CDPH and Contractor have a common understanding of the scope, schedule, format and content of work to be performed prior to beginning work.

### A. WOA Procedures

A sample WOA form is included as Attachment A-1.

### B. WOA Approval

All WOAs shall be subject to the State's Acceptance, along with all supporting working materials and documents, including working papers, test scripts, test results, reference materials, etc. All supporting working materials and documents are the property of the State and shall be available to the State upon request. It is at the State's sole determination as to whether a WOA is acceptable. No work shall be accepted by the State for review without a WOA.

Before an invoice can be created and submitted to CDPH for payment, the CDPH Designee must sign off on the related WOA as being complete and acceptable. It shall be CDPH's sole discretion as to whether a WOA has been successfully completed and is acceptable to the CDPH.

Under no circumstance shall the Contractor be entitled for payment for preparatory expenses and any anticipated future needs. Personnel resources expended on task accomplishment in excess of the cost authorized in the WOA will be at no cost to the State.

## 7. CONTRACTOR ADMINISTRATIVE REQUIREMENTS

### A. Contractor's Contract Manager

The Contractor shall designate a Contract Manager to whom all project communications may be addressed, who has the authority to act on all aspects of the project, as well as the contact for all Contractor staffing and invoicing issues. The Contractor's personnel shall work as part of an integrated team of professionals to deliver quality services in a timely manner. Effective teamwork is essential to the successfully completion of the required tasks. Contractor personnel should continue to keep their knowledge and skills up-to-date throughout the term of the Contract.

**B. Contractor Personnel Changes**

The Contractor is required to maintain staff continuity throughout the life of the project. CDPH will be notified in writing, 10 days prior to any changes to the personnel assigned to tasks. If a Contractor's employee is unable to perform his or her duties due to illness, resignation, emotional instability, incarceration, or other factors beyond the Contractor's control, the Contractor will make every reasonable effort to provide suitable substitute personnel. Prior to initiating work, the substitute personnel must meet all requirements of this contract and SOW, provide a resume and sample work, and must be approved in writing by CDPH.

**C. Submission of Invoices**

Payment for services performed under this Contract shall be made in accordance with the State of California's Prompt Payment Act (GC Section 927 et seq.).

Invoices shall be submitted in arrears after the work is concluded and CDPH notifies the Contractor that the WOA work is accepted. One invoice shall be submitted to the CDPH Contract Manager, detailing the labor rate as agreed upon in the Attachment 2A – Cost Worksheet. No more than one invoice can be processed during a monthly period. Multiple WOAs can be included on an invoice. A sample Invoice Format is included - Attachment 2B.

Invoice submissions must include the following:

- 1) Company letterhead
- 2) Submission Date
- 3) Name, Address and Phone number of the CDPH Contract Manager receiving invoice
- 4) Invoice Number
- 5) Contract Number
- 6) Small Business/Disabled Veteran Business Enterprise (DVBE) number (if applicable)
- 7) All WOAs with associated hours, descriptions and total amounts requested
- 8) Comments (if needed)
- 9) Remittance Information: Company Name and Remittance Address
- 10) Authorized Representative of Company: Name, Title, Address and Phone Number  
Signature of Authorized Representative
- 11) Contractor timesheets, including daily time entries

**D. Problem Escalation**

The Contractor may wish to escalate issues. Such issues may include, but are not necessarily limited to, invoice processing and CDPH timeliness in meeting its other contractual obligations. There may be instances where the severity of the problem justifies

escalated reporting. To this extent, the Contractor will determine the level of severity and notify the appropriate CDPH personnel as specified below.

The Contractor shall advise the CDPH Contract Manager of any intended escalation. If the Contractor is not satisfied that CDPH is exercising its best efforts to resolve any problem or issue in an appropriate amount of time, the Contractor may escalate the problem or issue to the next appropriate level(s).

CDPH personnel are to be notified in the following sequence:

1. First level: CDPH Contract Manager
2. Second level: CDPH Project Manager
3. Third level: CDPH Center Of Excellence (COE) Manager

#### E. Artifact Format

Unless explicitly stated otherwise, all Artifacts shall be provided Microsoft Word 2016, Microsoft Excel 2016, Microsoft PowerPoint 2016, Visio 2013, or Microsoft Project 2013. This applies, but is not limited to, word processing documents, spreadsheets, schedules, and presentations. Artifacts must be well organized, free of spelling or typographical errors, grammatically correct and contain pertinent, up to date information when submitted to CDPH.

The Contractor may be required to utilize the Project Management Framework in Pega (PMFP) to create user stories, track backlog, submit bugs, and provide clear visibility to progress. The PMFP framework must be fully loaded to provide detailed information on the development effort.

The PMFP tool shall include:

1. Project backlog
2. Updated project plan
3. Burn down report
4. Status of user stories
5. Issues open or encountered, identified risks, proposed resolutions, and actual resolutions
6. Anticipated tasks to be completed in the next week
7. Other relevant information to assist in monitoring the project's progress
8. Other project artifacts

#### F. Return of State Property

Unless otherwise stipulated in this Agreement, all equipment and/or property that are purchased/reimbursed with agreement funds or furnished by CDPH under the term of this Agreement, shall be considered state equipment and the property of CDPH.

### 8. STATE RESPONSIBILITIES

CDPH shall provide the following:

- A. Assign a Contract Manager (CM) to coordinate WOA completion, approve of WOA and coordinate payment of invoices.
- B. Provide the required hardware and software to support a minimum of four environments, Development, Testing, Staging, and Production.
- C. Identify a Product Owner (PO) within Program who will be available throughout the

- duration of the project to provide timely decisions and clarifications on required user stories.
- D. Work with the Contractor and provide clarifications of the WOA process and associated expectations.
  - E. Be responsible for all security assessments.
  - F. Provide access to appropriate levels of staff, stakeholders, users, and department management for successful completion of project activities.
  - G. Approve any staffing changes in advance of the change.
  - H. Promote timely decisions and reviews of WOAs and Work Products.
  - I. Pay invoices based on CDPH acceptance of approved WOAs.
  - J. Review invoices and associated documents within ten (10) business days of receipt and notify the Contractor in writing of acceptance or dispute.
  - K. Provide building access and work space for Contractor staff.

**9. SUBCONTRACTOR**

Subcontractors may be utilized for this project.

**ATTACHMENT 2 AGENCY SPECIAL PROVISIONS**

**1. Invoicing and Payment**

- A. In no event shall the Contractor request reimbursement from the State for obligations entered into or for costs incurred prior to the commencement date or after the expiration of this Agreement.
- B. For services satisfactorily rendered, and upon receipt and approval of the invoices, the State agrees to compensate the Contractor for Time and Materials with the Classification line items amount specified in Attachment 2A – Cost Worksheet.
- C. Invoices shall include the Agreement Number and shall be submitted in triplicate not more frequently than monthly in arrears to:

Contract 19-10950  
California Department of Public Health  
Information Technology Services Division  
Attn: Mark Turner  
1616 Capitol Avenue, MS 6700  
Sacramento, CA 95814

The State, at its discretion, may designate an alternate invoice submission address. A change in the invoice address shall be accomplished via a written notice to the Contractor by the State and shall not require an amendment to this agreement.

- D. Invoice shall be accompanied by a Work Order Authorization (WOA), as identified in Attachment 1 – Statement of Work and contain the following:
  - 1) Be prepared on Contractor letterhead.
  - 2) Invoices must be submitted to CDPH either electronically or in hard copies.
  - 3) Identify the billing and/or performance period covered by the invoice.
  - 4) Itemize costs for the billing period in the same or greater level of detail as indicated in this agreement. Subject to the terms of this agreement, reimbursement may only be sought for those costs and/or cost categories expressly identified as allowable in this agreement and approved by CDPH.

**E. Amounts Payable**

The amounts payable under this agreement shall not exceed \$1,500,000 for the term of this agreement.

**F. Rates Payable**

Contractor will be reimbursed for services satisfactorily performed based on the following rate schedule identified in Attachment 2A – Cost Worksheet.

**2. Budget Contingency Clause**

- A. It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be

of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

- B. If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either cancel this Agreement with no liability occurring to the State, or offer an agreement amendment to Contractor to reflect the reduced amount.

**3. Prompt Payment Clause**

Payment will be made in accordance with, and within the time specified in, Government Code Chapter 4.5, commencing with Section 927.

**4. Timely Submission of Final Invoice**

- A. A final undisputed invoice shall be submitted for payment no more than thirty (30) calendar days following the expiration or termination date of this agreement, unless a later or alternate deadline is agreed to in writing by the program contract manager. Said invoice should be clearly marked "Final Invoice", indicating that all payment obligations of the State under this agreement have ceased and that no further payments are due or outstanding. The State may, at its discretion, choose not to honor any delinquent final invoice if the Contractor fails to obtain prior written State approval of an alternate final invoice submission deadline.
- B. The Contractor is hereby advised of its obligation to submit to the state, with the final invoice, a completed copy of the "Contractor's Release (Attachment 4)".

**5. Expense Allowability / Fiscal Documentation**

- A. Invoices, received from the Contractor and accepted for payment by the State, shall not be deemed evidence of allowable agreement costs.
- B. Contractor shall maintain for review and audit and supply to CDPH upon request, adequate documentation of all expenses claimed pursuant to this agreement to permit a determination of expense allowability.
- C. If the allowability of an expense cannot be determined by the State because invoice detail, fiscal records, or backup documentation is nonexistent or inadequate according to generally accepted accounting principles or practices, all questionable costs may be disallowed and payment may be withheld by the State. Upon receipt of adequate documentation supporting a disallowed or questionable expense, reimbursement may resume for the amount substantiated and deemed allowable.

**6. Recovery of Overpayments**

- A. Contractor agrees that claims based upon the terms of this agreement or an audit finding and/or an audit finding that is appealed and upheld, will be recovered by the State by one of the following options:
- 1) Contractor's remittance to the State of the full amount of the audit exception within 30 days following the State's request for repayment;
  - 2) A repayment schedule agreeable between the State and the Contractor.
- B. The State reserves the right to select which option as indicated above in paragraph A will be employed and the Contractor will be notified by the State in writing of the claim procedure to be utilized.

- C. Interest on the unpaid balance of the audit finding or debt will accrue at a rate equal to the monthly average of the rate received on investments in the Pooled Money Investment Fund commencing on the date that an audit or examination finding is mailed to the Contractor, beginning 30 days after Contractor's receipt of the State's demand for repayment.
- D. If the Contractor has filed a valid appeal regarding the report of audit findings, recovery of the overpayments will be deferred until a final administrative decision on the appeal has been reached. If the Contractor loses the final administrative appeal, Contractor shall repay, to the State, the over-claimed or disallowed expenses, plus accrued interest. Interest accrues from the Contractor's first receipt of State's notice requesting reimbursement of questioned audit costs or disallowed expenses.

#### **7. Travel and Per Diem Reimbursement**

No travel shall be permitted under this agreement.

**ATTACHMENT 2A – COST WORKSHEET**

Term: Upon Approval up to 12 months

- List the Name, Project Role, and hourly rate of the proposed staff, including subcontractors who will provide the services described in this contract.
- Attach resume for each of the proposed staff listed.

Name	Project Role Title	Classification	Sub-contractor (yes/no)	Hourly Rate
Stephen Lee	Engagement Director	Senior Project Manager	No	\$210
Mayur Kapoor	Project Manager	Project Manager	No	\$180
Niranjan Sahu	Lead System Architect (LSA)	Senior Technical Lead	Yes	\$195
Saumya Sahai	Senior Systems Architect (SSA)	Technical Lead	No	\$175
Jeremiah Moody	Senior Systems Architect (SSA)	Technical Lead	Yes	\$175
Rohit Sakhamuri	Senior Systems Architect (SSA)	Technical Lead	Yes	\$175
John Bonner	Senior Business Architect (SBA)	Technical Lead	Yes	\$175
Mohammed Doha	Quality Assurance (QA) Tester	Senior Programmer	No	\$135
Mohammed Islam	Quality Assurance (QA) Tester	Senior Programmer	No	\$135
Ruchika Nain	Quality Assurance (QA) Tester	Senior Programmer	No	\$135
Hiba Habli	Quality Assurance (QA) Tester	Programmer	No	\$119
Steve Sutton	Lead Business Architect (LBA)	Technical Lead	Yes	\$175
LaTonya Jeffrey	Lead Business Architect (LBA)	Technical Lead	Yes	\$175

1. CDPH has allocated \$1,500,000 for this contract.
2. This is a Time and Material-Based Contract. Payments will be based on the completion and acceptance of the specific WOAs. The Awardee is only entitled to reimbursement for time and materials directly related to properly issued work orders, and in no circumstance shall the Contractor be entitled to payment for preparatory expenses for anticipated future needs. Personnel resources expended on task accomplishment in excess of the cost authorized in the WOA will be at no cost to the State.

3. The Contractor further understands that the hourly rates must be fully loaded, including but not limited to, operating expenses, labor, transportation/travel costs, per diem expenses, equipment costs, supplies, overhead, annual inflation costs/rate adjustments, profit margin, taxes, shipping, and etc.
4. No travel will be required or reimbursed under this contract.
5. Subcontractor may be utilized for this project.

The Contractor hereby certifies that the hourly rate(s) listed on this Cost Worksheet are true and accurate to the best of its knowledge and shall remain in effect throughout the term. Amendment, if allowed for time and/or money, must be consistent with the original rates.

<b>Print Name:</b> Stephen Lee	<b>Title of Authorized Representative:</b> Managing Director
<b>Signature:</b> 	<b>Date:</b> March 25, 2020

**ATTACHMENT 2B  
INVOICE FORMAT (SAMPLE)**

(Company letterhead must be included)

Date Submitted:

CDPH Contract Manager:

Name:

Address:

Phone Number:

Invoice No.:

Contract No.:

Small Business/Disabled Veteran Business Enterprise (DVBE) (if applicable):

This invoice requests payment of the following Work Order Authorizations (WOAs):

WOA #	Hours	WOA Description	Amount
<b>Total:</b>			

Comments:

Remit Payment to:

Company Name:

Remittance Address

Authorized Representative of Company:

Name:

Title:

Address:

Phone Number:

\_\_\_\_\_  
Authorized Representative Signature

**Note:** Taxpayer Identification Number (TIN) should not be included.

Comments:

Submit payment to:

Contractor's Signature:

**CDPH USE ONLY**

I certify that the above have been received and accepted as complete.

CDPH/ITSD Manager

Date

Phone

**ATTACHMENT 2C**  
**WORK ORDER AUTHORIZATION (Sample)**

<b>CDPH USE ONLY</b>									
Agreement #:					WOA #:				
Fiscal Year:				Start Date:			End Date:		
Approp Ref	Fund	Account	Alt Account	Program	Project ID	Activity ID	Reporting Structure	Service Location	Actual Cost <sup>①</sup>
									\$
<b>*TOTAL ACTUAL COST:</b> \$									

<sup>①</sup>Actual Cost will be entered upon work completion and invoice hours/costs validation.

\*Total actual cost must match invoice. Total cost on the invoice cannot exceed total estimated cost on WOA and must align with timesheets.

### SECTION 1: Work Order Authorization and Approval to Begin Work

The **Work Order Authorization** Section describes the planned work products associated to this WOA and lists Contractors hours to complete the work. Work Products will be identified during the planning session and accepted during the review sessions. The signatures below authorize work to begin:

*[CM Complete This Section]*

WOA #	WOA Title#:
Start Date: XX/XX/XXXX	Completion Date: XX/XX/XXXX
Work Description:	

**Total Contractor hours required for WOA.**

This section provides the Estimated Hours/Costs associated with individuals required for this WOA. The signatures below authorize work to begin.

*[Contractor Completes This Section-Labor Hours Based on Work Description]*

#	Classification	Name	Labor Rate*	Estimated Hours	Estimated Cost
1					\$
2					\$
3					\$
4					\$
5					\$
6					\$
<b>Total Estimated Hours / Cost:</b>					\$

\*Labor rates must not exceed the approved hourly labor rates as specified in the agreement.

[CM Obtain Signatures to Authorize Work To Begin]

Organization / Role	Name	Signature	Date
Contractor Manager			
CA Department of Public Health ITSD Contract Manager (CM)			
CA Department of Public Health Program Designee			

## SECTION 2: Work Order Approval to Invoice

The Work Order Approval to Invoice insures the following:

- Invoiced hourly rate aligns with contract.
- Invoiced costs do not exceed **Total Estimated Costs** for this WOA.
- Staff timesheets provided match actual days and hours worked

## SECTION 3: Work Order Approval and Payment

The Work Order Approval and Payment Section contain signature approving work completion and for the Contractor to submit an invoice for payment.

CDPH agrees to pay for the Work Products as described in this WOA. Work Products NOT completed are listed above showing final disposition (e.g. Product Backlog).

### APPROVAL TO INVOICE FOR PAYMENT

The signature below approves the payment of the WOA. The Contractor is responsible for Invoicing CDPH as outlined in the agreement number referenced above.

[CM to Obtain Final Signature]

Organization / Role	Name	Signature	Date
CA Department of Public Health ITSD Contract Manager			

Note: Invoices must include Contractor timesheets and cannot exceed "Total Estimated Cost" listed on page 1 of this WOA.

ATTACHMENT 4  
**Contractor's Release**

**Instructions to Contractor:**

With final invoice(s) submit one (1) original and one (1) copy. The original must bear the original signature of a person authorized to bind the Contractor. The additional copy may bear photocopied signatures.

**Submission of Final Invoice**

Pursuant to contract number 19-10950 entered into between the State of California Department of Public Health (CDPH) and the Contractor (identified below), the Contractor does acknowledge that final payment has been requested via invoice number(s) \_\_\_\_\_, in the amount(s) of \$ \_\_\_\_\_ and dated \_\_\_\_\_

If necessary, enter "See Attached" in the appropriate blocks and attach a list of invoice numbers, dollar amounts and invoice dates.

**Release of all Obligations**

By signing this form, and upon receipt of the amount specified in the invoice number(s) referenced above, the Contractor does hereby release and discharge the State, its officers, agents and employees of and from any and all liabilities, obligations, claims, and demands whatsoever arising from the above referenced contract.

**Repayments Due to Audit Exceptions / Record Retention**

By signing this form, Contractor acknowledges that expenses authorized for reimbursement does not guarantee final allowability of said expenses. Contractor agrees that the amount of any sustained audit exceptions resulting from any subsequent audit made after final payment will be refunded to the State.

All expense and accounting records related to the above referenced contract must be maintained for audit purposes for no less than three years beyond the date of final payment, unless a longer term is stated in said contract.

**Recycled Product Use Certification**

By signing this form, Contractor certifies under penalty of perjury that a minimum of 0% unless otherwise specified in writing of post consumer material, as defined in the Public Contract Code Section 12200, in products, materials, goods, or supplies offered or sold to the State regardless of whether it meets the requirements of Public Contract Code Section 12209. Contractor specifies that printer or duplication cartridges offered or sold to the State comply with the requirements of Section 12156(e).

**Reminder to Return State Equipment/Property (If Applicable)**

(Applies only if equipment was provided by CDPH or purchased with or reimbursed by contract funds)

Unless CDPH has approved the continued use and possession of State equipment (as defined in the above referenced contract) for use in connection with another CDPH agreement, Contractor agrees to promptly initiate arrangements to account for and return said equipment to CDPH, at CDPH's expense, if said equipment has not passed its useful life expectancy as defined in the above referenced contract.

**Patents / Other Issues**

By signing this form, Contractor further agrees, in connection with patent matters and with any claims that are not specifically released as set forth above, that it will comply with all of the provisions contained in the above referenced contract, including, but not limited to, those provisions relating to notification to the State and related to the defense or prosecution of litigation.

**ONLY SIGN AND DATE THIS DOCUMENT WHEN ATTACHING TO THE FINAL INVOICE**

Contractor's Legal Name (as on contract): Deloitte Consulting, LLP

Signature of Contractor or Official Designee: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name/Title of Person Signing: \_\_\_\_\_

CDPH Distribution: Accounting (Original) Program

## Attachment 5 Resumes

### Staff Resumes

#### Engagement Director

##### Stephen Lee

###### Personal Information

**Name:** Stephen Lee

**Work Address:** 980 9<sup>th</sup> Street Suite 1800 Sacramento CA 95630

###### Phone Numbers:

[REDACTED]

###### Objective

Stephen is focused on delivering technology solutions to the State of California. He is a leader in Deloitte's California focused Sacramento public sector practice.

###### Summary of Qualifications

Stephen has more than 21 years' experience applying complex technology solutions into public sector organizations. He has deep multi technology systems implementation experience as well as strong capabilities in business analysis and technology project and program management.

###### Employment History/Experience

**Employer:** Deloitte Consulting LLP, Sacramento, CA

**Project:** State of California Dept. of Public Health - MCLS

**City and State:** Sacramento, CA

**Supervisor Name:** N/A – Project Executive

**Contact Information:** N/A

**Job Title:** Engagement Lead, Contract Manager

**Dates of Employment:** February 2017 – Present

###### Job Responsibilities:

- Overall leadership of the Deloitte team in delivering various solutions to CDPH
- Manage contract and administrative activities

**Project:** Orange County California Salesforce CRM and Land Management system

**City and State:** Santa Ana, CA

**Supervisor Name:** N/A – Project Executive

**Contact Information:** N/A

**Job Title:** Project Delivery Executive

**Dates of Employment:** October 2016– December 2017

**Job Responsibilities:**

- Led the overall delivery of a Salesforce permitting and code enforcement implementation for the County of Orange. The system provided a public portal with CRM Incident reporting capability as well as external and internal functionality for planning and development planning, permitting inspections and code enforcement.

**Project:** California CDPH SIS Migration

**City and State:** Sacramento, CA

**Supervisor Name:** Christine Huddleson

**Contact Information:** Available on request

**Job Title:** Project Executive

**Dates of Employment:** January 2015 to July 2017

**Job Responsibilities:**

- Led team to plan, design and then implement a move to a new set of infrastructure at a new State data center for one of CDPH's most significant enterprise applications.
- Work included planning, infrastructure design, upgrades of specific components in the product stack and then migration of custom .Net application and MSBE data warehouse from legacy environment to a new tier 3 data center to support ongoing operations of the program. Performance and security testing were conducted to confirm application security prior to moving to the new environment and to determine the level of performance improvement achieved by the move to the new environment.

**Project:** Resources Legacy Fund – California State Parks Technology Roadmap

**City and State:** Sacramento, CA

**Supervisor Name:** N/A

**Contact Information:** N/A

**Job Title:** Lead consultant and Project Manager

**Dates of Employment:** June 2015– August 2015

**Job Responsibilities:**

- Stephen, working with a larger team supporting the California Parks Transformation Initiative, led a small team in an examination of the current state of the Department of Parks and Recreation's current technology and the emerging requirements of the transformation initiative. Based on that work, he led the team to develop an implementation roadmap outlining projects, budgets and ongoing resource requirements to support California Parks as they move forward in their transformation and modernization efforts. The roadmap identified 15 distinct projects ranging from organizational development of the technology organization through assessment and remediation of existing systems to sourcing and implementation of new leading edge technology solutions.

**Project:** California Correctional Health Care Services Cerner EMR Implementation

**City and State:** Sacramento, California

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Manager

**Dates of Employment:** September 2014 –March 2016

**Job Responsibilities:**

- Stephen worked with Cerner Corporation to help them structure their project management office and project management program to support their implementation of their Millennium EMR solution in the California Prison system.
- Led a Deloitte team of up to 8 people in the PMO and then also brought a team of Deloitte health care professionals to the project to assist Cerner with their Physician outreach and clinical adoption work. The clinical adoption work expanded to include development of a complete plan for implementation, training delivery and change management for the delivery of the system across the more than 30 facilities statewide over a 2 year implementation timeframe.

**Project:** Integrated Law and Justice Agency for Orange County (ILJAOC)

**City and State:** Orange County, California

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Advisor to the Board, Program Manager & Lead Consultant

**Dates of Employment:** January 2011 to August 2015

**Job Responsibilities:**

- Based on earlier work completed for ILJAOC, Stephen led a team in the delivery of project management and oversight services for ILJAOC as they moved forward with the implementation of their integration solution. The project included two major solutions:
- A custom built transaction based integration solution that supported inter-agency justice operations. Initial functionality included a probable cause declaration solution and a pre-booking data collection and transmission application
- An electronic traffic citations solution based on handheld computing technology that allows police officers from more than 20 departments write traffic and other citations and complete field interview and traffic accident reports from the field.
- The project involved overseeing two different vendors in the design, development and rollout of their solutions to more than 20 agencies across Orange County California.

**Project:** State of New Mexico Workforce Development Unemployment Insurance system Replacement

**City and State:** Albuquerque, NM

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** PMO director

**Dates of Employment:** April 2012 to July 2012

**Job Responsibilities:**

- Conducted an end to end review of status of each of the project sub-teams (Design, Development, Integration, Conversion, Testing, Defect Resolution) against the overall project plan to develop a revised baseline schedule
- Implemented a revised set of daily project reporting protocols that allowed for the measurement and reporting of work achieved against plan
- Led team that established and operated semi-automated tools for gathering and reporting progress on a daily basis
- Led team that developed a set of differentiated reports ranging for executive dashboards to detailed team performance tracking all driven from consistent data set.

**Project:** California Correctional Health Care Agency Electronic Medical Record Strategy

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Project Director

**Dates of Employment:** June 2011 to February 2012

**Job Responsibilities:**

- Led a team of health care consultants to conduct a review of the clinical practices and supporting systems in use by CCHCS to develop an understanding of their current situation, benchmark their clinical process maturity and determine the suitability and viability of their current and planned systems.
- Develop a future state vision of how an electronic medical record should be achieved within CCHCS and then develop a strategy and roadmap for the implementation of that electronic medical record.

**Project:** California Teachers Retirement System Financial System Procurement

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Project Director

**Dates of Employment:** November 2009 to June 2010

**Job Responsibilities:**

- Project executive on an engagement to develop a procurement approach for complex financial system procurement for CalSTRS, one of the largest public retirement agencies in the US. CalSTRS operates at arm's length from the executive branch of the state and conducts its own procurements independently of the Department of General Services. The organization had not conducted a major technology procurement recently and needed to develop a fresh approach for these types of activities. Additionally, CalSTRS internal information technology group indicated that they did not have the skills or resources necessary to support the application in the short term. The procurement was further complicated because of the phased nature. The intent was to implement the financial system initially as a point solution to address specific requirements but to allow the solution to be extended through contract amendments to become a full financial system for the organization as resources and budget allowed.
- The project was groundbreaking for CalSTRS in several ways. It served as a catalyst to engage the procurement and legal functions in the development of an appropriate technology procurement form of contract and delivered an RFP document specific for this solution but that could be utilized as a technology procurement model for other systems procurements going forward. To address the internal IT challenges, a hybrid approach to

outsourcing the infrastructure was also included in the project. This approach allowed the project to move forward quickly on vendor provided infrastructure and then allowed for gradual reintegration of the infrastructure to CalSTRS internal IT environment as the agency is able to absorb the workload.

**Project:** State of California Administrative Office of the Court San Joaquin Case Management System Modernization

**City and State:** Stockton, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Implementation Project Director

**Dates of Employment:** July 2007 to April 2009

**Job Responsibilities:**

- Served as the project executive on the system replacement of the legacy civil case management system at the San Joaquin Court System. The new system was a modern configurable case management system custom developed by Deloitte. The system utilized Oracle database and WebLogic for the application tier.
- Modeled on the San Diego and Ventura implementations, San Joaquin was structured as a fast track project with reuse of standard configurations developed at the other courts with the intention of speeding the overall timeframe and lowering the cost of implementation. Configuration and data conversion were expedited and done as a single phase but cutover was done incrementally by line of business but was completed over the course of a very short 6 to 8 week period.

**Project:** State of California Administrative office of the Court San Diego Case Management system Modernization

**City and State:** San Diego, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Implementation Project Director

**Dates of Employment:** August 2005 to December 2007

**Job Responsibilities:**

- Led the system replacement of the 5 legacy civil case management systems at the San Diego Court system. The new system was a modern configurable case management system custom developed by Deloitte. The system utilized Oracle database and

WebLogic for the application tier. The San Diego project was the first implementation of the new application. Work included business process documentation, system configuration, infrastructure implementation and support as well as data conversion and cutover planning and execution.

- The project was phased to allow for incremental replacement of different lines of business at different sites and entailed 6 distinct system and operations transitions over a period of 11 months. Each transition involved retiring a legacy system, extensive data conversion and business process change along with the associated change management and training.
- The civil case management system deployment in San Diego was highly successful and went on to be used as the model for deployments of the application to modernize civil case management at the Orange, Ventura, and San Joaquin Courts.

**Project:** Integrated Law and Justice Agency for Orange County

**City and State:** Orange County, California

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Program Manager and Lead Consultant

**Dates of Employment:** January 2001 to December 2010

**Job Responsibilities:**

- Acting as an advisor to the executive director and the board of directors, provided advisory services regarding the formulation and establishment and operation of the governance model (California joint powers authority) as well as design, procurement and implementation project management services for a number of justice integration solutions.
- In addition to the governance, finance and operating model work, Stephen led two primary integration projects for ILJAOC during this timeframe.
- 

• **Project:** Province of British Columbia

• **City and State:** Victoria British Columbia

• **Supervisor Name:** Available on request

• **Contact Information:** Available on request

• **Job Title:** Project Manager and Lead Consultant

• **Dates of Employment:** January 2003 to August 2003

• **Job Responsibilities:**

- Managed the Alternative Service Delivery Strategy project for the Province of British Columbia. Leading a team of more than 20 staff developed a strategic plan for alternative service delivery for the Province. The deliverables also included an Implementation plan containing program governance recommendations and project charters for 8 short term technology related ASD projects.
- The team examined business processes and organizations across all 20 Ministries or Departments of the Province government in order to identify opportunities for ASD treatment and to understand the workings across the Provincial enterprise. Analysis was conducted from two directions with a bottom up review of agency budget allocations and development of a mapping of expenditures against programs and then a top down interview driven approach that examined organizations, programs, staff and resource allocations and opportunities for technology transformation, consolidation, reengineering and program elimination or devolution.
- Recommendations included governance, procurement, integrated service delivery and decision making considerations.

### **Professional Accomplishments**

- Project Management Professional PMI

### **Education**

- Bachelor of Electrical Engineering

## **Project Manager**

### **Mayur Kapoor**

#### **Personal Information**

**Name:** Mayur Kapoor

**Work Address:** 111 S Wacker Dr, Chicago, IL 60606

**Phone Numbers:**

#### **Objective**

Provide Project and Engagement Management Including full system and software integration, Enterprise Architecture, Technology Strategy, Solution Architecture, Integration Architecture, Business Process Management (BPM), Business Process design and development

#### **Summary of Qualifications**

Mayur is a seasoned Project Manager and Engagement Leader who has played a key role in the success of large-scale business and technology transformation implementations across multiple client engagements. His experience spans across various industries such as Insurance, Health Plans, Retail, Investment Banking, US Government, Legal and Financial Services. He has helped ideate technology solutions for complex enterprise initiatives with focus on Improving organizational efficiency while striving for innovation. Some of his specialties and interests are: Enterprise Architecture, Technology Strategy, Solution Architecture, Integration Architecture, Business Process Management (BPM), Business Process design and development, Business Process Improvement, Business Process transformation, Project Management, Application Rationalization, Pegasystems' PRPC technology, Adobe Experience Manager (AEM), SDLC, Agile methodologies, Business Analysis, SOA, Systems Integration, data analytics and management reporting.

#### **Employment History/Experience**

**Employer:** Deloitte Consulting LLP, Chicago, IL

**Project:** State of California Dept. of Public Health - MCLS

**City and State:** Sacramento, CA

**Supervisor Name:** Stephen Lee

**Contact Information:** Available on request

**Job Title:** Engagement Lead and Project Manager

**Dates of Employment:** April 2017 – Present

**Job Responsibilities:**

- Lead for day to day project activities and for overall Project delivery
- Project Manager and owner of project status reports and communications / escalations.
- Managed resources and budget. Identified needs for issue and risk escalation and manage the escalation process
- Lead for Project Management meetings with key stakeholders and executives.
- Led the team in creation and refinement of Release Plan and alignment of plan with Business objectives and value realization
- Led Production Deployment planning and rollout activities
- Created Velocity and burndown charts to enable visibility on project progress
- Pega/BPM and Integration SME
- Drove Testing activities and created the approach for testing, Triage, Defects management and resolution
- Worked with overall Deloitte lead to provide project delivery per Resource plan, within timeline and budget.
- 

**Project:** HSBC

**City and State:** London, UK

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Manager

**Dates of Employment:** January 2017 – March 2017

**Job Responsibilities:**

- BPM SME for a global workflow platform rationalization and cost cutting initiative
- Coordination with Deloitte teams across UK, US and South Africa
- Assessed current state and identified gaps and pain points in use of workflow and BPM technologies, architecture and operating model across global regions
- Established the scope and components of IT Strategy and created platform Hypotheses
- Created Future State Architecture artefacts – Reference Architecture, Conceptual Architecture (functional and integration), Guiding Principles, and project Decision Tree
- Aligned recommendations with overall Bank strategy. Addressed new technology capabilities such as Dynamic Case Management, Cognitive BPM and IoT.

**Project:** King & Spalding LLP

**City and State:** Atlanta, GA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Manager

**Dates of Employment:** October 2016 – December 2016

**Job Responsibilities:**

- Led a team to establish IT Strategy and recommendations for Enterprise Architecture
- Worked directly with IT leadership; CIO and Immediate reports
- Focus Areas: Document Management System (DMS), Enterprise Microsoft Licensing, Collaboration, Communication, Mobility, Cloud transformation and IT Operating Model.
- Established business context, performed current state assessment, gap analysis, and created future state recommendations
- Created a 2 year roadmap highlighting quick wins and long term initiatives
- Performed high level assessment of leading DMS vendors across various dimensions

**Project:** Health Care Services Corporation

**City and State:** Chicago, IL

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Manager

**Dates of Employment:** June 2016– September 2016

**Job Responsibilities:**

- Lead for the Technology Architecture work stream, to help re-platform system for Provider and Network master data.
- Recommended an approach for process improvement and optimization using BPM and Case Management technologies.
- Performed high level assessment of IT capabilities and drove series of activities to enable decision making by client leadership.
- Decomposed business requirements into Architectural themes and needs.
- Led working sessions to drive and define the application and Integration architecture.

- Drove solution for an Integrated workflow for orchestration across multiple systems using Dynamic Case Management in Salesforce.com, and middleware platforms.
- Advised team in the selection of candidate technologies for architecture building blocks.
- Defined a POC plan to help finalize candidate technologies for implementation.

**Project:** 7 Eleven Inc.

**City and State:** Dallas, TX

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Manager

**Dates of Employment:** November 2014 –March 2016

**Job Responsibilities:**

- Lead for the Program Integration Architecture and BPM Architecture – owned and managed key deliverables in a multi-vendor environment for the client's Accounting Systems Transformation program (Basic Design phase).
- Lead for the Architecture Review Board – responsible for planning, review, communications, driving sessions, managing action items.
- Program Architecture – Supported the client's Enterprise Architect and created processes and approach for the following – Architecture Governance, Architecture Review Board, Program Roadmap, and deliverable standardization.
- Documented current state, envisioned and drove future and interim state architectures.
- Owner of a critical decision item to determine a tool for addressing portal, workflow and dashboard needs of the program.
- Drove Integration approach and working sessions with multiple program partners.
- Created the approach for requirements decomposition workshops and drove meetings for partner assignments.
- Reviewed and scored each partner deliverable on an iterative basis. Drove deliverables to completion in basic design phase by providing guidance, best practices and approach to all partners.

**Project:** Ryder System Inc.

**City and State:** Miami, FL

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior Consultant

**Dates of Employment:** December 2013 – October 2014

**Job Responsibilities:**

- Provided Advisory and Strategic support at both project and portfolio level for a 5 year/\$125 million program, in the transformation of client's IT organization from legacy systems to Appian BPM platform (SDLC, processes, methods and tools).
- Led the IT Capital Planning and Project Dependency analysis effort to plan for Architectural needs in the new fiscal year and created an initiative Roadmap for the new fiscal year.
- Conducted an analysis of the Client's QA (Testing) standards, tools and processes and created a strategy to address immediate QA needs of in-flight projects.
- Worked with Enterprise Architecture team and Data Architects in order to put together a plan for Master Data Management (MDM) and BPM Data Residency.
- Performed cross-BU assessment of Release Management, Production Deployment, Configuration Management and Production Support processes and created plan and approach for improvement and standardization.
- Worked with IT Leadership in creating a 5 year portfolio funding plan for strategic projects in the organization's largest BU.
- Standardized tools, templates and deliverables across various project disciplines and across all phases of SDLC.
- Introduced agile development concepts and the adoption of Agile Scrum to BPM implementation projects.

**Project:** Exelon Corporation

**City and State:** Chicago, IL

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior Consultant

**Dates of Employment:** August 2013 – November 2013

**Job Responsibilities:**

- Owned and managed the work stream to perform Application Rationalization for 2 core Business Units (BUs).

- Partnered with Senior Management (Directors) in the BUs to drive the various stages of the work stream in order to identify upcoming Fiscal Year Quick-Wins Assessments (Project and Team Kick-off, Brainstorming, Idea identification, Analysis and Assessments (Costs and Savings)).
- Conducted data analysis to enable internal socialization of the effort and to enable cross BU analysis by Deloitte.
- Helped other work streams in performing the assessment for various Application Portfolio Management (APM) tools in order to select a vendor for the client.
- Created a future state data flow diagram to represent various interactions between tools/system for APM related data.

**Project:** BMO Harris Bank

**City and State:** Chicago, IL

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior Process Consultant

**Dates of Employment:** April 2013 – July 2013

**Job Responsibilities:**

- Performed a Current State assessment of the enterprise-wide technology processes by conducting stakeholder interviews and by analyzing existing process documentation. (Process areas: Governance, Production, Project Management, Middleware Best Practices and Reporting.)
- Performed assessment from a Governance perspective (ITIL). Created Current State process flows and narratives.
- Created a Technology and Process landscape diagram to represent current state processes under scope.
- Identified pain points in existing processes, conducted Future State workshops with stakeholders and Senior Management and presented short and long term recommendations in order to draft Future State processes.
- Created an Executive Summary and an Implementation Roadmap spanning People, Process and Technology, based on consolidated findings from the team

**Employer:** Rulesware, LLC

**Project:** Veteran Affairs

**City and State:** Austin, TX

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** BPM Lead Architect

**Dates of Employment:** February 2012 – February 2013

**Job Responsibilities:**

- Mapped the business process and created a technical solution for the transformation of client's legacy Invoice Payment Processing System to Pegasystems' PRPC BPM platform by adapting to the US Prompt Payment Act. The project was implemented for the client's Financial Services Center.
- Lead for a team of 7 resources while working directly with senior management and key stakeholders.
- Designed scalable processes to support 1.5 million invoices (~\$12bn in value) per year across 300 centers in the United States.
- Conducted interviews and elaboration sessions with the client, created the Process flows, Enterprise Class Structure, High Level Design, Interaction model, User Management, Data validation and User Interfaces design.
- Collaborated with other Pega teams to create reusable enterprise components.
- Worked directly with Lead Business Architect to build a plan to deliver within project timeline and budget.
- Managed team assignments based on skill level of resources.
- Coordinated with Business Unit and Contracting Unit for weekly and monthly project status updates.
- Made Release presentations to senior management and key stakeholders.
- Trained and Mentored team to implement project by adhering to Best Practices and Center Of Excellence standards.
- Played an internal marketing role to expand employer footprint at client.
- Developed a plan for SDLC methodology and executed project using Agile Scrum.

**Project:** Charles Schwab Corporation

**City and State:** San Francisco, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** BPM Senior Architect

**Dates of Employment:** July 2011 – January 2012

**Job Responsibilities:**

- Owned the main work package for Project #1 – created a strategy to implement within project timeline.
- Created Design Document, Process flows, Interaction model, Sequence diagrams, Reporting and Analytics.
- Played key role in all SDLC phases (Inception, Elaboration, Construction and Transition) using Agile methodology.
- Integration with EJB Services, collaboration with business analysts, SME's and technical teams.
- Played an internal marketing role to expand employer footprint at client.
- Transitioned to client resources and off-shore team in order to bring them up to speed for post deployment maintenance.
- Attended a 2 week Agile training program.
- Mentored client resources on BPM and Pegasystems' PRPC technology and Best Practices

**Project:** State Farm Insurance

**City and State:** Bloomington, IL

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** BPM Architect

**Dates of Employment:** December 2009 – June 2011

**Job Responsibilities:**

- Coordinated with Business Analysts, Product Owner and Scrum Master for requirements and implementation in an Agile Scrum driven project to provide underwriting status for 'Life' policies.
- Participated in all phases of SDLC (from Inception to Transition.)
- Designed and developed process flows, UI elements, business rules and created data dictionary.
- Designed and developed framework for functionalities within the application.
- Integration with multiple systems, both internal and external (using web services and EJB integrations).

- Managed the offshore team, task prioritization and assignment.
- Improved performance by using PRPC Performance tools (PAL, Log Analyzer, and Alerts).
- Agent Disbursements project – Analyzed business processes within application for underwriters and determined specific business rules to be reused by work stream for Client Agents.
- Risk Advisor project – post implementation support, defect tracking and bug fixing. Created process flows for documentation and mapped the complete process

**Project:** ETL Infrastructure Services Ltd

**City and State:** Chennai, India

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Information Services Executive

**Dates of Employment:** November 2005 – December 2007

**Job Responsibilities:**

- Market Research, Risk Assessment, Coordination (Finance, Commercial and Project Management teams).
- Worked directly with Senior Management and C-Level Executives to create Business Development unit for Company's penetration into markets across various states for commercial, retail and hospitality real estate projects.
- Gathered and documented User and Functional requirements for Hotel Management Software modules.
- Achieved up to 40% cost savings in the analysis and selection of technology to support various business units.
- Created corporate presentations and coordinated with Auditors and Lawyers for company's listing in the Alternative Investment Market, London Stock Exchange.
- Created dashboard reports that enabled decision making within the Strategy team

**Professional Accomplishments**

- Certified Project Management Professional (PMP) - PMI
- Certified System Architect
- Certified Scrum Master
- TOGAF 9 foundation

## **Education**

- Masters in Management Information Systems
- Bachelor of Engineering – Computer Science

## **Lead System Architect**

**Niranjan Sahu**

### **Personal Information**

**Name:** Niranjan Sahu

**Work Address:** 980 9<sup>th</sup> Street, Suite 1600, Sacramento, CA 95814

**Phone Numbers:**

[REDACTED]

### **Objective**

As a Lead System Architect, my objective is to deliver the proper configuration of the Pega project under my control, assist more junior resources, and communicate with the COE so that best practices and procedures are being followed.

### **Summary of Qualifications**

Analytical and driven Technical Lead Architect with over 17 years of experience in enhancing IT operations and delivering creative IT solutions. Through well-developed expertise in project management, technical delivery, and leadership Niranjan provides process improvement recommendations to the customers he serves. Niranjan is experienced in designing and developing applications, using SDLC tools, crafting test strategies, and has expert level knowledge in the Business Process Management tool Pega PRPC. He is an enthusiastic leader with exceptional communication skills that he utilizes to direct teams through all phases of the project lifecycle, effectively manage resources and formulates strategic plans to achieve business goals.

### **Employment History/Experience**

**Employer:** Stratosphere Technical Consulting, Sacramento, CA

**Project:** ELLFS

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead System Architect

**Dates of Employment:** June 2017 – Present

### **Job Responsibilities:**

- Lead a team of developers to develop a licensing application for the California Department of Public Health.

- Pega 7, Pega for Government, and CLG on a JBoss/WIndows stack.
- Configured the full Pega stack from data integration to user interface.

**Project:** BB&T

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Aug 2012 – June 2017

**Job Responsibilities:**

- Support all stages of technical projects, from conceptualization to delivery, applying insight to identify requirements, monitor milestones and confirm end product meets quality expectations
- Optimized application support model achieving 99.9% application availability for the end users
- Upgrade Pega platform from PRPC 5.3 to PRPC 7.1
- Facilitates trainings for internal employees as well as enterprise wide training for Pega PRPC
- Serves as part of BB&T Pega COE and Cognizant North America Pega COE teams by mentoring project teams and demonstrating leadership on technical and business operations
- Analyzes complex business requirements to craft physical solution design documents
- Drives development of various programs using web technologies In addition to guiding teams on designing test plans Including test cases
- Develops and deploys applications through the use of cases, stages, configuration flows, flow actions, class structures decision tables, decision trees, declarative expressions, harness and section rules
- Reports on project status weekly to management and stakeholders as well as elevates risks and issues in a timely manner for resolutions.
- 

**Project:** Allere LLC

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** March 2009 – Aug 2012

**Job Responsibilities:**

- Designed the architecture for the portal application without the ability to leverage an existing Pega framework
- Diffused and resolved issues with service level agreements
- Developed production support portals
- Utilized localization to display screens to end user in English or Spanish
- Assisted in extensive tuning of the application for optimized performance
- Contributed to architecture design and development of Internet Application Composer components
- Integrated Portal application to mobile ready mHealth application
- Specialized in developing and altering Pega Summary Reports and other out of the box reports

**Project: Independent Blue Cross (IBC)**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Oct 2008 – Feb 2009

**Job Responsibilities:**

- Designed application architecture in collaboration with a team
- Provided mentorship for Pega COE team
- Planned and designed HIGHMARK claims integration with IBC
- Provided mentorship to team in the areas of designing screens, developing customized reports, and applying integrations
- Worked with team to estimate flows and second phase of IQ Plus
- Served as a lead resource in approval of flow and business case reviews
- Supported Pega performance improvement initiatives

**Project: MasterCard**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Jan 2008 – Oct 2008

**Job Responsibilities:**

- Involved in development of XP system which is a customized version of Pega system Smart Dispute Framework

- Collaborated with four teams to decide the architecture for the framework
- Estimated flows and phases of the project
- Provided mentorship to team in the areas of designing screens, developing customized reports, and applying Integrations
- Designed and developed all Oracle views needed for Pega reports
- Supported Quality Assurance and User Acceptance Team to ensure product delivered met business requirements
- Supported Pega performance improvement initiatives

**Project: AIG**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** May 2006 – Dec 2007

**Job Responsibilities:**

- Designed application screens using RAD 7.0 and IBM JSF framework
- Analyzed and reported on critical path items and resource loading using Microsoft Project
- Guided and Implemented integration of CCD system with other AIG systems
- Facilitated weekly risk and mitigation reporting to leadership team
- Prepared and finalized SOW
- Collaborated with Business Analyst to collect requirements from the business team
- Reviewed project deliverables to provide adherence to project schedule
- Designed logical and physical models for new subject areas and maintenance of existing model
- Served on procurement team for software and hardware procurements

**Project: Computerized Operating Recovery Environment**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** March 2004- May 2006

**Job Responsibilities:**

- Developed understanding of Pega and BPM process
- Designed Pega screen, customized reports, and integration using File Listener

- Supported LDAP Integration with Pega Application
- Involved in migration from PRPC 4.2 to PRPC 5.1
- Analyzed and reported on critical path items and resource loading using Microsoft Project
- Collaborated with Business Analyst to collect requirements from the business team
- Designed logical and physical models for new subject areas and maintenance of existing model
- Managed Quality Assurance team

**Project: Litigation Systems**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** June 2002 – Feb 2004

**Job Responsibilities:**

- Provided project planning, scope planning, resource allocation and co-ordination, time management, and identified risks
- Provided production support
- Facilitated weekly risk and mitigation reporting to leadership team
- Reviewed project deliverables to provide adherence to project schedule

**Project: Integrated Recovery Systems**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Oct 2000 – Jun 2002

**Job Responsibilities:**

- Developed screens using Java, HTML, Java Script and DB2 Mainframe
- Interacted with end users and performed requirements gathering for maintenance and enhancements
- Resolved defects, tested, and deployed resolutions to production
- Created ad-hoc reports as requested by the user group
- Tested and provided support for implementation of the system

**Project: Strategic Suite of Systems (S3CoreWeb)**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** April 2000 – Oct 2000

**Job Responsibilities:**

- Involved in system design
- Created database and database objects such as tables and stored procedures
- Developed screens using Java, Servlets, Beans and Sybase
- Participated in prototype development
- Tested and provided support for implementation of the system

**Project: American Integrated Recovery Operations (AIRO)**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Sept 1999 – March 2000

**Job Responsibilities:**

- Developed AIRO screens using Java, HTML, and Java Script
- Tested and provided support for implementation of the system
- Performed data migration from MS Access to Mainframe using Hummingbird Genlo

**Professional Accomplishments**

- Pega Certified Lead System Architect

**Education**

- MS Computer Architecture, College of Engineering & Technology, 1999.
- BS Computer Science, Khallikote Autonomous College, 1996.

## Lead Business Architect

**LaTonya Jeffery**

### Personal Information

**Name:** LaTonya Jeffery

**Work Address:** 1400 K Street, Suite 315, Sacramento, CA 95814

**Phone Numbers:**

[REDACTED]

### Objective

As a Lead Business Architect, my objective is to accurately capture the needs of the end users so that their work can be completed in as efficient a manner as possible. As a Scrum Master, I also seek to guide the project team through the full implementation lifecycle, from Inception to delivery.

### Summary of Qualifications

- 20+ years of proficiency participating in all phases of software development, including project management, architectural design, application design, coding, quality assurance and user acceptance testing, implementation support, and end-user training
- 18+ years supporting Pegasystems' technology
- Accomplished in the implementation of Scrum, RUP, and SmartBPM (RUP Based) software development methodologies
- Skilled in defining governance for the Business Architect role in a Pegasystems' PRPC Center of Excellence
- Extensive experience facilitating meetings to elicit and analyze the business need
- Skilled in documenting business and functional requirements using user stories, use cases, process flow diagrams, and storyboards
- Proficient in the use of the Direct Capture of Objectives (DCO) application requirements documentation tool suite
- Efficient in project management tasks such as coordinating, communicating, and managing work assignments, as well as, determining the project scope, managing client expectations, and mitigating project risk
- Effective in producing project management deliverables such as work breakdown structures, project plans, project communication plans, project schedules, project change requests, project acceptance forms, issues and risk logs, weekly status reports and surveys

- Proficient in drafting methodology, use case, and user story training material and best practices/user guides
- Effective in conducting methodology, use case, and user story training for Business Architects/Analysts
- Effective communicator and coach to business, analysts, and development teams at all levels of an organization.

## **Employment History/Experience**

**Employer:** Stratosphere Technical Consulting, Sacramento, CA

**Project: CDPH - NOLA**

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Architect

**Dates of Employment:** May 2017 – January 2019

**Job Responsibilities:**

- Lead the business analysis and requirements for the NOLA licensing application.
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**Project: JELD-WEN**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Architect

**Dates of Employment:** Jan 2016 – Sept 2016

**Job Responsibilities:**

The Customer Engagement Center application is designed to provide an application for the Customer Service (pre-sale) Representative, Customer Care (post-sale) Representative, and Field Service Technician to have one application to assist all JELD-WEN customers. The purpose is to give the JELD-WEN employees a 360 degree view of the customer, all of the products that the customer has purchased or had quoted, and all interactions that JELD-WEN has had with the customer.

- Facilitated sessions with project subject matter experts to elicit system functional and non-functional requirements.
- Documented the To-Be process using process flow diagrams.
- Documented system functional requirements with use cases and storyboards.

- Utilized the Pegasystems' Direct Capture of Objective (DCO) tool to capture steps and stages, and assisted the Lead System Architect in designing the flow.

- Project: NRI/7Eleven**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** June 2015 – Aug 2015

**Job Responsibilities:**

The Merchandising - Fresh Food Transformation application provides 7Eleven a centralized location for document specifications and cost structures. It enables the management, communication, and audit of specifications, cost/usage, vendor performance/reliability, and compliance with labelling regulations.

- Mentored Business Architects in the use the Pegasystems' Direct Capture of Objective (DCO) toolset and process.
- Facilitated sessions with project subject matter experts to elicit business and system functional and non-functional requirements.
- Documented system functional requirements with use cases.
- Entered the use cases into PRPC using the DCO toolset.

- Project: Nissan NA**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** April 2015 – May 2015

**Job Responsibilities:**

Consumer Buy Back is an application designed to help Nissan track the number of warranty repairs made to a vehicle, in order for Nissan to determine whether the Lemon Law of a particular state would require them to purchase the automobile back from the consumer.

- Participated in defining the as-is business process and determining the to-be business process.
- Facilitated sessions with project subject matter experts to elicit business and system functional and non-functional requirements.
- Documented system functional requirements with use cases.
- Entered the use cases into PRPC, and created an Application Profile document using the DCO toolset.

• **Project: CIGNA**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Jan 2015 – April 2015

**Job Responsibilities:**

Orchestration End-to-End and Common Pends is an application designed to be the framework for building all pend processes for the Cigna Accelerated Integrated Market Solution.

- Mentored Business Architects in the use of the Scrum methodology using Pega Rules Process Commander (PRPC) and the Pegasystems' Direct Capture of Objective (DCO) toolset and process.
- Developed and documented a best practices/user guide for writing User Stories to aid in the documentation of system functional requirements.
- Facilitated sessions with project subject matter experts to elicit business and system functional and non-functional requirements.
- Documented system functional requirements with user stories and storyboards.
- Entered the user stories into PRPC, and created an Application Profile using the DCO.
- Triaged testing defects to facilitate communication between the development team and the UAT testers.

•  
**Project: Bank of America**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Aug 2013 – Dec 2014

**Job Responsibilities:**

Home Equity End-to-End Automation, ML 13-11 (Special Forbearance), and Trial Payment Tracking are applications to enable the bank to evaluate borrowers for a loan modification pertaining their mortgage loan. The purposes of these applications are to automate the determination of the treatment plan to be offered to the borrower, and to monitor the payments received.

- Documented a Unified Software Development Methodology to offer a repeatable and adaptable process for developing software using workflow applications.

- Developed and documented training material for writing System Use Cases to aid in the documentation of functional system requirements.
- Trained System Analysts, Testing, and Project Management employees in writing, reading, and understanding System Use Cases.
- Documented a testing triage process to facilitate communication between the system analysts, development team and the UAT testers.
- Participated in defining the as-is business process and determining the to-be business process.
- Documented the new business processes using process flow diagrams and state diagrams.
- Facilitated sessions with project subject matter experts to elicit business and system functional and non-functional requirements.
- Documented system functional requirements with use cases and storyboards.
- Created a Discovery Map, and entered use cases into PRPC.
- Created an Application Profile using the Pegasystems' Direct Capture of Objective (DCO) toolset.

**Project: Charles Schwab**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Nov 2012 – April 2013

**Job Responsibilities:**

The WIres application for Charles Schwab is an application to enable Advisors and End Clients to submit Wire transactions. The purpose of the application is to automate decision making procedures currently performed by Charles Schwab call center representatives.

- Participated in the design of an Advisor servicing applications using Pegasystems' PRPC 6.1.
- Offered guidance in defining governance for use of the Scrum Framework at Charles Schwab.
- Created an Application Profile (for Scrum) using Pegasystems' Direct Capture of Objectives (DCO).
- Participated in defining the as-is business process and determining the to-be business process for the PRPC portion of the WIres solution.
- Documented the new business process using a Discovery Map.
- Documented business and functional requirements with user stories.

- Created an Application Profile using the Pegasystems' Direct Capture of Objective (DCO) toolset.

**Project: US Department of Veterans Affairs**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** May 2012 – June 2012

**Job Responsibilities:**

The Pre-Authorized Claims project provides the ability to process electronic or paper claims from receipt to payment without manual intervention.

- Trained Business Architects in the use of Direct Capture of Objectives (DCO)
- Trained Business Architects and the business partners in the use of the SmartBPM methodology using DCO.

**Project: AMEX**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Aug 2011 – May 2012

**Job Responsibilities:**

The Card Member Servicing Portal for American Express was the portal application for processing all card member needs, such as card replacement and card payments.

- Offered guidance in defining the Business Architect role for the Pegasystems PRPC Center of Excellence.
- Developed standards and templates for project documentation.
- Participated in the design of two Card Member servicing applications using Pegasystems' PRPC 6.1.
- Trained Business Architects in the use of the SmartBPM methodology using DCO.
- Participated in defining the as-is business process and determining the to-be business process.
- Facilitated sessions with project subject matter experts to elicit business and functional requirements.
- Documented business and functional requirements with use cases.
- Taught Business Architects to create a low level Application Profile (for SmartBPM) using Pegasystems' Direct Capture of Objectives (DCO).

- Offered guidance in defining governance for use of the Scrum Framework at American Express.
- Served as a Scrum Coach to guide multiple Scrum teams in the use of Scrum and DCO.
- Participated in the design of three Card Member servicing applications using Pegasystems' PRPC 6.2.
- Trained Business Architects in the use of the Scrum methodology using DCO.
- Documented business and functional requirements with user stories.
- Taught Business Architects to create a high level Application Profile (for Scrum) using Pegasystems' Direct Capture of Objectives (DCO).
- Assisted in exporting user stories from the Application Profiler and importing them into the Project Management Framework.
- Interviewed Business Architects seeking employment with American Express.

**Project: BCBS TN**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Dec 2010 – Aug 2011

**Job Responsibilities:**

The Medical Review application for Blue Cross Blue Shield of Tennessee was an application created to support the process of reviewing medical claims for potential provider fraud.

- Offered guidance in defining the Business Architect role for the Pegasystems PRPC Center of Excellence.
- Developed standards and templates for project documentation.
- Participated in the design of three Medicare applications using Pegasystems' PRPC 6.1.
- Trained Business Architects in the use of the SmartBPM methodology using DCO.
- Participated in defining the as-is business process and determining the to-be business process.
- Documented the new process using process flow diagrams.
- Facilitated sessions with project subject matter experts to elicit business and functional requirements.
- Documented business and functional requirements with use cases.
- Participated in creating the Application Profile using Pegasystems' Direct Capture of Objectives (DCO).

- Triaged testing defects to facilitate communication between the development team and the UAT testers.
- Coordinated the user acceptance testing (UAT) process.
- Managed work assignments for UAT testers using Pegasystems' Project Management Framework (PMF).
- Created the UAT test plan.
- Served as a liaison between the user acceptance testing team and technology.
- Created test scripts for user acceptance testing.
- Assigned UAT defects to the development team members to be fixed.
- Reported UAT status, defects, and issues to the project team.
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**Project: Bank of America**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** March 2010 – Dec 2010

Job Responsibilities:

The Bill Pay application at Bank of America was an application created to enable the call center agents to assist Bank of America customers with the process of paying their bills electronically.

- Participated in designing a bill pay application using Pegasystems' PRPC 5.4 and the Smart Dispute Framework.
- Participated in the design and documentation effort using a combination of the Pegasystems' SmartBPM software development methodology and the Bank of America Waterfall methodology.
- Participated in defining the as-is business process and determining the to-be business process.
- Facilitated JAD sessions with the business partners to elicit reporting and change control data requirements.
- Updated the project use cases with new requirements for change controls.
- Maintained the project data dictionary.
- Served as a liaison between the business and technology teams.
- Coordinated a team of business users for a preliminary System Integrated Testing process.

- Assigned test scripts and managed the testing process.
- Attended meeting to report the testing progress to management.
- Triaged testing defects to facilitate communication between the development team and the SIT and UAT testers.

**Project: AMEX**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Sep 2009 – Feb 2010

**Job Responsibilities:**

The Disputes application at American Express enables the call center agents to process transactions for customers calling to dispute a credit card charge.

- Participated in designing a dispute application using Pegasystems' PRPC 5.4 and the Smart Dispute Framework.
- Lead the design and documentation effort using a combination of the Pegasystems' SmartBPM software development methodology and the American Express Waterfall methodology.
- Participated in defining the as-is business process and determining the to-be business process.
- Facilitated JAD sessions with the business partners to elicit business and functional requirements.
- Documented business and functional requirements with use cases and process flow diagrams.
- Served as a liaison between the business and technology teams.
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**Project: Optum Rx**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Jan 2009 – Sept 2009

**Job Responsibilities:**

The Prior Authorization system was an application created to determine whether the patients insurance would cover the prescription claim being processed.

- Participated in designing an application for claims prior authorization using Pegasystems' PRPC 5.4 and CPM for Health Care.

- Lead the design and documentation effort using a combination of the Pegasystems' SmartBPM software development methodology and the Prescription Solutions Waterfall methodology.
- Participated in defining the as-Is business process and determining the to-be business process.
- Documented the new business process using process flow diagrams.
- Facilitated JAD sessions with project subject matter experts to elicit business and functional requirements.
- Documented business and functional requirements with use cases.
- Participated in creating the Application Profile using Pegasystems' Direct Capture of Objectives (DCO).
- Assisted the development team in translating functional use cases into technical design documents.
- Trained testing defects to facilitate communication between the development team and the SIT and UAT testers.
- Coordinated the preparation of user acceptance testing (UAT) for the business team.
- Created the UAT test plan.
- Served as a liaison between the user acceptance testing team and technology.
- Created test scripts for user acceptance testing.
- Assigned UAT defects to the development team members to be fixed.
- Reported UAT defects and issues to the project team.

**Project: Prudential**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Nov 2008 – Jan 2009

**Job Responsibilities:**

Service Automation project is to deploy a modern case-based workflow tool across client services, re-engineer processes to align with participant and sponsor expectations, track end-to-end processes for reporting and status, and provide data for on-going continuous improvement.

- Lead a small team in the design and development of global application processes for the Service Automation application.

- Participated in defining the as-is business process and determining the to-be business process.
- Conduct meetings with project business partners to elicit, analyze, and document the business use cases.
- Work with the technical team and the Pegasystems' deployment team to convert business use cases to functional use cases for the development.
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**Project: First Community Bancshares**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Feb 2008 – June 2008

**Job Responsibilities:**

The Customer Service applications were created as a suite of products to support teller functions in servicing bank customers.

- As part of the Project Management Office, participated in developing the methodology, templates, and policies for managing projects.
- Managed multiple medium and high complexity projects that are part of the company's strategic plan.
- Created, implemented, and managed project schedules.
- Partnered with vendor Project Managers to coordinate, communicate, and manage work assignments performed by both the company project team and the vendor project team.
- Tracked and reported project status for senior management and project stakeholders.
- Identified and reported project risk and offer recommendations for risk mitigation.
- Assisted in determining the project scope, and manage client expectations to ensure that project solutions satisfy the client and the company's objectives while staying within the scope of the project.
- Produced work breakdown structures, project plans, project communication plans, project schedules, project change requests, project acceptance forms, Issues and risk logs, weekly status reports and surveys as part of the project management deliverables.
- Captured Lessons Learned to enhance the process of managing future projects.

**Project: AMEX**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Jan 2004 – April 2005

**Job Responsibilities:**

The Case Management project was a workflow project to route transactions between departments for processing.

- Developed an Enterprise Case Management System.
- Offered suggestions for system process improvements.
- Conducted regular meetings with project business owners to elicit, analyze, and document the business data needs.
- Managed work assignments for data architects.
- Conducted regular data team meetings to coach, motivate, and provide feedback on team member performance.
- Provided weekly status reports to Project Manager.
- Documented application business data requirements using an IBM/Pegasystems' Software Development Methodology.
- Created process flow documents and a data dictionary to record the business data requirements.
- Designed the application user interface, and implemented the user interface using PegaREACH and HTML.
- Configured the application using the PegaWORKS workflow management engine.
- Along with the Interface Architect, designed inbound and outbound XMLs for MQ Messaging with external systems.

**Project: BCBS RI**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** July 2003 – Oct 2003

**Job Responsibilities:**

The Add Infant project was created to allow the call center agents to add an infant to the patient's current insurance policy.

- Developed web-based, call center, Customer Relationship Management applications for clients such as Uniprise, Blue Cross Blue Shield of Rhode Island, and Cobalt.
- Developed the application user interfaces using PegaREACH and HTML.
- Configured the applications using the PegaWORKS workflow management engine.
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**Project: Ameriprise**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Dates of Employment:** Nov 2002 – June 2003

**Job Responsibilities:**

The Advisor Messaging application was created a web-based application for Financial Advisors to assist customers and collect customer data.

- Developed an Advisor Messaging system for customer relationship management.
- Advised Business and IT Directors and Vice Presidents in determining the software development needs for a call center, web-based application.
- Participated strategic project meetings to evaluate the usability of potential software.
- Lead the design and development effort for the User Interface and Brokerage section of the application.
- Conducted interviews with project business owners to assess the business needs and determine software requirements for the User Interface and Brokerage sections of the application.
- Created requirements documents such as process flow diagrams, use cases, a data dictionary, entity relationship diagrams, and storyboards (user interface designs).
- Coordinated and managed work assignments for project development resources, for off-shore and on-shore development teams.
- Created an application prototype to aid in the assessment of software usability.
- Created the logical and physical database design for the Advisor Messaging system, and implemented interfaces between the messaging system and an Oracle database using PegaCONNECT.
- Designed inbound and outbound XMLs for MQ Messaging with external systems.
- Designed the application user interface, and implemented the user interface using PegaREACH and HTML.
- Configured the application using the PegaWORKS workflow management engine.
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**Project: PNC**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Project Manager

**Dates of Employment:** Jan 2002 – July 2002

**Job Responsibilities:**

- Created a call center, web-based application prototype to aid in the assessment of software usability.
- Produced and managed project schedule.
- Conducted weekly team meetings to coach, motivate, and provide feedback on team performance.
- Provided weekly progress reports to Department Director.
- Served as a liaison between the business owners and development team.
- Worked with business owners to elicit, analyze, and document business requirements for a call center, web-based application.
- Created the process flow documentation, data dictionary, and user interface design for the application.
- As part of the development team, coded the application using a CRM workflow language called Pegasystems.
- Configured the applications using the PegaWORKS workflow management engine.
- Designed and developed the application user interfaces using PegaREACH and HTML.

**Project: FiServe**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Project Coordinator

**Dates of Employment:** Feb 2001 – Aug 2001

**Job Responsibilities:**

- Configured the applications using the PegaWORKS workflow management engine.
- Developed the application user interfaces using PegaREACH.
- Developed data retrieves using various interfaces; GMSG, GRDB & GEXT PegaCONNECT features.
- Created reports in many user views using Pegasystems' reporting features & ReachLists.
- Conducted regular meetings with project business owners to elicit, analyze, and document the business and functional requirements for system enhancements.
- Created requirements documents such as process flow diagrams, use cases and storyboards (user interface designs).

**Project: Citibank**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Consultant

**Dates of Employment:** Oct 2000 – Jan 2001

**Job Responsibilities:**

- Configured the applications using the PegaWORKS workflow management engine.
- Developed the application user interfaces using PegaREACH.
- Developed data retrieves using various Interfaces; GMSG, GRDB & GEXT PegaCONNECT features.
- Created reports in many user views using Pegasystems' reporting features & ReachLists.
- Conducted regular meetings with project business owners to elicit, analyze, and document the business and functional requirements for system enhancements.
- Created requirements documents such as process flow diagrams, use cases and storyboards (user interface designs).
- 

**Project: Sears**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Developer

**Dates of Employment:** Oct 1998 – Oct 2000

**Job Responsibilities:**

- Developed a Service Order and Sales Lead, Customer Relationship Management application.
- Advised Business and IT Directors and Vice Presidents in determining project software development needs.
- Aided corporate managers in determining and documenting the architectural design for a corporate universal call center application.
- Participated, as a Scribe, in JAD sessions to design specifications for different modules within a 3-tier call center application.
- Documented application business requirements using the Sears Software Development Methodology.
- Conducted regular meetings with project business owners to elicit, analyze, and document the business needs and determine software requirements.

- Offered suggestions for business process improvements.
- Designed the application user interface, and implemented the user interface using PegaREACH.
- Configured the application using the PegaWORKS workflow management engine.
- Created the logical and physical data model and data dictionary for the application; implemented interfaces between the application and an Informix database using PegaCONNECT.
- Worked as part of a team to develop a procedure for running integration test on the application.
- Wrote unit test cases for testing the application.
- Wrote an application users guide that was accepted to support the national training program for Sears.

### **Professional Accomplishments**

- Pega Certified Business Architect
- Certified Scrum Master

### **Education**

- Bachelor of Business Administration (MIS), Baylor University, 1996 Senior System Architect

## **Steven Sutton**

### **Personal Information**

**Name:** Steven Sutton

**Work Address:** 1400 K Street, Suite 315, Sacramento, CA 95814

**Phone Numbers:**

[REDACTED]

### **Objective**

As a Senior Business Architect, my objective is to ensure that the needs of the end users are accurately captured so that their work can be completed in as efficient a manner as possible. As a Scrum Master, I also seek to guide the project team through the full implementation lifecycle, from Inception to delivery.

### **Summary of Qualifications**

Steve is a Senior Business Architect with over 10 years of experience working with and implementing solutions in areas such as Pega Business Process Management (BPM), SharePoint, Financial Tracking and Reporting Tools. He is a Certified Scrum Master and Pega Business Architect with over 7 years of business process analysis, reporting and document management improvement. Steve served as a Business Architect or Scrum Master on 8 Pega Projects over a three-and-a-half-year period and has vast experience with the Pega Certification and Licensing for Government Framework. His technical expertise and experience in providing oversight to standards and reuse analysis make Steve a wonderful addition to any team.

### **Employment History/Experience**

**Employer:** Stratosphere Technical Consulting, Sacramento, CA

**Project:** California Department of Public Health - COE / UPM/ PERL

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Architect

**Dates of Employment:** March 2017 – Present

### **Job Responsibilities:**

- Provided business architecture services for common components in the enterprise of CDPH.

- Assisted in the planning and coordination of PERL/UPM go-live activities.

**Project: STATE OF MAINE**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** Feb 2016 – March 2017

**Job Responsibilities:**

- Consult with State agencies and executives from all levels of State government on existing and streamlined business processes
- Complete high level operational walkthroughs to understand business process
- Estimate the time and resources necessary to complete stated business goals and strategies
- Provide budget estimates to agencies
- Align project resources to ensure optimal effort
- Work with State agencies to complete business case, goals and return on investment expectations
- Provide training to Product Owners and other stakeholders on Agile processes and frameworks
- Guide and enable Business Analysts to deliver consistent user stories
- Ensure business process identified enables delivery of goals and objectives
- Work closely with Senior System Architect as necessary to ensure optimal architecture is achieved and within scope of Center of Excellence objectives
- Help to guide reuse of existing architecture
- Provide feedback on user experience of applications in production and development
- Facilitate grooming sessions with developers, testers and business analysts
- Guide agile teams in understanding and application of Scrum framework
- Monitor and aid in improving team performance while striving for a self-organizing team
- Review/review user stories, determine project budget, acting Scrum Master, ensure completion within time and budget.

**Project: Purchasing Maine**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** Sept 2016 – Jan 2017

**Job Responsibilities:**

- PurchasingMaine allows State of Maine departments and agencies submit procurement information to the Division of Purchases for review and approval of their contracting documents. Once complete attachments are sent to Fortis for storage and retention

**Project: Travel**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** Aug 2016 – Jan 2017

**Job Responsibilities:**

- Replacement of paper based travel reimbursements and approvals. Once approval is attained attachments and information is utilized to create a MainePays case for approval and ultimately processing in the State of Maine's general ledger "Advantage".

**Project: Maine Pesticides Enforcement Regulation System**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** July 2016 – Sept 2016

**Job Responsibilities:**

- Pesticide licensing, enforcement, and exam management for internal and external users on Certification and Licensing for Government v 7.1.

**Project: Department of Labor – Constituent Messaging Portal**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** Oct 2016 – March 2017

**Job Responsibilities:**

- Captures constituent requests for follow-up to questions, issues or complaints

**Project: Department of Marine Resources – LEEDS**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Business Process Analyst

**Dates of Employment:** Nov 2016 – Dec 2016

**Job Responsibilities:**

- Enhancements to the system to account for regulatory and legislative changes that were to take effect regarding payments and tag updates on Certification and Licensing for Government v 7.1

**Project: Center of Excellence: Business Architect**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Business Architect

**Dates of Employment:** May 2013 – Feb 2016

**Job Responsibilities:**

- Work with agencies to streamline and automate business processes
- Partner with business and technical teams to develop high quality deliverables across all phases of the project
- Identify and define: Process flows, User stories, User acceptance testing procedures
- Collaborate with subject matter experts across the state to ensure business functions match customer requirements
- Provide strategic direction and governance as the department's SharePoint site collection administrator
- Collaborate with subject matter experts across the state to ensure business functions match customer requirements
- Provide enablement to Product Owners and Subject Matter Experts
- Provide strategic direction and governance as the department's SharePoint site collection administrator

**Project: Office of the State Treasurer – PayMaine**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Business Architect

**Dates of Employment:** Nov 2015 – June 2016

**Job Responsibilities:**

- Payment application offering agencies the opportunity to accept electronic payments through a front-end user interface. Applications can also connect to the payment engine via SOAP or REST Integrations to process payments for any State of Maine application
- 

**Project:** **MainePays**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Business Architect

**Dates of Employment:** Feb 2014 – Sept 2016

**Job Responsibilities:**

- MainePays automates the electronic approval process and data entry into the State of Maine's general ledger "Advantage". Work is routed through approval and cash management approval levels. All Images are attached into the State of Maine's Fortis document management system.

**Project:** **Department of Labor – Blocked Claims**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Business Archlitect

**Dates of Employment:** Dec 2013 – March 2014

**Job Responsibilities:**

- Provide review and resolution to unemployment insurance claims that are awaiting review and further action
- 

**Project:** **Department of Administrative and Financial Services**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Accountant, Management and Financial Analyst

**Dates of Employment:** July 2008 – May 2013

**Job Responsibilities:**

- Provide strategic direction and governance as the department's SharePoint site collection administrator
- Responsible for setting up new sites, lists and libraries to help users move to a new environment for storing documents and information
- Automate business processes through forms, databases, and workflows
- Train users on SharePoint and other financial reports and resources
- Create standard reports for internal service center users and customers within the Department of Health and Human Services
- Create processes and forms to allow users to track grant budgets in a flexible manner and compare with actual expenditures
- Create forms and database to capture work programs in a more efficient and automated manner
- Train users on financial reports and other resources
- Prepare financial status reports for federal agencies.
- Reconcile grant draws and expenses.
- Ensure proper coding of invoices and follow through accounts payable processes.
- Answer fiscal questions from program administrators.
- Develop and initiate business and internal accounting controls.
- Prepare and enter journal entries as needed to ensure accurate information.

**Project: CITIGROUP**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Fund Accountant

**Dates of Employment:** Jan 2006 – July 2008

**Job Responsibilities:**

- Accurate and timely entry of trade information from clients
- Assists others in processing more difficult transactions and resolving more difficult discrepancies.
- Generates and/or reviews standard reports either daily/weekly/monthly/annually for clients, auditors, firm management.
- Analysis and reconciliation of trade information
- Reconciles cash or securities' holding discrepancies

- Clear and effective communication with team, other departments and external clients to maintain accurate records
- Suggest improvements to programs and workflow to increase efficiency

### **Professional Accomplishments**

- Pega Certified Business Architect
- Pega Certified System Architect

### **Education**

- Master of Business Administration, Husson University, 2014
- Master of Science In Business, Husson University, 2003
- Bachelor of Science In Accounting, Husson University, 2003

## Senior Business Architect

**John Bonner**

### Personal Information

**Name:** John Bonner

**Work Address:** 1400 K Street, Suite 315, Sacramento, CA 95814

#### Phone Numbers:

Work: 817-715-9409



### Objective

Developing and maintaining business capabilities of the enterprise in line with the corporate strategy as well as contributing to the business strategy and plans. For each step of the business transformation plan, business architects contribute in development of a blueprint of the enterprise in order to promote a common understanding of the organization and alignment of strategic objectives with tactical demands.

### Summary of Qualifications

- Certified Pega Business Architect Experienced in performing large Pega implementations with Fortune 500 companies and large government agencies.
- Over five years of business analysis and project management with three years focused on resolving business and technical issues on IT projects.
- Over three years of CRM and BPM process analysis and system implementation
- More than five years' experience working as a thought innovator for large corporations.
- Credentials/Certifications – Pega CBA, Pega CPBA, Pega DCO Architect
- Created enablement program for new Pega Partners for Pega Certified Business Architect exam and Pega DCO Architect Exam.

### Employment History/Experience

**Employer:** Stratosphere Technical Consulting (Subcontracting)

**Project:** State of California Dept. of Public Health - MCLS

**Supervisor Name:** Justin Hissong

**Contact Information:** [justin.hissong@stratospheretc.com](mailto:justin.hissong@stratospheretc.com)

**Job Title:** Lead Business Architect

**Dates of Employment:** February 2017 – Present

**Job Responsibilities:**

Worked with internal stakeholders to come up with overall vision and design of project implementation. Managed team in capturing requirements in Pega PMF, including organizing epics and goals. Performed sprint planning and sprint review activities in accordance with Scrum methodology.

**Employer:** Rulesware LLC

**Project:** Process Bridge/Benefit Quality Automation System/Product Manufacturing Specification Management System

**Supervisor Name:** Scott Hemphill

**Contact Information:** scott.hemphill@rulesware.com

**Job Title:** Senior Business Architect

**Dates of Employment:** December 2014 – February 2017

**Job Responsibilities:**

Responsible for working with internal stakeholder to create detailed business requirements. Generated and presented design documents to gain project alignment. Created specification template to for use on multiple ongoing projects with client. Collaborated with project leads to create time and cost estimates and generate project schedule based on time and resource allocation.

**Employer:** Cooper Consulting

**Project:** Product Specification Management System/Claims Processing and Adjudication

**Job Title:** Senior Business Architect/PRPC Certified Business Architect.

**Dates of Employment:** December 2012 – December 2014

**Job Responsibilities:**

Responsible for facilitating DCO sessions for multiple processes using real time updates within Pega 7.0 and 6.3. Collaborated with client to develop a road map for future projects prioritizing based on benefit, effort and resources. Enabled a new PRPC Client on the PRPC process and application, through one on one mentoring and documentation review. Generated draft flow and mock user interfaces to communicate potential designs to various stakeholders. Directed client team of seven on documentation and importation of existing requirements into PRPC. Served as liaison between Subject Matter Experts and IT Support Services in conflict resolution. Managed and documented action items and key issues to resolution. Generated traceability reports in Share Point to track existing business requirements to new PRPC use cases.

**Employer:** CarMax Auto Services Inc.

**Job Title:** Financial Analyst

**Dates of Employment:** June 2011 – October 2012

**Job Responsibilities:**

Responsible for creating metrics to track payroll processing, analyzing trends, and presented information to senior management. Enhanced payroll department efficiency by tracking and streamlining process, eliminating 5 hours of waste time a week. Consulted with the compensation department to reevaluate 2010 and 2011 bonus distribution and presented recommendations to the Controller.

**Professional Accomplishments**

- Certified Pega Business Architect
- Pega Direct Capture of Objectives Architect

**Education**

Oklahoma State University, Bachelors of Science Business Administration- Finance

## **Senior System Architect**

**Jeremiah Moody**

### **Personal Information**

**Name:** Jeremiah Moody

**Work Address:** 1400 K Street, Suite 315, Sacramento, CA 95814

**Phone Numbers:**



### **Objective**

As a Senior System Architect, my objective is to Implement Pega applications using sound development principles under the direction of a Lead System Architect and the auspices of the Center of Excellence.

### **Summary of Qualifications**

Pega Certified Senior Systems Architect and Web Developer whose qualifications include a degree in computer technology and over 14 years of web and enterprise application development in total. Jeremiah has over 7 years of experience in working with Pega to implement guardrail compliant Enterprise wide software solutions using various versions and frameworks of Pega, including Pega Integration with legacy systems and services. Proven track record of implementing standards based user friendly front ends using HTML, CSS, JavaScript, and various other web technologies.

### **Employment History/Experience**

**Employer:** Stratosphere Technical Consulting, Sacramento, CA

**Project:** California Department of Public Health - NOLA

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** July 2017 – January 2019

### **Job Responsibilities:**

- Provided core design and development of a statewide licensing application.
- Pega 7, Pega for Government, and CLG on a JBoss/Windows stack.
- Configured the full Pega stack from data integration to user interface.

**Project: State of Maine- Office of Information Technology**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** Sept 2015 – Aug 2017

**Job Responsibilities:**

- Supports and maintains multiple highly complex licensing applications
- Led efforts of Department of Marine Resources to identify, define, develop and deploy enhancements to current licensing application
- Application administration and performance tuning
- 

**Project: WEX**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** March 2013 – Sept 2015

**Job Responsibilities:**

- Provided daily support and maintenance for enterprise applications
- Supported multiple distributed java web based applications, web services, and databases
- Primary support for WEXOnline and Distributor applications including on call support
- Served as lead for development of new client portal and web site branding for roll out
- 

**Project: Medco Health Solutions (Express Scripts)**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Lead Architect

**Dates of Employment:** March 2009 – Dec 2013

**Job Responsibilities:**

- Lead Architect/UI Lead in the design and development of a priority 1 n-tier application to comply with government regulations surrounding the cost and reimbursement of pharmaceuticals

- Utilized the contextual Inquiry and process modeling methods to complete the web based application which decreased processing time of claims while increasing claim throughput by 170%
- Developed a scalable secure method of identifying and contacting Medicare/Medicaid customers in accordance with government regulations
- Assisted in the initial rollout of Pega as part of the Medco BPM Center of Excellence
- Assisted in establishing the Medco Enterprise Architecture and class structure
- Defined and implemented Medco Best Practices resulting in code reusability, development cost savings, and applications that are easily maintained

### **Professional Accomplishments**

- Pega Certified Senior System Architect

### **Education**

- AS Computer Science, SMCC, 2003

## Rohit Sakhamuri

### Personal Information

**Name:** Rohit Sakhamuri

**Work Address:** 1400 K Street, Suite 315, Sacramento, CA 95814

**Phone Numbers:**  
[REDACTED]

### Objective

As a Senior System Architect, my objective is to implement Pega applications using sound development principles under the direction of a Lead System Architect and the auspices of the Center of Excellence.

### Summary of Qualifications

Pega Certified Senior System Architect with 7 years of experience in the design and implementation of Pega applications, with specific expertise in the Certification and Licensing domain. Proven experience in team leadership within an Agile/Scrum environment on Pega 7 and the Pega Project Management Framework (PMF). I have been deeply involved in the Pega for Government and the Certification and Licensing Foundations for the past four years, beginning with a Pesticides Licensing and Enforcement project at the State of Maine and more recently with the State of California's Manufactured Cannabis Licensing program.

### Employment History/Experience

**Employer:** Stratosphere Technical Consulting, Sacramento, CA

**Project:** California Manufactured Cannabis Licensing System (MCLS)

**City and State:** Sacramento, CA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** March 2017 – January 2019

### Job Responsibilities:

- SSA for the development of the Manufactured Cannabis application.
- Served as licensing expert for the team.
- Implemented functionality across the platform for high profile project.

**Project:** State of Maine

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** Dec 2014 – May 2016

**Job Responsibilities:**

- Technical team leadership across multiple sprints.
- Requirements analysis; story planning and estimation.
- Data, class, and process modeling.
- Implemented SOAP, FTPS, LDAP, and other integration services.
- Developed core components of business logic and user experience.
- Implemented process design and integration strategy.
- Configured complex work flows, agents, and SLA rules.
- Performed Unit and Integration testing.

**Project: Patient Advocate Foundation**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** Oct 2014 – Dec 2014

**Job Responsibilities:**

- Leveraged the Pega CPM-HC framework.
- Managed off-shore team activities.
- Designed core functionality to meet business requirements.
- Developed components of core business logic and user interface.
- Implemented the process design and external integration points.
- Configured work flows, agents and SLA rules.
- Unit and Integration testing.

**Project: Project: Standard and Poor's**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior System Architect

**Dates of Employment:** Sept 2011 – Sept 2014

**Job Responsibilities:** Multiple projects

Credit Estimates:

- Provided accurate user story estimations.
- Provided analysis and detailed design based on the requirements.
- Developed core components of business logic and the user experience.
- Configured Processes, Activities, Decision Rules, and Validations.
- Implemented the user interface design using Harnesses, Flow actions, and Sections.

Ratings Process Manager:

- Provided accurate user story estimations.
- Provided analysis and detailed design based on the requirements.
- Developed core components of business logic and the user experience.
- Configured Processes, Activities, Decision Rules, and Validations.
- Implemented the user interface design using Harnesses, Flow actions, and Sections.
- Configured Integrations using Connect-SOAP and Connect-SQL.
- Configured complex work flows, agents, and SLA rules.
- Performed unit and integration testing.
- Managed application deployment.
- Provided release knowledge transfer and post-production support

Rating Request Online:

- Developed core components of business logic and the user experience.
- Configured Processes, Activities, Decision Rules, and Validations.
- Implemented the user interface design using Harnesses, Flow actions, and Sections.
- Configured integrations using Connect-Java, Connect-SOAP, and Connect-SQL.
- Managed database to create and update table structures.
- Implemented strategic performance improvements

**Project: Alliance Leicester**

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** System Architect

**Dates of Employment:** Jan 2009 – Aug 2011

**Job Responsibilities:** Multiple Projects

AL-Engine:

- Implemented the user interface design using Harnesses, Flow Actions, and Sections.
- Implemented decision and declarative rules.
- Configured Connect-SQL for external database integration.
- Developed and unit tested specified modules.
- Configured Processes, Activities, and Flows.

AMI:

- Implemented decision and declarative rules.
- Implemented the user interface design using Harnesses, Flow Actions, and Sections..
- Creation of Activities and steps for Implementing Core Business Logic
- Created validation rules to implement business logic validation.
- Created Rule-Connect-SQL

Disaster Management Information System :

- Performed application testing on specified use cases.
- Used Design Patterns for efficient implementation of user customization between the user interface and the application logic.
- Designed and Implemented the administrative module for the application

**Professional Accomplishments**

- Certified Senior System Architect
- Certified System Architect.

**Education**

- Bachelor of Technology in Computer Science and Engineering, JNTU, Hyderabad

## Saumya Sahai

### Personal Information

**Name:** Saumya Sahai

**Work Address:** 100 Kimball Drive, Parsippany, NJ 07054

**Phone Numbers:**

[REDACTED]

### Objective

As a Senior System Architect, my objective is to implement complex use cases and business processes on the Pega platform, and utilize my Pega expertise to provide leadership in technical design, development, operational and support activities.

### Summary of Qualifications

Saumya is an astute planner and a leader with exemplary communication skills, client relationship management, analytical and organizational skills. She has experience in using the Application Express (Pega 7 Express) and Application Accelerator tool to quickly create and prototype a starter application for experimentation, demonstration, and learning purposes. She has experience in complete Software Development Life Cycle (SDLC) involving Analysis, Design, Development, Integration, Maintenance, Debugging, Reporting, Unit Testing and Production Support of Software Applications in client server environment, Object Orient Technology and Web based applications. She has experience in analyzing the client requirements & documenting them into User stories / BRD documents. She has expertise in various Pega Frameworks like: Customer Service Management, Care Management, Utilization and Disease Management. She also has expertise in debugging application issues using Tracer, Clipboard, SMA, PLA, Pega Logs, Rules Inspector, and AES. She also has extensive experience working on Business Requirement Analysis for various versions of Pega (starting from v6 up to v7.3).

### Employment History/Experience

**Employer:** Deloitte Consulting LLP, Parsippany, NJ

**Project:** Everest Reinsurance

**City and State:** Bridgewater, NJ

**Supervisor Name:** Nitin Shirke

**Contact Information:** Available on request

**Job Title:** Consultant

**Dates of Employment:** April 2019 - Present

**Job Responsibilities:**

Worked as the Integration BA Lead for the Guidewire Implementation of Underwriting Management and Policy Center for Everest Reinsurance. Managed the requirements for all downstream Integrations with the UM application and managed Sprint delivery for Release 2.

**Employer:** Deloitte Consulting LLP, Parsippany, NJ

**Project:** Nautilus Indemnity Limited - Claims Implementation

**City and State:** Parsippany, NJ

**Supervisor Name:** Shirley Samtani

**Contact Information:** Available on request

**Job Title:** Consultant

**Dates of Employment:** January 2018 - Present

**Job Responsibilities:**

- Working as a Technology Consultant on defining process flows for the application
- Understanding Client requirements and elaborating the user stories to fit to client expectations from the new platform for each Sprint.
- Worked on implementing Complex User Interface requirements and ensuring a great user experience.
- Responsible for driving the testing team activities and overseeing the test case creation and execution for each Sprint

**Project:** WellCare Health Plans

**City and State:** Tampa, Florida

**Supervisor Name:** Rohit Upadhyay

**Contact Information:** Available on request

**Job Title:** Pega Consultant

**Dates of Employment:** October 2016 - December 2017

**Job Responsibilities:**

- Work on Requirement Analysis and documentation of user stories In Agile Manager
- Leading user stories from end to end and conducting product owner reviews.

- Design Process flows which depict end-to-end functionality and are used as inputs by the development team to build the actual business process flows in Pega
- Used Case management stages feature of Pega 7 to build the application structure
- Worked on implementing Complex User Interface requirements and ensuring a great end user experience.
- Work with Data Architects on Database schema designing by Identifying all the relevant fields in the application on different UI Screens
- Work with the Lead Architects on analyzing performance issues in the existing application using performance tools: PAL, PLA and DB Tracer and documenting the requirements for implementing the same.
- Defining Requirements for extensive reporting to be utilized by client for re-organizing the work strategy of their Application users.
- Worked on building extract to Data warehouse rules in Pega and designing table structure in ODS
- Running Preflight reports at the end of each sprint to foresee any issues with the work built so far and ensure any such guardrail warnings/issues are fixed in the most appropriate way.

**Project:** Utilization Management

**City and State:** Pittsburgh, PA

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Team Lead

**Dates of Employment:** December 2015– October 2016

**Job Responsibilities:**

- Led a team of 5 people for developing user stories from end to end and Product Owner Review for approvals.
- Demonstrations to Engagement Leads for early feedback.
- Experience in defining business rules to be implemented using PRPC components like Decision Tables, Decision Trees, Declarative Expressions, Data Transforms, and Agents etc.
- Expertise in designing User Interfaces, Screen Layouts and developing Screen mock-ups.

- Worked on building a branched team application in Pega 7.1 to ensure that different teams can work together in the same environment and build Access groups that refer to this branched team application.
- Work with COE for architectural design and process flow review.

**Project:** Customer Service Desktop – Phase II

**City and State:** Bangalore, India

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior Systems Architect

**Dates of Employment:** December 2012 –December 2015

**Job Responsibilities:**

- Worked directly with the Client Application users to understand and document requirements
- Provide estimations on the Requirements using client build estimation trackers and tools.
- Worked on redesigning of application components with the client LSAs.
- Managing Pega bi-quarterly corporate releases from Accenture perspective
- Coordinating the effort between the Performance and regression testing teams for having a smooth application rollout.
- Work with users directly on Issues faced by them on a day to day basis while the application stabilizes in production.
- Maintain the branched team application and access groups for the team application in PRPC 6.3
- Maintain ruleset security throughout the application.
- Interpretation of complex flow shapes of business scenarios for better understanding
- Developed PRPC Declarative rules and Decision tables for determining the status of accounts.
- Extensively used Rule Inspector, Clipboard and Tracer for debugging of processes developed.
- Using PAL for performing tuning of the application during development time and for the performance issue reported after production

**Project:** Customer Service Desktop – Phase I

**City and State:** Bangalore, India

**Supervisor Name:** Available on request

**Contact Information:** Available on request

**Job Title:** Senior Software Engineer

**Dates of Employment:** September 2011 – November 2012

**Job Responsibilities:**

- Worked with Project Managers, Business Leads, and Business Analysts to define business requirements for designing, testing, and building Pega systems solutions to meet those requirements. Understand various components of the system configuration and applied intelligence to the conversion issues
- Creating the functional design document of various Use Cases.
- Worked with different supporting teams like services & business to resolve the issues faced by team.
- Worked on http services & connector.
- Involved in designing the class structure.
- Estimating change requests and enhancements.
- Coordinating with performance test and system test teams to have smooth pass through of code.

**Professional Accomplishments**

- Pega Certified Senior System Architect
- Pega Certified System Architect

**Education**

Bachelor of Technology in Computer Science and Engineering

## **Quality Assurance Tester**

### **Mohammed S Doha**

#### **Personal Information**

**Work Address:** 901 International Pkwy Suite 100, Lake Mary, FL 32746

#### **Objective**

Mohammed focuses on bringing value to the customers with his wide experience on software testing field. His experience, expertise and technological knowledge on software testing field will help the team to deliver quality software in the competitive market. His previous experience will help him to work in any new environment and adjust quickly and be productive.

#### **Summary of Qualifications**

Mohammed has over seven years of experience in all aspects of Software Quality Assurance (QA) in the IT Industry including Banking, Health Insurance, Hospitality, BI Analytics and Restaurants applications. Mohammed is proficient in both Manual and Automated testing practices. He has strong knowledge of Software Development Methodologies including the Software Development Life Cycle (SDLC) Waterfall, Agile, Scrum models across many various projects. He is adept in creating Business based Functional Test Scenarios, Test Scripts and Traceability Matrix. Mohammed is experienced in conducting Manual and Automated System Integration Testing (SIT), End-to-End Testing, Functional Testing, Smoke Testing, Regression Testing and User Acceptance Testing. Mohammed has extensive knowledge on using Oracle tools such as Sequel \*Plus and Oracle SQL Developer to write and execute SQL Queries against Oracle Databases Management. Mohammed is well experienced in Test Management tools like HP Application Life Cycle (HP ALM), ALM Octane, Jira and Jama. He is skillful in using HP Unified Functional Testing (HP UFT) for automated Functional and Regression Testing. Mohammed has very good skill in Performance Testing methods and performance tools such as HP's LoadRunner. He has accomplished various tasks with his strong interpersonal skills which helped him to work in a collaborative environment as well as independently with minimal supervision.

#### **Employment History/Experience**

**Project:** California Department of Public Health: Pega Phase 5

**City and State:** Sacramento, California.

**Job Title:** Functional / Automation Tester

**Date of Employment:** 16 May 2019- Present

**Job Responsibilities:**

- Created Regression Test Suite for ELLFS Application with all access role.
- Wrote Test cases for the regression suite.
- Created automation scripts for regression test suite by using LoadRunner tool.
- Periodically run the automation scripts as part of regression test by using LoadRunner controller.
- Logged and retested and closed the defects.
- Carried out smoke test.
- Conducted demonstrations on automation scripts.

**Technical Environment:** LoadRunner, SQL Server Management Studio.

**Project:** Deloitte & Touche LLP's ("Deloitte"): Cortex Globalization Acceleration

**City and State:** Lake Mary, FL

**Job Title:** Performance Tester

**Dates of Employment:** 11 February 2019 – 22 March 2019

**Job Responsibilities:**

- Conducted performance testing on Cortex Application which included various functionalities of the application.
- Created VUgen Scripts using TrueClient protocol.
- Enhanced the scripts by adding various functionalities.
- Created manual scenarios on LoadRunner controller and ran the load test.
- Created Analysis Report by using LoadRunner Analysis component.
- **Technical Environment:** LoadRunner 12.6, TrueClient protocol, Kanban Board.

**Project:** NE-DMA (State Health Care Project)

**City and State:** Lake Mary, FL

**Job Title:** Quality Analyst.

**Dates of Employment:** 18 June 2018– 26 November 2018

**Job Responsibilities:**

- Worked closely with the BI engineers, DBA, systems engineers, and project manager to understand the requirements/User Stories

- Create scenarios and Test Cases based on User Stories in ALM Octane
- Validate the data between source and target following the mapping requirements and specifications
- Develop SQL queries for the data validation per Mapping Document and compare data with Cognos Dashboard
- Run Schema validation against the Mapping Document that includes Name of the tables, Number of columns, Name of Columns, Data Types and Length of the Data Types
- Validate metadata of Database, ETL and reporting components and objects.
- Logged defect and worked closely with the scrum team throughout the defect life cycle.
- Participated in daily Agile Scrum meeting, Triage meeting, Sprint review meeting and Retrospective meetings for better understanding the business requirement, software specification and development process flow at various stages.

**Technical Environment:** HIVE, DB2, DataStage, IBM Cognos, ALM Octane, UNIX, AGILE, SQL Developer, SharePoint, Microsoft, DB Visualizer, JIra, Mede Analytics, GIT Bash

**Project:** MES- HI Analytics (Medicaid Enterprise Systems - Health Interactive Analytics)

**City and State:** Lake Mary, FL

**Job Title:** Quality Analyst

**Dates of Employment:** 09 January 2018 – 17 June 2018

**Job Responsibilities:**

- Analyzed and wrote Test cases on Mede Analytics and Cognos Reports.
- Uploaded the Test cases and execute the test cases In HP ALM Octane
- Logged defect, retested defect closed the defect once it was fixed.
- Validated the Report format and data of Cognos Report with database.

**Technical Environment:** ALM Octane, Cognos Tool and MS SQL server.

**Project:** ImPact-PPM (State Health care Project.)

**City and State:** Lake Mary, FL

**Job Title:** QA Analyst

**Dates of Employment:** July 2017– October 2017

**Job Responsibilities:**

Worked for different modules in IE (Interfaces, Correspondence, Data collection and Benefit Issuance) for the project.

- Created Test data as per the different scenarios.
- Executed Test cases, validated the document and data.
- Performed Smoke Testing, Regression testing, End to End testing, Functional testing and Back End testing.
- Effectively used JAMA and JIRA tools for the test execution and logging defect.
- Reproduced and Logged the Defect by using Jira, worked closely with developers to resolve the issue.
- Widely used MS SQL server to validate the data.

Technical Environment: JAMA, JIRA, MS SQL server and SELENIUM IDE.

**Project:** POS-System (Point of sales System)

**City and State:** Orlando, FL

**Job Title:** QA Analyst

**Dates of Employment:** July 2013– December 2016

**Job Responsibilities:**

- Analyzed System Design Documents and Involved in the review discussion of Business Requirements.
- Designed and developed Test Scenario, Test cases and steps for various Business Services covering both positive and negative testing requirements
- Performed manual testing of Client-server and web-based applications and used HP ALM for test management.

- Extensively used SQL \*Plus and Oracle SQL Developer tools to access and manipulate Oracle 11G database and validated back-end testing.
- Performed Functional and Regression testing using UFT and extensively was involved in writing, executing, and enhancing script using various checkpoints.
- Participated in daily Agile Scrum meeting, Triage meeting, Sprint review meeting and Retrospective meetings for better understanding the business requirement, software specification and development process flow at various stages.
- Utilized HP Application Life Cycle Management(ALM) to track, report and manage defect through the test cycle
- Communicated with Application Developers, Project Manager and other Team members on Application testing status

**Project:** Telecommunication System

**City and State:** Lake Mary, FL

**Job Title:** QA Analyst

**Dates of Employment:** July 2011– May 2013

**Job Responsibilities:**

- Identified resources and activities required for each phase of testing to ensure testing needs are met.
- Executed test cases manually and updated test status accordingly using HP Quality center.
- Performed Functional, Negative, Smoke, System, Integration, Regression, UAT and performance Testing of Web and Client/server Application.
- Used HP Quality Center for requirement management, planning, scheduling, running tests, defect tracking and managing the defects.
- Performed Functional and Regression testing using QTP and extensively was involved in writing, executing, and enhancing script using various checkpoints.
- Identified testing methodology for load and stress testing based on business processes and analyzed the business requirements along with Product Manager.
- Enhanced VuGen Scripts by parameterizing the input test data to minimize data caching, unique constraint and data dependency issue.
- Inserted Rendezvous point into script to instruct Vusers to perform a specific task simultaneously.
- Inserted and configured manual correlation to handle dynamic data into the script including unique session value.

- Created manual and automated scenario using LR Controller, Setup Runtime settings, configured Load Generator and assigned number of Virtual Users.
- Configured Ramp UP, Ramp Down, and calculated proper duration of proposed load test.
- Administrated the Load Test and Analyze the test result using LR Analysis component to pin-point the bottle neck and reported to development team.
- Technical Environment: HP Quality Center (QC), QuickTest Professional (QTP), LoadRunner, .Net, Windows NT, SQL \*Plus, Java, MS Access, SQL server and Oracle.

### **Professional Accomplishments**

- Microsoft Certified Professional (MCP)-2001
- AWS- Developer Associate Certification- 2018

### **Education**

- Bachelor of Arts.

### **Ruchika Nain**

#### **Personal Information**

**Name:** Ruchika Nain

**Work Address:** 310 E Rivulon Blvd, Gilbert, AZ - 85297

#### **Objective**

With experience in a wide range of technologies, Ruchika gives strong attention to detail and accuracy that brings value to the end user. Ruchika possesses sound knowledge of software development life cycle (SDLC), testing process and procedures. She has extensive knowledge of QA software testing lifecycle and development procedures. She has strong technical, analytical, and communication skills. She can communicate proficiently with strong problem solving and time management skills.

#### **Summary of Qualifications**

Ruchika is results-driven quality analyst with proven technology background supported by a blend of analytical and communication skills. She has experience working as a Quality Analyst in manual/automation testing in IT services projects within Life Insurance and

Healthcare sectors. As a QA, her responsibilities included creating test scripts, test conditions, test strategy, test plans, automation plan, end to end manual testing, test reporting and Requirement Traceability Matrix (RTM). Experience in testing web applications, System Integration (SIT), regression, smoke, functional and User Acceptance Testing (UAT). She is experienced with writing sql queries. In automation testing, she has experience in creating and executing test scripts in Selenium Web driver. She has experience in different SDLC methodologies like Agile Scrum, Kanban & Waterfall.

She has also worked as a BA in Life Insurance & Healthcare Industry. Her role & responsibilities included creating business requirements documents, user stories, functional design documents and user acceptance testing (UAT).

### **Employment History/Experience**

**Project:** California Department of Public Health

**City and State:** Sacramento, CA

**Job Title:** In-sprint Tester

**Dates of Employment:** June 2019 – Present

### **Job Responsibilities:**

- Responsible for In-sprint and Regression Testing. Primary tester for In-sprint testing for ELLFS application (Electronic Laboratory Licensing and Registration for Facilities) and other COE level applications (COE is more focused on ELLFS for now)
- Assisted in UAT of the ELLFS application and reviewed the UAT bugs with the business analyst and developers and provided the inputs
- Reviewed the production bugs with the team after the go-live and logged the valid bugs
- Responsible for maintaining the In-sprint testing activities at COE (Center of Excellence) level. Responsible for creating test scripts, performing functional testing, migrated data testing, Database testing, regression testing, exploratory testing & report bugs/issues, if found. Maintaining artifacts on SharePoint
- Responsible for providing the testing efforts for the in-sprint user stories and bugs. Work with the BA and Dev team to review the requirements/implementation to find out the impact of the change to provide the correct effort required for testing
- Responsible for working with the Business and Development team to review the acceptance criteria and report any gaps in requirements (if any found)
- Responsible for reporting the In-sprint testing status to the team
- Responsible for reviewing the bugs with the Product team and provide playback of the implementation (if required)

- Performed in-sprint and regression testing for PERL (Personnel Laboratory) and LRCC (Lead Related Construction Certificate) applications
- Working on Carlstar and FirstData to understand and test the payments (and payment process)
- Created an In-sprint testing process and presented it to the client

**Project:** Dell Technologies

**City and State:** Austin, TX

**Job Title:** Data Analyst

**Dates of Employment:** January 2019 – March 2019

**Job Responsibilities:**

- Gathered functional data requirements for the Logistics domain
- Identified the master data and worked with the stakeholders for defining the standards for the definitions
- Created the L2 and L3 process flows in visio and identified the roles for the data governance
- Created the logical data models by identifying the different systems in the project. Worked on created the solution architecture
- Assisted the team in defining and rationalizing the transaction and master data
- Created the business information model
- Handled the team for Logistics

**Project:** Sonora Quest Laboratories

**City and State:** Phoenix, AZ

**Job Title:** Test/Functional Lead

**Dates of Employment:** March 2018 – November 2018

**Job Responsibilities:**

- Responsible for analyzing the new requirements, analyzing the feasibility of the requirements, estimation, test strategizing, and execution and reporting bugs. Working as a Quality Analyst /Business Analyst In Healthcare domain.
- Responsible for the HIPAA compliance for the different healthcare clients.

- Interact with the business partners to better understand their objectives and recommend solutions based on research and introspection.
- Provided solution to a Healthcare client that led to decrease in customer issues by 40% and increased online patient appointments, online bill payment by 30%. Responsible for creating product roadmap strategies with the product
- Responsible for creating BRD's, Functional specification document, test strategies, test plan, test scenarios & test cases. Worked on creating mock-ups and prototypes to present the application flow to the clients.
- Performed functional testing, system integration testing and regression testing and responsible for creating requirements traceability metrics. Responsible for testing the analytics, API integrations for different clients.
- Responsible for assisting the product owners in UAT.
- Experience in writing SQL queries.
- Experience in manual and automation testing (worked on Selenium/QTP). Created test scripts for automation testing in Selenium Web driver.
- Work with the development team to explain the requirements and provided solution in case of requirement gaps.
- Worked in Agile Scrum and Kanban models.
- Experience in working on Rally/JIRA for creating user stories and test execution management
- Worked on Workamajig for creating user stories and project management.
- Worked with the Sales team on business proposals for prospect clients.
- Responsible for handling the testing team.
- Technical environment: Java, C#, SQL server

**Project:** Wealth Management Accelerator

**City and State:** Tysons, VA

**Job Title:** Quality Analyst/Functional Lead

**Dates of Employment:** February 2014 – January 2015

**Job Responsibilities:**

- Worked on analyzing the new requirements, analyzing the feasibility of the requirements, estimation, test strategizing, and execution and reporting bugs.
- Created BRD's, Functional specification document, test strategies, test plan, test scenarios & test cases.

- Performed unit testing, system integration testing and test validation.
- Experience in manual and automation testing (worked on Selenium/QTP)
- Worked as a Business Analyst /Product Owner in Life Insurance domain. Experience in annuities, term life insurance.
- Worked with the development team to explain the requirements and provided solution in case of requirement gaps.
- Experienced in java-based tool – VP/MS (Visual Product Modeling System) for deploying new insurance products and creating life insurance-based application for different clients.
- Designed user interface and implemented business rules using the new Accelerator tool (VPMS).
- Handled the production issues and provided solution for the same including the impact analysis and testing.
- Created the test data considering the ACORD standards and validations.
- Well-versed with a policy issue and different stages of a Life Insurance policy administration including the batch cycle runs and verification of the reports.
- Task allocation to the functional as well as the development team.
- Experience in working in the AGILE as well as waterfall methodologies.
- Worked with business partners to implement necessary quality controls.
- Worked on rally/JIRA for creating user stories and test execution management
- Technical Environment: Java, wMA, xml, SOAP UI

**Project:** New York Life Insurance

**City and State:** Tysons, VA

**Job Title:** Quality Analyst

**Dates of Employment:** Oct 2010 – February 2014

**Job Responsibilities:**

- Worked on analyzing the new requirements, analyzing the feasibility of the requirements and created BRD's, Functional specification document, test strategies, test plan, test scenarios & test cases.
- Performed unit testing, system integration testing and test validation.
- Experience in manual and automation testing (worked on Selenium)

- Worked as a Business Analyst /Product Owner in Life Insurance domain. Experience in annuities, term life insurance.
- Performed unit testing, system integration testing and test validation.
- Performed manual testing and reported the bugs

**Project:** Belk Inc

**City and State:** Charlotte, NC

**Job Title:** Analyst Programmer

**Dates of Employment:** July 2007 – Oct 2010

**Job Responsibilities:**

- Involved in the support/enhancement of the major Ecommerce applications - Belk.com, Bridal Registry, Bridal Kiosk, Scanner, Hanger and Signage.
- Involved with Code analysis and fixing the issues within the deadlines.
- Preparation of Unit Test Cases. Preparation & review of Resource files and Help files.
- Involved in Code Review & User Interface review.
- Preparation of XML file for the entire user interface messages.
- Technical Environment: Java Struts, Blue Martini framework
- 

**Professional Accomplishments**

- LOMA 280 & 290 certified
- HIPAA certified
- ITIL V4 Foundation certified

**Education**

- Bachelor of Engineering Degree in Computer Science

## **Hiba Habli**

### **Personal Information**

**Work Address:** 901 International Parkway, Lake Mary, FL 32746

### **Objective**

Detail oriented team player, proficient in the Quality Assurance Testing field. Bringing 4 years of experience of manual testing and solid knowledge of multiple test management tools like HP ALM, JIRA & JAMA. Hiba also has strong communication skills and is ITIL certified.

### **Summary of Qualifications**

Hiba has 4 years of experience in the QA field doing Functional, Regression, Smoke, Integration, Cross-Browser and Mobile testing. She has participated in all aspects of product testing, including test plan development, execution and delivery of well-tested solutions within tight timelines. Hiba has also been involved in UAT for multiple clients, she prepared UAT test cases, provided ongoing support to clients performing UAT and took part in defect triaging.

Furthermore, she has experience on various test/defect management tools including HP ALM, JIRA & JAMA. Hiba is also a certified ITIL practitioner having a good understanding of detailed practices for IT service management that focuses on aligning IT services with the needs of business. She also has a solid foundation in Waterfall and Agile methodologies.

### **Employment History/Experience**

**Project:** CDPH

**City and State:** Sacramento, CA

**Job Title:** Regression QA Tester

**Dates of Employment:** August 2019 – Present

#### **Job Responsibilities:**

- Performed regression testing in Test, Training and Staging environments for ELLFS, PERL and LRCC
- Supported in-sprint testing when needed
- Documented bugs in PEGA and worked closely with the developers to determine root cause
- Reviewed and attempted to recreate UAT bugs
- Prepared critical scenarios to be executed on Production after Deployment

- Participated in Go-Live weekend testing after deployment to Production environment
- Technical Environment: PEGA, FirstData, Microsoft Excel, Microsoft SQL Server Management Studio

**Project:** Cloud Engineering

**City and State:** Orlando, FL

**Job Title:** Test Lead

**Dates of Employment:** February 2019 – June 2019

**Job Responsibilities:**

- Worked closely with the development team and PM to determine an appropriate testing approach and plan that will provide enough coverage and deliver a fully tested product on time
- Took responsibility for identifying critical areas to be tested, developing test cases, and creating and maintaining a Regression suite
- Prepared resources/artifacts for UAT and participated in defect triaging sessions
- Oversaw and managed 1 offshore resource for QA
- Technical Environment: HP ALM, ServiceNow

**Project:** State Integrated Eligibility

**City and State:** Orlando, FL

**Job Title:** QA Tester

**Dates of Employment:** January 2018 – October 2018

**Job Responsibilities:**

- Validated and modified test cases to ensure they meet all acceptance criteria set by the client
- Designed, wrote and executed Functional, System Integration, End-to-End and Regression test cases
- Worked on Functional, Non-Functional, DB and UI validation
- Performed regular early morning smoke testing to ensure environment is ready for UAT testers
- Assisted UAT testers in understanding flows and carrying out testing activities

- Validated UAT defects to ensure validity and retested fixed UAT defects prior to handing it off back to the UAT testers
- Provided recommendations to team to improve efficiency and effectiveness
- Covered for team lead during absence, arranged daily KT sessions to team, distributed tasks and provided daily updates to managers and senior managers
- Technical Environment: JAMA, JIRA, Oracle SQL Developer, Excel
- 
- **Project:** Personal care and Dietary supplements Company

**City and State:** Orlando, FL

**Job Title:** QA Tester

**Dates of Employment:** January 2017 – November 2017

**Job Responsibilities:**

- Validated and modified test cases to ensure they meet all acceptance criteria set by the client
- Designed, wrote and executed functional and regression test cases
- Tracked defects and testing progress and generated complex excel reports to present to the client
- Technical Environment: SAP Hybris, SAP ECC, SAP CRM, Jira, Excel, Confluence
- 

**Project:** Financial and Insurance Company

**City and State:** Orlando, FL

**Job Title:** Exstream Developer

**Dates of Employment:** May 2016 – December 2016

**Job Responsibilities:**

- Worked with a team of developers to follow a standardized development practice to digitize over 200 documents with OpenText Exstream. Presented to client on a regular basis with development updates regarding new processes and implementation requirements
- Created complex VB Script functions and implemented them in developed templates to fetch and display data from the xml based on business requirements
- Developed very complex workarounds for features not supported by OpenText to meet client's business requirements for dynamic tables and dropdown fields in Interactive templates

- Designed interactive templates using empower elements in designer and tested it empower editor, by using fulfillment pub. Implemented custom validations for dates, check boxes, drop downs, text fields and table rows as per business requirement
- Created user guides to document custom solutions for training and reference purpose for the entire the team
- Technical Environment: OpenText Exstream 9.5(Design Manager, Designer), Empower Editor

**Project:** National Railroad Passenger Corporation

**City and State:** Orlando, FL

**Job Title:** QA Tester

**Dates of Employment:** July 2015 – February 2016

**Job Responsibilities:**

- Collaborated with different team members to generate test scenarios and execute test scripts
- Performed Manual Testing by playing role of an end user to test all features of the applications
- Performed Regression Testing by seeking to uncover new bugs that resulted after changes have been done, such as enhancements or patches
- Performed Fallback Testing to test contingency plan for reverting to old system incase of failure of new system

**Project:** Florida International University

**City and State:** Miami, FL

**Job Title:** Teaching Assistant

**Dates of Employment:** August 2013 – December 2014

**Job Responsibilities:**

- Assisted in teaching Java programming courses and prepared and ran weekly programming labs for undergraduate students with basic or no prior programming knowledge
- Ran labs for teaching Microsoft Excel, Word and PowerPoint

- Taught students to create reports and documents on Microsoft Word, along with using Word provided templates and advanced features

**Project:** BankMed

**City and State:** Beirut, Lebanon

**Job Title:** Trainee

**Dates of Employment:** December 2012 – March 2013

**Job Responsibilities:**

- Collaborated with a team of developers to design and develop Oracle databases in PLSQL
- Designed and produced periodic reports on card transactions using Crystal Reports
- Assisted in card management system enhancement and module development using PLSQL

**Professional Accomplishments**

- ITIL v3 Foundation Certification

**Education**

- Master of Science Computer Science
- Bachelor of Science Computer Science

## **QA Tester**

### **Mohammed Islam**

**Work Address:** 200 Sterling Parkway, Mechanicsburg, PA 17050

**Phone Numbers:**

[REDACTED]

### **Objective**

Senior Solution Specialist with an extensive experience of around 7+ years in Software Testing & QA. Solid experience in handling testing activities, defect management and good knowledge on working in Insurance and Public Sector domains.

## **Summary of Qualifications**

Mohammed is an experienced Quality Assurance Professional in the field of Information Technology. Mohammed has strong business process background in the public sector Industry of Integrated eligibility programs. His knowledge includes deep understanding of the application registration, data collection, eligibility rules processing and application final interface processing sub-processes within the integrated eligibility program. Mohammed has been extensively involved in creating and maintaining Test Data Matrix, Test Plans, Test Cases and Scripts, Test Reports and Dashboards, Backward and Forward Traceability Matrices and Requirement Gap Analysis Documents. Mohammed is proficient in testing of web based and client/server applications. Detailed experience in working with different databases such as Oracle, MS SQL Server, MS Access. His experience also includes performing various types of data related testing such as data migration validation, data integrity validation, data extraction validation, data conversion validation using SQL queries. Good knowledge both in Multi-tier and Cross-platform skills. Mohammed also brings with him detailed experience in Data Driven Testing, Batch Testing, Functional Testing, Regression Testing using various type of testing tools. He has also performed Black Box Testing, Unit Testing, Integration Testing, Sanity Testing, Smoke Testing, Fulfillment testing, Negative Testing, Performance Testing, Stress Testing and Load Testing, Usability Testing and User Acceptance Testing of Web-Based applications and Client/Server applications using various Tools. Mohammed has played key roles in Defect Management Process. He has been extensively involved in the defect tracking process - tracking defects, creating defect reports/dashboards using test management/defect tracking tools like Test Director, Quality Center and RQM. Mohammed has also facilitated the client deliverable process by documenting Test Deliverable Documents Using MS Office Tools - Word, Excel, and Power Point. Mohammed has facilitated team status meetings providing weekly/daily test execution and results status on behalf of his team. He is an excellent team player, coupled with good leadership qualities and good communication/ Interpersonal skills

## **Employment History/Experience**

**Employer:** Deloitte Consulting LLP

**Project:** CDPH - LRCCU

**City and State:** Mechanicsburg, PA

**Supervisor Name:** Jonathan Kalibbala

**Contact Information:** Available on request

**Job Title:** Test lead/ Sr. QA Analyst

**Dates of Employment:** 07/09/2018 - Present

Job Responsibilities:

- Worked as test lead/ Sr. QA Analyst in SCRUM Agile.  
Self-management of testing activities - Authored Test Cases, execute test cases and manage test cases in SharePoint.

- Defect management - Extensively involved in the defect tracking process – tracking defects, creating defects and reporting defects to development team using Pega project Management tool.
- Involved in sizing the user story for each sprints with developers and business analyst and making sure adequate time to cover creation of test cases and test execution for each of the sprint user story business requirements.
- Plan sprint testing with development team and prioritize user story testing base on the development.
- Reviewed Business Requirements with Lead Developer/business analyst to learn the functionality of the application.
- Attend SCRUM meetings to discuss the daily testing activities and user story Development.
- Report/Submit - daily test execution status report with user story passing/failing to project team.
- Conducted regression testing on new builds/versions deployed to UAT environment.
- Delivered test scenarios/cases for use in system test and UAT environments.

**Technical Environment:** PEGA & Pega Project Management tool

**Employer:** Deloitte Consulting LLP

**Project:** CICSO- AMP (ServiceNow)

**City and State:** Mechanicsburg, PA

**Supervisor Name:** Zubair Tramboo

**Contact Information:** Available on request

**Job Title:** Test lead/ Sr. QA Analyst

**Dates of Employment:** February 2017 – April 2018

Job Responsibilities:

- Prepares Test Cases based on the Business Requirements.
- Participated in requirement walkthroughs.
- Developed and executed test cases, test scenarios and followed-up defects using Rally.
- Used Rally for Requirement Traceability.
- Used Rally to write maintain test cases, create test sets, schedule test runs and to report bugs.
- Performed Smoke and Sanity testing.
- Performed Positive and Negative Testing.
- Performed Security testing and Backend testing manually.

- Conducted weekly planning meetings to develop enhancements and deliver information in a timely manner.
- Oversee and participate in the execution of the system test.
- Actively participated in enhancement meetings.

**Technical Environment:** ServiceNow and Rally

**Employer:** Deloitte Consulting LLP

**Project:** State of Virginia – (VACMS) IE

**City and State:** Harrisburg, PA

**Supervisor Name:** Bharti Shukla

**Contact Information:** Available on request

**Job Title:** Team Lead /Sr. QA Analyst

**Dates of Employment:** April 2013 - December 2017

Job Responsibilities:

- Developed Test Plans, Test Cases to test the Screens and workflows for Quality Assurance.
- Created test cases manually in MS Excel and exported them to the RQM.
- Created and managed system testing schedule.
- Provided test team status reports on weekly basis to the test manager.
- Tested manually as per the specification documents.
- Involved in validating SOAP XML specifications as per the standards.
- Functionally validated Web Services delivered in SOAP XML format as provided in specification document
- Reviewed extensive SQL Queries with complex multi-table joins and nested queries.
- Involved in reviewing complex SQL queries, views, functions and stored procedures and spotting issues before/during code migration.
- Performed Database testing using SQL queries
- Created and executed scripts manually for Functionality testing
- Conducted GUI, Backend, Data Driven and Security Testing.
- Conducted regression testing on new builds/versions.
- Arranged weekly team meeting to assign testing tasks and acquisition of status reports from individual team members.
- Tested the permissions by logging in as each responsibility for different user roles.
- Generated report on test case results with a good understanding of defect severity.
- Executed test script using Rational Quality Manager (RQM).
- Worked with Development team to articulate the defect clearly and ensure the errors are fixed and did not occur again.
- Tracked and logged Defect and Issue using defect tracking tool Rational Clear Quest

and document the defect with greatest level of detail based on the understanding of the application.

- Conducted regression testing, smoke testing and Sanity testing on new builds/versions.
- Delivered test scenarios/cases for use in system test and UAT environments
- Maintained Traceability Matrix to ensure test coverage of requirements; documented and re-verified all defects and test result and prepared Summary Report.
- Actively participated in daily defect triage and release meetings.
- Attended several walkthrough meeting with the track lead, Project Manager and developer/DBA and provided feedback accordingly.
- Extensively executed SQL queries to view successful transactions of data and validating data.
- Verify that applications meet specified performance requirements.
- Co-ordinated with Business Analyst during Planning and UAT Phase of the Project.

**Technical Environment:** Java, IBM Rational Clear quest, Rational Quality Manager, SQL Developer, MS Visio, SharePoint, SOAP UI, XML, MS Office, SnagIt.

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**Employer:** Deloitte Consulting LLP

**Project:** State of Virginia – (CommonHelp) Systems Integration

**City and State:** Camp Hill, PA

**Supervisor Name:** Ankur Virmani

**Contact Information:** Available on request

**Job Title:** Sr. QA Analyst

**Dates of Employment:** March 2012– March 2013

**Job Responsibilities:**

- Create Test related documents such as Test Scripts, Test Scenario, and Test Cases throughout the STLC.
- Attended SCRUM meetings to discuss the burned down chart
- Worked with business and SCRUM Masters to get the product demo.
- Review business requirements and performed Gap analysis to create test cases for various modules of Policy Admin. System.
- Validated requirements related to Claim Center to assist the business with their UAT testing.
- Performed different kinds of software application testing like Regression Testing, Smoke Testing, Performance testing, Front-end testing & Back-end testing, Integration testing, System testing, Compatibility testing etc.
- Managed different test matrix delivery challenges.
- Submit Inputs for Weekly Status Reports to the Onsite Test Coordinator.

- Submit weekly Test Execution Status Report.
- Participate in Weekly Review Meetings.
- Identify, Manage and Resolve the bugs/defects found during test execution through Defects module of IBM ClearQuest.
- Conducted Defect Management meetings with various project team members to discuss the bugs by their business severity.
- Participated in the Project Status and Test Status meeting to discuss and provide input regarding test related activities.

**Technical Environment:** Java, IBM Rational ClearQuest, IBM Rational Performance Tool, Soap UI, Share Point, MS Office.

### **Professional Accomplishments**

Successfully developed and implemented documentation for various type of testing (Regression Testing, Smoke Testing, Performance testing, Front-end testing & Back-end testing, Integration testing, System testing, Compatibility testing) and used it to train new system engineers.

### **Education**

- Bachelor In Engineering

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

This Information Privacy and Security Requirements Exhibit (For Non-HIPAA/HITECH Act Contracts) (hereinafter referred to as "this Exhibit") sets forth the information privacy and security requirements Contractor is obligated to follow with respect to all personal and confidential information (as defined herein) disclosed to Contractor, or collected, created, maintained, stored, transmitted or used by Contractor for or on behalf of the California Department of Public Health (hereinafter "CDPH"), pursuant to Contractor's agreement with CDPH. (Such personal and confidential information is referred to herein collectively as "CDPH PCI".) CDPH and Contractor desire to protect the privacy and provide for the security of CDPH PCI pursuant to this Exhibit and in compliance with state and federal laws applicable to the CDPH PCI.

- I. Order of Precedence: With respect to information privacy and security requirements for all CDPH PCI, the terms and conditions of this Exhibit shall take precedence over any conflicting terms or conditions set forth in any other part of the agreement between Contractor and CDPH, including Exhibit A (Scope of Work), all other exhibits and any other attachments, and shall prevail over any such conflicting terms or conditions.
- II. Effect on lower tier transactions: The terms of this Exhibit shall apply to all contracts, subcontracts, and subawards, and the information privacy and security requirements Contractor is obligated to follow with respect to CDPH PCI disclosed to Contractor, or collected, created, maintained, stored, transmitted or used by Contractor for or on behalf of CDPH, pursuant to Contractor's agreement with CDPH. When applicable the Contractor shall incorporate the relevant provisions of this Exhibit into each subcontract or subaward to its agents, subcontractors, or independent consultants.
- III. Definitions: For purposes of the agreement between Contractor and CDPH, including this Exhibit, the following definitions shall apply:

A. Breach:

"Breach" means:

1. the unauthorized acquisition, access, use, or disclosure of CDPH PCI in a manner which compromises the security, confidentiality or integrity of the information; or
2. the same as the definition of "breach of the security of the system" set forth in California Civil Code section 1798.29(f).

B. Confidential Information: "Confidential information" means information that:

1. does not meet the definition of "public records" set forth in California Government Code section 6252(e), or is exempt from disclosure under any of the provisions of Section 6250, et seq. of the California Government Code or any other applicable state or federal laws; or
2. is contained in documents, files, folders, books or records that are clearly labeled, marked or designated with the word "confidential" by CDPH.

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

- C. **Disclosure:** "Disclosure" means the release, transfer, provision of, access to, or divulging in any manner of information outside the entity holding the information.
- D. **PCI:** "PCI" means "personal information" and "confidential information" (as these terms are defined herein):
- E. **Personal Information:** "Personal information" means information, in any medium (paper, electronic, oral) that:
1. directly or indirectly collectively identifies or uniquely describes an individual; or
  2. could be used in combination with other information to indirectly identify or uniquely describe an individual, or link an individual to the other information; or
  3. meets the definition of "personal information" set forth in California Civil Code section 1798.3, subdivision (a) or
  4. is one of the data elements set forth in California Civil Code section 1798.29, subdivision (g)(1) or (g)(2); or
  5. meets the definition of "medical information" set forth in either California Civil Code section 1798.29, subdivision (h)(2) or California Civil Code section 56.05, subdivision (j); or
  6. meets the definition of "health insurance information" set forth in California Civil Code section 1798.29, subdivision (h)(3); or
  7. is protected from disclosure under applicable state or federal law.
- F. **Security Incident:** "Security Incident" means:
1. an attempted breach; or
  2. the attempted or successful unauthorized access or disclosure, modification or destruction of CDPH PCI, in violation of any state or federal law or in a manner not permitted under the agreement between Contractor and CDPH, including this Exhibit; or
  3. the attempted or successful modification or destruction of, or interference with, Contractor's system operations in an information technology system, that negatively impacts the confidentiality, availability or integrity of CDPH PCI; or
  4. any event that is reasonably believed to have compromised the confidentiality, integrity, or availability of an information asset, system, process, data storage, or transmission. Furthermore, an information security incident may also include an event that constitutes a violation or imminent threat of violation of information security policies or procedures, including acceptable use policies.
- G. **Use:** "Use" means the sharing, employment, application, utilization, examination, or analysis of information.

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

- IV. **Disclosure Restrictions:** The Contractor and its employees, agents, and subcontractors shall protect from unauthorized disclosure any CDPH PCI. The Contractor shall not disclose, except as otherwise specifically permitted by the agreement between Contractor and CDPH (including this Exhibit), any CDPH PCI to anyone other than CDPH personnel or programs without prior written authorization from the CDPH Program Contract Manager, except if disclosure is required by State or Federal law.
- V. **Use Restrictions:** The Contractor and its employees, agents, and subcontractors shall not use any CDPH PCI for any purpose other than performing the Contractor's obligations under its agreement with CDPH.
- VI. **Safeguards:** The Contractor shall implement administrative, physical, and technical safeguards that reasonably and appropriately protect the privacy, confidentiality, security, integrity, and availability of CDPH PCI, including electronic or computerized CDPH PCI. At each location where CDPH PCI exists under Contractor's control, the Contractor shall develop and maintain a written information privacy and security program that includes administrative, technical and physical safeguards appropriate to the size and complexity of the Contractor's operations and the nature and scope of its activities in performing its agreement with CDPH, including this Exhibit, and which incorporates the requirements of Section VII, Security, below. Contractor shall provide CDPH with Contractor's current and updated policies within five (5) business days of a request by CDPH for the policies.
- VII. **Security:** The Contractor shall take any and all steps reasonably necessary to ensure the continuous security of all computerized data systems containing CDPH PCI. These steps shall include, at a minimum, complying with all of the data system security precautions listed in the Contractor Data Security Standards set forth in Attachment 1 to this Exhibit.
- VIII. **Security Officer:** At each place where CDPH PCI is located,, the Contractor shall designate a Security Officer to oversee its compliance with this Exhibit and to communicate with CDPH on matters concerning this Exhibit.
- IX. **Training:** The Contractor shall provide training on its obligations under this Exhibit, at its own expense, to all of its employees who assist in the performance of Contractor's obligations under Contractor's agreement with CDPH, including this Exhibit, or otherwise use or disclose CDPH PCI.
  - A. The Contractor shall require each employee who receives training to certify, either in hard copy or electronic form, the date on which the training was completed.
  - B. The Contractor shall retain each employee's certifications for CDPH inspection for a period of three years following contract termination or completion.
  - C. Contractor shall provide CDPH with its employee's certifications within five (5) business days of a request by CDPH for the employee's certifications.
- X. **Employee Discipline:** Contractor shall impose discipline that it deems appropriate (in its sole discretion) on such employees and other Contractor workforce members under Contractor's direct control who intentionally or negligently violate any provisions of this Exhibit.

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

XI. Breach and Security Incident Responsibilities:

- A. Notification to CDPH of Breach or Security Incident: The Contractor shall notify CDPH immediately by telephone call plus email or fax upon the discovery of a breach (as defined in this Exhibit), and within twenty-four (24) hours by email or fax of the discovery of any security incident (as defined in this Exhibit), unless a law enforcement agency determines that the notification will impede a criminal investigation, in which case the notification required by this section shall be made to CDPH immediately after the law enforcement agency determines that such notification will not compromise the investigation. Notification shall be provided to the CDPH Program Contract Manager, the CDPH Privacy Officer and the CDPH Chief Information Security Officer, using the contact information listed in Section XI(F), below. If the breach or security incident is discovered after business hours or on a weekend or holiday and involves CDPH PCI in electronic or computerized form, notification to CDPH shall be provided by calling the CDPH Information Security Office at the telephone numbers listed in Section XI(F), below. For purposes of this Section, breaches and security incidents shall be treated as discovered by Contractor as of the first day on which such breach or security incident is known to the Contractor, or, by exercising reasonable diligence would have been known to the Contractor. Contractor shall be deemed to have knowledge of a breach if such breach is known, or by exercising reasonable diligence would have been known, to any person, other than the person committing the breach, who is an employee or agent of the Contractor.

Contractor shall take:

1. prompt corrective action to mitigate any risks or damages involved with the breach or security incident and to protect the operating environment; and
  2. any action pertaining to a breach required by applicable federal and state laws, including, specifically, California Civil Code section 1798.29.
- B. Investigation of Breach and Security Incidents: The Contractor shall immediately investigate such breach or security incident. As soon as the information is known and subject to the legitimate needs of law enforcement, Contractor shall inform the CDPH Program Contract Manager, the CDPH Privacy Officer, and the CDPH Chief Information Security Officer of:
1. what data elements were involved and the extent of the data disclosure or access involved in the breach, including, specifically, the number of individuals whose personal information was breached; and
  2. a description of the unauthorized persons known or reasonably believed to have improperly used the CDPH PCI and/or a description of the unauthorized persons known or reasonably believed to have improperly accessed or acquired the CDPH PCI, or to whom it is known or reasonably believed to have had the CDPH PCI improperly disclosed to them; and
  3. a description of where the CDPH PCI is believed to have been improperly used or disclosed; and

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
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4. a description of the probable and proximate causes of the breach or security incident; and
  5. whether Civil Code section 1798.29 or any other federal or state laws requiring individual notifications of breaches have been triggered.
- C. Written Report: The Contractor shall provide a written report of the investigation to the CDPH Program Contract Manager, the CDPH Privacy Officer, and the CDPH Chief Information Security Officer as soon as practicable after the discovery of the breach or security incident. The report shall include, but not be limited to, the information specified above, as well as a complete, detailed corrective action plan, including information on measures that were taken to halt and/or contain the breach or security incident, and measures to be taken to prevent the recurrence or further disclosure of data regarding such breach or security incident.
- D. Notification to Individuals: If notification to individuals whose information was breached is required under state or federal law, and regardless of whether Contractor is considered only a custodian and/or non-owner of the CDPH PCI, Contractor shall, at its sole expense, and at the sole election of CDPH, either:
1. make notification to the individuals affected by the breach (including substitute notification), pursuant to the content and timeliness provisions of such applicable state or federal breach notice laws. Contractor shall inform the CDPH Privacy Officer of the time, manner and content of any such notifications, prior to the transmission of such notifications to the individuals; or
  2. cooperate with and assist CDPH in its notification (including substitute notification) to the individuals affected by the breach.
- E. Submission of Sample Notification to Attorney General: If notification to more than 500 individuals is required pursuant to California Civil Code section 1798.29, and regardless of whether Contractor is considered only a custodian and/or non-owner of the CDPH PCI, Contractor shall, at its sole expense, and at the sole election of CDPH, either:
1. electronically submit a single sample copy of the security breach notification, excluding any personally identifiable information, to the Attorney General pursuant to the format, content and timeliness provisions of Section 1798.29, subdivision (e). Contractor shall inform the CDPH Privacy Officer of the time, manner and content of any such submissions, prior to the transmission of such submissions to the Attorney General; or
  2. cooperate with and assist CDPH in its submission of a sample copy of the notification to the Attorney General.
- F. CDPH Contact Information: To direct communications to the above referenced CDPH staff, the Contractor shall initiate contact as indicated herein. CDPH reserves the right to make changes to the contact information below by verbal or written notice to the Contractor. Said changes shall not require an amendment to this Exhibit or the agreement to which it is incorporated.

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

CDPH Program Contract Manager	CDPH Privacy Officer	CDPH Chief Information Security Officer
See the Scope of Work exhibit for Program Contract Manager	Privacy Officer Privacy Office Office of Legal Services California Dept. of Public Health 1415 L Street, 5 <sup>th</sup> Floor Sacramento, CA 95814  Email: <a href="mailto:privacy@cdph.ca.gov">privacy@cdph.ca.gov</a> Telephone: (877) 421-9634	Chief Information Security Officer Information Security Office California Dept. of Public Health P.O. Box 997377 MS6302 Sacramento, CA 95899-7413  Email: <a href="mailto:cdphiso@cdph.ca.gov">cdphiso@cdph.ca.gov</a> Telephone: (855) 500-0016

- XII. **Documentation of Disclosures for Requests for Accounting:** Contractor shall document and make available to CDPH or (at the direction of CDPH) to an Individual such disclosures of CDPH PCI, and information related to such disclosures, necessary to respond to a proper request by the subject Individual for an accounting of disclosures of personal information as required by Civil Code section 1798.25, or any applicable state or federal law.
- XIII. **Requests for CDPH PCI by Third Parties:** The Contractor and its employees, agents, or subcontractors shall promptly transmit to the CDPH Program Contract Manager all requests for disclosure of any CDPH PCI requested by third parties to the agreement between Contractor and CDPH (except from an Individual for an accounting of disclosures of the individual's personal information pursuant to applicable state or federal law), unless prohibited from doing so by applicable state or federal law.
- XIV. **Audits, Inspection and Enforcement:** CDPH may inspect the facilities, systems, books and records of Contractor to monitor compliance with this Exhibit. Contractor shall promptly remedy any violation of any provision of this Exhibit and shall certify the same to the CDPH Program Contract Manager in writing.
- XV. **Return or Destruction of CDPH PCI on Expiration or Termination:** Upon expiration or termination of the agreement between Contractor and CDPH for any reason, Contractor shall securely return or destroy the CDPH PCI. If return or destruction is not feasible, Contractor shall provide a written explanation to the CDPH Program Contract Manager, the CDPH Privacy Officer and the CDPH Chief Information Security Officer, using the contact information listed in Section XI(F), above.
- A. **Retention Required by Law:** If required by state or federal law, Contractor may retain, after expiration or termination, CDPH PCI for the time specified as necessary to comply with the law.
  - B. **Obligations Continue Until Return or Destruction:** Contractor's obligations under this Exhibit shall continue until Contractor returns or destroys the CDPH PCI or returns the CDPH PCI to CDPH; provided however, that on expiration or termination of the agreement between Contractor and CDPH, Contractor shall not further use or disclose the CDPH PCI except as required by state or federal law.

**ATTACHMENT 6**  
**Information Privacy and Security Requirements**  
**(For Non-HIPAA/HITECH Act Contracts)**

- C. Notification of Election to Destroy CDPH PCI: If Contractor elects to destroy the CDPH PCI, Contractor shall certify in writing, to the CDPH Program Contract Manager, the CDPH Privacy Officer and the CDPH Chief Information Security Officer, using the contact information listed in Section XI(F), above, that the CDPH PCI has been securely destroyed. The notice shall include the date and type of destruction method used.
- XVI. Amendment: The parties acknowledge that federal and state laws regarding information security and privacy rapidly evolves and that amendment of this Exhibit may be required to provide for procedures to ensure compliance with such laws. The parties specifically agree to take such action as is necessary to implement new standards and requirements imposed by regulations and other applicable laws relating to the security or privacy of CDPH PCI. The parties agree to promptly enter into negotiations concerning an amendment to this Exhibit consistent with new standards and requirements imposed by applicable laws and regulations.
- XVII. Assistance in Litigation or Administrative Proceedings: Contractor shall make itself and any subcontractors, workforce employees or agents assisting Contractor in the performance of its obligations under the agreement between Contractor and CDPH, available to CDPH at no cost to CDPH to testify as witnesses, in the event of litigation or administrative proceedings being commenced against CDPH, its director, officers or employees based upon claimed violation of laws relating to security and privacy, which involves inactions or actions by the Contractor, except where Contractor or its subcontractor, workforce employee or agent is a named adverse party.
- XVIII. No Third-Party Beneficiaries: Nothing express or implied in the terms and conditions of this Exhibit is intended to confer, nor shall anything herein confer, upon any person other than CDPH or Contractor and their respective successors or assignees, any rights, remedies, obligations or liabilities whatsoever.
- XIX. Interpretation: The terms and conditions in this Exhibit shall be interpreted as broadly as necessary to implement and comply with regulations and applicable State laws. The parties agree that any ambiguity in the terms and conditions of this Exhibit shall be resolved in favor of a meaning that complies and is consistent with federal and state laws and regulations.
- XX. Survival: If Contractor does not return or destroy the CDPH PCI upon the completion or termination of the Agreement, the respective rights and obligations of Contractor under Sections VI, VII and XI of this Exhibit shall survive the completion or termination of the agreement between Contractor and CDPH.

**ATTACHMENT 6**  
Information Privacy and Security Requirements  
(For Non-HIPAA/HITECH Act Contracts)

**Attachment 1**  
Contractor Data Security Standards

**1. General Security Controls**

- A. **Confidentiality Statement.** All persons that will be working with CDPH PCI must sign a confidentiality statement. The statement must include at a minimum, General Use, Security and Privacy safeguards, Unacceptable Use, and Enforcement Policies. The statement must be signed by the workforce member prior to access to CDPH PCI. The statement must be renewed annually. The Contractor shall retain each person's written confidentiality statement for CDPH inspection for a period of three (3) years following contract termination.
- B. **Background check.** Before a member of the Contractor's workforce may access CDPH PCI, Contractor must conduct a thorough background check of that worker and evaluate the results to assure that there is no indication that the worker may present a risk for theft of confidential data. The Contractor shall retain each workforce member's background check documentation for a period of three (3) years following contract termination.
- C. **Workstation/Laptop encryption.** All workstations and laptops that process and/or store CDPH PCI must be encrypted using a FIPS 140-2 certified algorithm, such as Advanced Encryption Standard (AES), with a 128bit key or higher. The encryption solution must be full disk unless approved by the CDPH Information Security Office.
- D. **Server Security.** Servers containing unencrypted CDPH PCI must have sufficient administrative, physical, and technical controls in place to protect that data, based upon a risk assessment/system security review.
- E. **Minimum Necessary.** Only the minimum necessary amount of CDPH PCI required to perform necessary business functions may be copied, downloaded, or exported.
- F. **Removable media devices.** All electronic files that contain CDPH PCI data must be encrypted when stored on any removable media or portable device (i.e. USB thumb drives, floppies, CD/DVD, smart devices tapes etc.). PCI must be encrypted using a FIPS 140-2 certified algorithm, such as Advanced Encryption Standard (AES), with a 128bit key or higher
- G. **Antivirus software.** All workstations, laptops and other systems that process and/or store CDPH PCI must install and actively use a comprehensive anti-virus software solution with automatic updates scheduled at least daily.
- H. **Patch Management.** All workstations, laptops and other systems that process and/or store CDPH PCI must have operating system and application security patches applied, with system reboot if necessary. There must be a documented patch management process which determines installation timeframe based on risk assessment and vendor recommendations. At a maximum, all applicable patches must be installed within 30 days of vendor release.
- I. **User IDs and Password Controls.** All users must be issued a unique user name for accessing CDPH PCI. Username must be promptly disabled, deleted, or the password changed upon the transfer or termination of an employee with knowledge of the password.

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Passwords are not to be shared. Must be at least eight characters. Must be a non-dictionary word. Must not be stored in readable format on the computer. Must be changed every 60 days. Must be changed if revealed or compromised. Must be composed of characters from at least three of the following four groups from the standard keyboard:

- Upper case letters (A-Z)
- Lower case letters (a-z)
- Arabic numerals (0-9)
- Non-alphanumeric characters (punctuation symbols)

J. **Data Sanitization.** All CDPH PCI must be sanitized using NIST Special Publication 800-88 standard methods for data sanitization when the CDPH PCI is no longer needed.

## 2. System Security Controls

- A. **System Timeout.** The system must provide an automatic timeout, requiring reauthentication of the user session after no more than 20 minutes of inactivity.
- B. **Warning Banners.** All systems containing CDPH PCI must display a warning banner each time a user attempts access, stating that data is confidential, systems are logged, and system use is for business purposes only. User must be directed to log off the system if they do not agree with these requirements.
- C. **System Logging.** The system must maintain an automated audit trail which can identify the user or system process which initiates a request for CDPH PCI, or which alters CDPH PCI. The audit trail must be date and time stamped, must log both successful and failed accesses, must be read only, and must be restricted to authorized users. This logging must be included for all user privilege levels including, but not limited to, systems administrators. If CDPH PCI is stored in a database, database logging functionality must be enabled. Audit trail data must be archived for at least 3 years after occurrence.
- D. **Access Controls.** The system must use role based access controls for all user authentications, enforcing the principle of least privilege.
- E. **Transmission encryption.** All data transmissions of CDPH PCI outside the contractor's secure internal network must be encrypted using a FIPS 140-2 certified algorithm, such as Advanced Encryption Standard (AES), with a 128bit key or higher. Encryption can be end to end at the network level, or the data files containing CDPH PCI can be encrypted. This requirement pertains to any type of CDPH PCI in motion such as website access, file transfer, and E-Mail.
- F. **Intrusion Detection.** All systems involved in accessing, holding, transporting, and protecting CDPH PCI that are accessible via the Internet must be protected by a comprehensive intrusion detection and prevention solution.

## 3. Audit Controls

**ATTACHMENT 6**  
Information Privacy and Security Requirements  
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- A. **System Security Review.** All systems processing and/or storing CDPH PCI must have at least an annual system risk assessment/security review which provides assurance that administrative, physical, and technical controls are functioning effectively and providing adequate levels of protection. Reviews shall include vulnerability scanning tools.
- B. **Log Reviews.** All systems processing and/or storing CDPH PCI must have a routine procedure in place to review system logs for unauthorized access..
- C. **Change Control.** All systems processing and/or storing CDPH PCI must have a documented change control procedure that ensures separation of duties and protects the confidentiality, integrity and availability of data.

**4. Business Continuity / Disaster Recovery Controls**

- A. **Disaster Recovery.** Contractor must establish a documented plan to enable continuation of critical business processes and protection of the security of electronic CDPH PCI in the event of an emergency. Emergency means any circumstance or situation that causes normal computer operations to become unavailable for use in performing the work required under this agreement for more than 24 hours.
- B. **Data Backup Plan.** Contractor must have established documented procedures to securely backup CDPH PCI to maintain retrievable exact copies of CDPH PCI. The backups shall be encrypted. The plan must include a regular schedule for making backups, storing backups offsite, an inventory of backup media, and the amount of time to restore CDPH PCI should it be lost. At a minimum, the schedule must be a weekly full backup and monthly offsite storage of CDPH data.

**5. Paper Document Controls**

- A. **Supervision of Data.** CDPH PCI in paper form shall not be left unattended at any time, unless it is locked in a file cabinet, file room, desk or office. Unattended means that information is not being observed by an employee authorized to access the information. CDPH PCI in paper form shall not be left unattended at any time in vehicles or planes and shall not be checked in baggage on commercial airplanes.
- B. **Escorting Visitors.** Visitors to areas where CDPH PCI is contained shall be escorted and CDPH PHI shall be kept out of sight while visitors are in the area.
- C. **Confidential Destruction.** CDPH PCI must be disposed of through confidential means, using NIST Special Publication 800-88 standard methods for data sanitization when the CDPH PSCI is no longer needed.
- D. **Removal of Data.** CDPH PCI must not be removed from the premises of the Contractor except with express written permission of CDPH.
- E. **Faxing.** Faxes containing CDPH PCI shall not be left unattended and fax machines shall be in secure areas. Faxes shall contain a confidentiality statement notifying persons receiving

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faxes in error to destroy them. Fax numbers shall be verified with the intended recipient before sending.

- F. ***Mailing.*** CDPH PCI shall only be mailed using secure methods. Large volume mailings of CDPH PHI shall be by a secure, bonded courier with signature required on receipt. Disks and other transportable media sent through the mail must be encrypted with a CDPH approved solution, such as a solution using a vendor product specified on the CALIFORNIA STRATEGIC SOURCING INITIATIVE.



## **INFORMATION SECURITY OFFICE**

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# **Information Systems Security Requirements for Projects (ISO/SR1)**

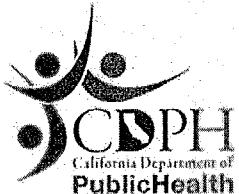
**Version 4.0**

**February 2010**

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**IMPORTANT NOTE: If an exemption from any SR1 requirement is required, the SR1 Exemption Form in Appendix A must be completed by the Project Manager or Contract Manager.**

## I. Purpose

This document provides the minimum security requirements mandated by the California Department of Public Health (CDPH) Information Security Office (ISO) for projects governed and/or subject to the policies and standards of CDPH. Projects that intend to deploy systems/applications into the CDPH system infrastructure, or will utilize CDPH information system services, are also subject to these minimum security requirements.

This document is intended to assist CDPH and its service customers in understanding the criteria CDPH will use when evaluating and certifying the system design, security features and protocols used by project solutions utilizing CDPH services. These security requirements will also be used in conjunction with the CDPH ISO compliance review program of its information system services customers.

This document will serve as a universal set of requirements which must be met regardless of physical hosting location or entities providing operations and maintenance responsibility. These requirements do not serve any specific project, nor do they prescribe any specific implementation technology.

## II. Scope of Requirements

The information security requirements in this document are organized in five categories (sections) and address at a minimum:

- Administrative/Management Safeguards
- Technical and Operational Safeguards
- Solution Architecture
- Documentation of Solution
- ISO Notifications and Approvals

## III. Contact

Chief Information Security Officer  
California Department of Public Health  
Information Security Office (ISO)  
[cdphiso@cdph.ca.gov](mailto:cdphiso@cdph.ca.gov)

## **IV. Information Systems Security Requirements**

### **A. Administrative / Management Safeguards**

#### **1. Workforce Confidentiality Statement**

All persons working with CDPH information must sign a Security and Confidentiality Acknowledgement Statement. The Statement must include, at a minimum: General Use, Security and Privacy safeguards, Unacceptable Use, Audit and Enforcement policies. (Contact the CDPH ISO for the current version of the Security & Confidentiality Acknowledgement Statement in use.)

The Statement must be signed by the Project member prior to being granted access to the CDPH information. The Statement must be renewed annually.

#### **2. Access Authorization & Maintenance**

Project/Program must document and implement clearly defined rules and processes for vetting and granting authorizations, as well as procedures for the supervision of workforce members who work with CDPH information or in locations where it might be accessed.

On at least a semi-annual basis, Project/Program will review and remove all authorizations for individuals who have left the department, transferred to another unit, or assumed new job duties within CDPH.

#### **3. Information System Activity Review**

Project/Program must implement and document procedures to regularly review records of information system activity (such as audit logs, access reports, and security incident tracking reports).

Project/Program must ensure any hosting or maintenance agreements clearly identify responsibility for this activity. Logs may be stored within the system or preferably on a centralized logging server or service, and must be maintained for a minimum of three years.

#### **4. Periodic System Security & Log Review**

All systems must allow for periodic system security reviews that provide assurance that management, operations, personnel, and technical controls are functioning effectively and providing adequate levels of protection.

These reviews may include technical tools and security procedures (such as vulnerability assessment products and penetration testing).

All systems processing and/or storing CDPH information must have a method or procedure in place to create and review system logs for unauthorized access. Logs may be stored within the system or on a centralized logging server or service, and must be maintained for a minimum of three years.

## **5. Disaster Recovery Plan**

Project/Program will establish procedures that allow facility access in support of restoration of lost information under the Disaster Recovery Plan (DRP) and emergency mode operations plan in the event of an emergency.

The restoration/recovery support procedures must be added to the existing DRP to restore any loss of information and assure continuity of computing operations for support of both the application and information.

Recovery procedures must be developed using the most current DRP template provided by the CDPH ISO.

All systems, as part of a new or existing project, must allow for periodic system recovery testing. The period between tests should be defined as part of the project and be consistent with relevant CDPH disaster recovery standards. Such testing should provide assurances that plans and controls (management, operations, personnel, and technical) are functioning effectively and providing adequate levels of protection during an incident, disaster, or breach.

Project/Program will conduct an annual Business Impact Analysis of the application to determine the Maximum Acceptable Outage (MAO), cost of lost functionality, system component dependencies, business function dependencies, and business partner dependencies.

## **6. Change Control**

All systems processing and/or storing CDPH information must have a documented change control procedure that ensures separation of duties and protects the confidentiality, integrity, and availability of information.

Systems running within the CDPH environment and/or utilizing CDPH services must comply with CDPH standards for change control process and procedures.

## **7. Supervision of Information**

Classified information in paper form must not be left unattended at any time, unless it is locked in a file cabinet, file room, desk, or office. Unattended means that information is not being observed by an employee authorized to access the information. Classified information in paper form must also not be left unattended at any time in vehicles or planes, and must not be transported in checked-in baggage on commercial airplanes.

## **8. Escorting Visitors**

Visitors to areas where classified information is contained must be escorted and classified information must be kept out of sight while visitors are in the area.

## **B. Technical and Operational Safeguards**

### **1. System Security Compliance**

All Project systems must comply with applicable CDPH security policies and requirements, as specified in the State Administrative Manual (SAM), Public Health Administrative Manual (PHAM), Privacy Act, and any other applicable State or Federal regulation. All security safeguards and precautions must be subject to the approval of the CDPH ISO.

### **2. Malware Protection**

All systems must install and actively use anti-virus software, with a minimum daily automatic update scheduled. Systems such as mainframes, where anti-virus is unavailable, are excluded from this requirement. All security safeguards and precautions must be subject to the approval of the CDPH ISO.

### **3. Patch Management**

All systems must install and actively use a comprehensive third-party patch management program, and routinely update system and application software within two weeks of vendor release unless the CDPH ISO validates a patch is not applicable. Critical updates may require a more restrictive timeline. All security safeguards and precautions must be subject to the approval of the CDPH ISO.

### **4. Encrypted Electronic Transmissions**

All information electronic transmissions that contain classified information (such as website access, file transfers or through e-mail) must be encrypted end-to-end using an industry-recognized encryption standard (such as Transport Layer Security (TLS) or its predecessor, Secure Socket Layer (SSL), Secure File Transfer Protocol (SFTP), or any FIPS 140-2 certified encryption algorithm). Classified information must be encrypted at the minimum of Advanced Encryption Standard (AES) with a 128 bit key or higher. Equivalent or stronger algorithms may be used upon approval of the CDPH ISO.

### **5. Encrypted Information Storage**

All classified information must be encrypted when electronically stored using a CDPH approved encryption standard. Classified information must be encrypted at the minimum of AES with a 128 bit key or higher, or any FIPS 140-2 certified encryption algorithm. Equivalent or stronger algorithms may be used upon approval of the CDPH ISO.

### **6. Workstation / Laptop Encryption**

All workstations and laptops that process and/or store classified CDPH information must be encrypted with a CDPH ISO approved solution. Classified CDPH information must be encrypted at the minimum of AES with a 128 bit key or higher, or any FIPS 140-2 certified encryption algorithm. Equivalent or stronger algorithms may be used upon approval of the CDPH ISO.

## **7. Removable Media Encryption**

All electronic files that contain classified CDPH information must be encrypted at the minimum of AES with a 128 bit key or higher, or any FIPS 140-2 certified encryption algorithm when stored on any removable media type device (such as USB thumb drives, floppies, CD/DVD, tape backup, etc.). Equivalent or stronger algorithms may be used upon approval of the CDPH ISO. The solution should follow best practices described in National Institute of Standards & Technology (NIST) 800-111, Guide to Storage Encryption Technologies for End User Devices.

## **8. Secure Connectivity**

All transmission and data-links between the information and application/system, and DBMS and the Office of Technology Services (OTech) Wide Area Network (WAN), must be secure between transmission systems as required by regulation, policy and/or standard and as prescribed for the given application/system.

## **9. Intrusion Detection and Prevention**

All systems that are accessible via the Internet, are critical, and/or contain classified information must install and actively use a CDPH ISO approved comprehensive third-party real-time intrusion detection and prevention solution. The solution must also report security events directly to a CDPH enterprise monitoring solution. All security safeguards and precautions must be subject to the approval of the CDPH ISO.

## **10. Minimum Information Download**

In accordance with the principle of need-to-know, only the minimum amount of information required to perform necessary business functions should be copied or downloaded.

## **11. Information Sanitization**

All classified CDPH information (electronic or paper) must be sanitized from systems when the information is no longer necessary. The sanitization method must conform to NIST Special Publication 800-88 Guidelines for Media Sanitization. Once information has been sanitized, the CDPH contract manager must be notified. If an agency or other entity is unable to sanitize the media in accordance with NIST 800-88 and provide notification, the media must be returned to CDPH after usage for sanitization in an approved manner.

## **12. Removal of Information**

Classified CDPH information (electronic or paper) must not be removed from CDPH premises, or from the premises of an authorized vendor or contractor, without the written permission of the CDPH ISO.

### **13. Faxing or Mailing of Information**

Facsimile transmissions containing classified CDPH information must not be left unattended if fax machines are not in a secure area. Facsimile transmissions must include a cover sheet that contains a security statement notifying persons receiving faxes in error to destroy them and notify the CDPH ISO immediately. Fax numbers must be verified before sending.

Classified CDPH information must only be mailed using secure methods. Large volume mailings of classified CDPH information must be by a secure, bonded courier with signature required upon receipt. Disks and other transportable media sent through the mail must be encrypted with a CDPH ISO approved solution.

## C. Solution Architecture

### 1. System Security Compliance

The system must comply with all applicable CDPH security policies and requirements, as well as those specified in the State Administrative Manual (SAM), Public Health Administrative Manual (PHAM) Privacy Act, and any other applicable State or Federal regulation. All security safeguards and precautions must be subject to the approval of the CDPH ISO.

The system may share data with other entities only after all applicable agreements are in place. For example, using a CDPH data release form, Business Associate Agreement, or Data Use Agreement. These agreements must ensure data is protected according to all applicable standards and policies.

Any data which is exported outside the scope of the system and its security provisions (such as exports for statistical analysis) require approval by the CDPH ISO to ensure sufficient security is in place to protect the exported data.

### 2. Warning Banner

All systems containing CDPH information must display a login warning banner stating that information is classified, activity is logged, and system use is for business purposes only. User must be directed to log off the system if they do not agree and comply with these requirements.

The following warning banner must be used for all access points (such as desktops, laptops, web applications, mainframe applications, servers and network devices):

*WARNING: This is a State of California computer system that is for official use by authorized users and is subject to being monitored and/or restricted at any time. Unauthorized or improper use of this system may result in administrative disciplinary action and/or civil and criminal penalties. By continuing to use this system you indicate your awareness of and consent to these terms and conditions of use.*

*LOG OFF IMMEDIATELY, if you do not agree to the conditions stated in this warning.*

### 3. Layered Application Design

Applications must be able to be segmented into a layered application design separating, at a minimum, the Presentation, Application/Business Logic, and Data Access Logic, and Data Persistence/Database layers.

The Presentation, Application/Business Logic, and Data Access Logic layers must be separated physically by a firewall regardless of physical implementation.

Any system request made to the Business logic layer must be authenticated.

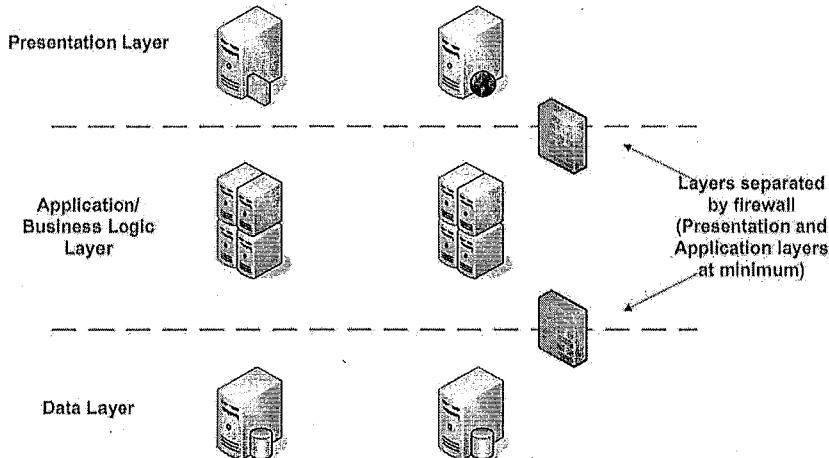
The Data Access Logic Layer may take the form of stored procedures, database Application Programming Interface (API), Data Access Objects/Components, Data Access Middleware, Shared Data Services, or Secure Web Service. Any system request made to the Data Access

logic layer must be authenticated and authorized. No direct access to the Data Persistence/Database layer will be permitted, except through the Data Access logic layer.

All calls to the Data Persistence/Database layer will be made through the Data Access logic layer as a trusted sub-system that utilizes a single database access account to all transactions.

The Data Access Logic Layer must take the form of stored procedures, database API, Data Access Objects/Components, Data Access Middleware, Shared Data Services, or Secure Web Service. System requests made to the Business logic and Data Access logic layers must be authenticated and authorized.

Vendor-provided commercial off-the-shelf (COTS) packages, or components where physical separation of layers is not possible, requires CDPH ISO approval.



#### 4. Input Validation

All user input must be validated before being committed to the database or other application information repository. The system must manage client input controls from server side to the extent possible. Data queries from the Presentation or the Business Logic layers must be validated for appropriate use of query language, and validated for appropriate quantity and quality of data input. This includes In-line Structured Query Language (SQL) calls. The system must validate client input on the server side to the extent possible. All third-party client side input controls must be documented and approved by the CDPH ISO.

#### 5. Data Queries

All Data queries (including In-line SQL calls) will not be allowed from the Presentation or the Business Logic layers unless validated for appropriate use of query language and validated for appropriate quantity/quality of data input. All data queries solution must be approved by the CDPH ISO.

Database table names and column names must not be exposed. Applications must use an alias for every table and column.

Dynamic SQL will not be permitted from the Presentation Layer without prior approval from the CDPH ISO.

## **6. Username/Password Based Authentication**

When usernames and passwords are going to be used as the method for system authentication, the following requirements must be met:

- Username requirements:
  - Must be unique and traceable to an individual.
  - Must not be shared.
  - Must not be hard-coded into system logic.
- Password requirements:
  - Must not be shared.
  - Must be 8 characters or more in length.
  - Must not be a word found in the dictionary, regardless of language.
  - Must be encrypted using irreversible industry-accepted strong encryption.
  - Must be changed at least every 60 days.
  - Must not be the same as any of the previous 10 passwords.
  - Must be changed immediately if revealed or compromised.
  - Must be composed of characters from at least three of the following four groups from the standard keyboard:
    - Upper case letters (A-Z);
    - Lower case letters (a-z);
    - Numbers (0 through 9); and
    - Non-alphanumeric characters (punctuation symbols).
- Account security:
  - Accounts must be locked after three (3) failed logon attempts.
  - Account lock-out reset timers must be set for a minimum of 15 minutes.
  - Accounts must be promptly disabled, deleted, or the password changed upon the transfer or termination of an employee with knowledge of the password.

## **7. Administrative / Privileged Accounts Management**

A privileged account is an account that allows an individual to perform maintenance on an operating system or applications (e.g. create/remove users, install applications, create/modify databases, etc.). Privileged accounts require the approval of the individual's manager, the CDPH ISO, and must include a business justification stating why privileged access is required and what it will be used for. Individuals granted privileged accounts must have already signed the Security and Confidentiality Acknowledgement Statement. (Contact the CDPH ISO for the current version of the Security & Confidentiality Acknowledgement Statement in use.)

The use of shared privileged accounts (e.g. Administrator) is strictly prohibited.

System administration must be performed using a different username rather than the one used for daily non-administrative activities. Administrative accounts must be used only for administrative activity within the authorized role of that account and the individual using it. It must be logged out of immediately after administrative work is complete.

- Username requirements:
  - Must be unique and traceable to an individual.
  - Must not be shared.
  - Must not be hard-coded into system logic.
  - Must be the same across different zones (e.g. Web Zone, Internal network, and Test Labs / Environments).
  - The default built-in Administrator account must be renamed and disabled.

- The naming convention for privileged accounts must not make it obvious that usernames belong to privileged accounts.
- If a generic privileged account is created:
  - Must only be used in an Emergency.
  - Must not be used for routine maintenance.
  - The password storage and management process for generic privileged accounts must be approved by the CDPH ISO.
- Password requirements:
  - Must not be shared.
  - Must be 12 characters or more in length.
  - Must not be a word found in the dictionary, regardless of language.
  - Must be encrypted using irreversible industry-accepted strong encryption.
  - Must be changed at least every 60 days.
  - Must not be the same as any of the previous 10 passwords.
  - Must be changed immediately if revealed, or compromised.
  - Must be comprised of characters from at least three of the following four groups from the standard keyboard:
    - Upper case letters (A-Z);
    - Lower case letters (a-z);
    - Numbers (0 through 9);
    - Non-alphanumeric characters (punctuation symbols).
  - Must be changed immediately upon the termination or transfer of an employee with knowledge of the password.
  - Must not be the same across different zones (e.g. Web Zone, Internal network, and Test Labs / Environments).
- Account security:
  - Accounts must be locked after three (3) failed logon attempts.
  - Account lock-out timers must be set for at least 60 minutes.

## **8. Service Accounts Management**

A service account is an account used to run a service and whose password is known by multiple individuals. When and where it is necessary to use a service account, the account request will be approved by the manager of the Project/Program requesting the account and by the CDPH ISO. Requirements, stating the need for a service account, will be documented in the request. A service account password is shared among the individuals authorized to access the account, and is subject to controls as stated in the password requirements in this document.

### **Restrictions for Service Accounts**

- Sharing passwords via email is prohibited, unless the body of the email itself is encrypted using strong encryption.
- When users are no longer authorized to access an existing service account, the service account password must be changed.

## **9. Authentication and Authorization**

Any system deployed during a project, or as a result of a project, must provide secure role-based access for authorization (separation between system/server administrators and application/database administrators) utilizing the principle of least privilege at all layers/tiers.

- In all cases, applications must default to explicitly deny access where authentication and/or authorization mechanisms are required. No application that requires a login can offer to, or be capable of, remembering a user's credentials.

## **10. Authentication Logging**

The system must log success and failures of user authentication at all layers as well as log all user transactions at the database layer as required by regulation, policy or standard, and as prescribed for the given application/system. This logging must be included for all user privilege levels including, but not limited to, systems administrators. This requirement applies to systems that process, store, and/or interface with CDPH information.

## **11. Automatic System Session Expiration**

The system must provide an automatic timeout, requiring re-authentication of the user session after 20 minutes of inactivity.

## **12. Automatic System Lock-out and Reporting**

The system must provide an automatic lock-out of users and a means to audit a minimum of three (3) failed log-in attempts. The means of providing audit information must be approved by the CDPH ISO.

## **13. Audit (Access)**

All systems/applications will implement role-based access to auditing functions and audit trail information utilizing the principle of least privilege.

All systems/applications will implement a secure online interface to Audit Capabilities and Reporting by way of API or network service (or Web Service) to allow CDPH ISO to view logs, auditing procedures, and audit reporting.

## **14. Audit (Minimum Information)**

The minimum log information below is required for any system that contains, or is involved in the transmission of, classified information. The log information should be available on every system running a production environment. This information must be provided upon request of the CDPH ISO for investigations and risk assessments.

The system must record, at minimum, the following events and any other events deemed appropriate by the CDPH ISO:

### Transaction Types

- Any and all administrative changes to the system (such as administrative password changes, forgotten password resets, system variables, network configuration changes, disk sub-system modifications, etc).
- Logon failures.
- Logons during non-business hours.
- Failed access to an application or data.
- Addition, deletion, or modification of users or program access privileges.
- Changes in file access restrictions.
- Database addition, deletion, or modification.
- Copy of files before and after read/write changes.
- Transaction issued.

Individual audit trail records must contain the information needed to associate each query transaction to its initiator and relevant business purpose. Individual audit trail records should capture, at a minimum, the following:

Minimum Audit Trail Record Content

- Date and time stamp.
- Unique username of transaction initiator.
- Transaction recorded.
- Success or failure of transaction recorded.
- Relevant business process or application component involved.
- Data captured (if any).

Audit Trail logs must be maintained at minimum for three (3) years after the occurrence, or a set period of time determined by the CDPH ISO that would not hinder a detailed forensic investigation of the occurrence. The CDPH ISO has final approval authority.

## **15. Application Security Controls**

For any application which accesses classified information, the following technical controls must be present, unless an exception is granted by the CDPH ISO:

- Must use *least privileged accounts* to execute code and to access databases.
- User access rights must be authenticated and authorized on entry to each application tier.
- All user input must be validated, including parameters passed to all public web service methods.
- Information that is not required must not be exposed.
- If a web application fails, it must not leave sensitive data unprotected or expose any details in error messages presented to the user. Any exceptions must be logged or emailed to the appropriate team member.
- Any sensitive data stored in session, cookies, disk files, etc., must be encrypted. Any sensitive data passed between tiers must be encrypted or must use SSL.
- Applications must be protected from the Internet by a front-end web application, firewall, gateway, and proxy of a type approved by the CDPH ISO, which must be included in the documented system design.
- Postback Universal Resource Locators (URLs) must not contain unencrypted record identifiers or database keys.
- Postback URLs must not include query strings.

## **16. Application Code Security**

Application developers should use tools and methods during development to ensure all custom source code is free from security vulnerabilities. At a minimum, the application must be free of the vulnerabilities described in the CWE/SANS Top 25 Most Dangerous Programmer Errors (<http://www.sans.org/top25errors/>).

CDPH has the right to conduct a vulnerability scan against the application prior to its activation, and may disapprove use of the application until the vulnerabilities are remediated and the application re-tested. Any verified vulnerabilities from this list must be corrected by the organization which developed the application, at no additional cost to CDPH. Unless an exception is granted by the CDPH ISO, vulnerabilities identified within third-party components must be remediated by the third-party vendor at no additional cost to CDPH. Otherwise, a different third-party component must be selected and implemented.

## 17. Strong Authentication

Any information system providing access to Personally Identifiable Information (PII) and/or classified information from the Internet must assess the need for additional strong authentication, to prevent a significant data breach if a password is compromised. Strong authentication is defined as additional mandatory authentication over and beyond the password, for each account which has direct access to PII and/or classified information, or which has administrative privileges. The following factors should be included in the assessment:

- Applicable policies and regulations.
- Sensitivity of the PII or classified information.
- Number of data records.
- Number of user accounts with access to data.
- Level of control over end users.
- Level and frequency of log monitoring.
- Automated alerts and controls for unusual data access patterns.
- End user training on security practices.
- Other mitigating security controls.

The Project/Program providing access to PII and/or classified information from the Internet must either implement an approved strong authentication method, or document why strong authentication will not be utilized. This documentation must be provided to the CDPH ISO for review and approval.

The following methods are approved for strong authentication:

- **Physical Token:** A physical device in the possession of the account holder, which must be physically connected to the computer. Examples include a USB token or Smartcard.
- **One Time Password (OTP):** A temporary one time pass code is provided to the account holder, either by a physical device in their possession, or by way of a pre-defined communication channel such as cell phone or e-mail address. Examples include OTP token, or OTP sent via SMS text message, e-mail, or by automated voice call.
- **X.509 Certificate:** A digital certificate which has been installed on the access point computer or device, utilizing a Public Key Infrastructure (PKI).
- **Firewall Rules:** Firewall TCP/IP rules which ensure the account is only usable from an authorized access point, based upon specific IP address or IP subnet.

The following strong authentication method is approved for personal data access, where accounts have access to only the account holder's personal data, or a single data record they are custodian over such as a family member or information about their company. For example, an application where a client can submit or edit an enrollment form for themselves or someone else, but cannot access any other data records.

- **Personal Challenge Questions:** During registration, the account holder pre-answers one or more questions known only to them. When logging into a different computer, typically tracked with a cookie, they cannot login without correctly answering the pre-configured questions. The user should be prompted for whether the new computer is trusted vs. a one-time login, and this information used to determine whether to save a new cookie.

The proposed strong authentication mechanism must be included in the detailed design documentation as described in Section E.5, Application Security Approvals.

## **D. Documentation of Solution**

### **1. System Configuration**

Project/Program must document and maintain documentation for the system/application. This should include the following:

- Detailed design.
- Description of hardware, software, and network components.
- Special system configurations.
- External interfaces.
- All layers of security controls.

### **2. Information Classification**

Project/Program will document and maintain an information classification matrix of all information elements accessed and/or processed by solution.

The matrix should identify at a minimum:

- Information element.
- Information classification/sensitivity.
- Relevant function/process, or where is it used.
- System and database, or where is it stored.

### **3. System Roles and Relationships**

Project must document the following roles and ensure everyone understands their role, and complies with all applicable policies and regulations.

- The designated owner of the system.
- The designated custodian(s) of the system.
- The users of the system.
- The security administrator for the system.
- Outside entities sending or receiving data to system.

Project must document the organizational structure and relationships between these roles.

### **4. Audit Method Documentation**

Project/Program will document the solution's auditing features and provide samples of audit reporting.

### **5. Retention of Documentation**

The system/application administrators will retain documentation, including audit and activity logs, for a minimum of three (3) years (up to seven (7) years maximum) from the date of its creation or the date it was last in effect, whichever is later. Shorter retention periods must be allowed contingent upon applicable regulations, policies, and standards, and upon approval by the CDPH ISO. In certain circumstances the retention period must be lengthened to comply with regulatory requirements.

## E. ISO Notifications and Approvals

### 1. Security Compliance Notification

As part of each project, assigned staff will document how the proposed solution meets or addresses the requirements specified in this document. This documentation must be submitted to the CDPH ISO prior to taking custody of CDPH information.

### 2. Notification of Changes to Solution

Once a project is approved as final by the CDPH ISO, no changes will be made to the project scope, documentation, systems or components without a change approval by the CDPH ISO.

### 3. Notification of Breach

The system/application administrators must immediately, and in writing, report to the CDPH ISO any and all breaches or compromises of system and/or information security. They must also take such remedial steps as may be necessary to restore security and repair damage, if any.

In the event of a breach or compromise of system and/or information security, the CDPH ISO may require a system/application security audit. The CDPH ISO must review the recommendations from the security audit, and make final decisions on the steps necessary to restore security and repair damage.

The system/application administrators must properly implement any and all recommendations of the security audit, as approved by the CDPH ISO.

### 4. Project Security Approvals

Projects must ensure checkpoints throughout the System Development Life Cycle (SDLC) which verify security requirements are being met. This must be incorporated in the project plan along with identification of necessary resources, timelines, and costs to address these requirements. The CDPH ISO should be involved throughout the SDLC to ensure this occurs.

For reportable Feasibility Study Reports (FSRs), the California Office of Information Security (OIS) requires submission of the *Questionnaire for Information Security and Privacy Components in Feasibility Study Reports and Project-Related Documents*.

See

[http://www.cio.ca.gov/OIS/Government/documents/docs/Info\\_Sec\\_and\\_Priv\\_Components\\_FSR-Questionnaire.doc](http://www.cio.ca.gov/OIS/Government/documents/docs/Info_Sec_and_Priv_Components_FSR-Questionnaire.doc).

The response to this document must be approved by the CDPH ISO prior to submission.

Projects must ensure all applicable security requirements and deliverables are included in the project plan, and that ISO approvals are obtained, where required. This includes those listed in the following section, and any covered by other sections of this document. The CDPH ISO must be given reasonable time to review and comment on these deliverables.

## 5. Application Security Approvals

At a minimum, for any application which accesses classified information, the following documented CDPH ISO approvals must be obtained at the appropriate project phases, and before the application is moved to production.

- CDPH ISO approval of a dated, detailed design document. This design must include network layout including specific firewall port requirements, server hosting locations, operating systems, databases, data exchange interfaces, and points of authentication/authorization. The project must not move beyond the design phase until there is a CDPH ISO approved design.
- CDPH ISO approval of any non-standard development tools (such as programming languages or toolkits).
- CDPH ISO approval of a plan for an independent security code review which addresses at minimum the current Open Web Application Security Project (OWASP) top ten application vulnerabilities, and CWE/SANS Top 25 Most Dangerous Programmer Errors, where applicable. CDPH ISO must approve any findings of that code review not being corrected. CDPH ISO recommends the security code review be carried out during the development process rather than at the end.
- CDPH ISO approval of a plan for security code reviews of future maintenance code changes, which addresses at minimum the current OWASP top ten application vulnerabilities, CWE/SANS Top 25 Most Dangerous Programmer Errors, where applicable.
- CDPH ISO approval of a plan for an independent automated security vulnerability assessment of the application, and approval of the findings of that assessment. The assessment must assess at minimum the OWASP top ten risks and CWE/SANS Top 25 Most Dangerous Programmer Errors, where applicable.

*Independent* as indicated above is defined as organizationally separate from those developing or configuration the application. The independence and skill level of the entities being utilized must be approved by the CDPH ISO.

Application code and infrastructure is subject to a CDPH ISO audit, and must match the approved detailed design.

**F. Appendix A – SR1 Exemption Form**

<b>REF</b>	<b>Security Requirement</b>	<b>Exemption (Yes, No, or N/A)</b>	<b>Business Justification</b>
<b>A</b>	<b>Administrative / Management Safeguards</b>		
1	Workforce Confidentiality Statement		
2	Access Authorization & Maintenance		
3	Information System Activity Review		
4	Periodic System Security & Log Review		
5	Disaster Recovery Plan		
6	Change Control		
7	Supervision of Information		
8	Escorting Visitors		
<b>B</b>	<b>Technical and Operational Safeguards</b>		
1	System Security Compliance		
2	Malware Protection		
3	Patch Management		
4	Encrypted Electronic Transmissions		
5	Encrypted Data Storage		
6	Workstation / Laptop Encryption		
7	Removable Media Encryption		
8	Secure Connectivity		
9	Intrusion Detection and Prevention		
10	Minimum Information Download		
11	Information Sanitization		
12	Removal of Information		
13	Faxing or Mailing of Information		
<b>C</b>	<b>Solution Architecture</b>		
1	System Security Compliance		
2	Warning Banner		
3	Layered Application Design		
4	Input Validation		
5	Data Queries		
6	Username/Password Based Authentication		
7	Administrative / Privileged Accounts Management		
8	Service Accounts Management		
9	Authentication and Authorization		
10	Authentication Logging		
11	Automatic System Session Expiration		
12	Automatic System Lock-out and Reporting		

<b>REF</b>	<b>Security Requirement</b>	<b>Exemption (Yes, No, or N/A)</b>	<b>Business Justification</b>
13	Audit (Access)		
14	Audit (Minimum Information)		
15	Application Security Controls		
16	Application Code Security		
17	Strong Authentication		
<b>D</b>	<b>Documentation of Solution</b>		
1	System Configuration		
2	Information Classification		
3	System Roles and Relationships		
4	Audit Method Documentation		
5	Retention of Documentation		
<b>E</b>	<b>ISO Notifications</b>		
1	Security Compliance Notification		
2	Notification of Changes to Solution		
3	Notification of Breach		
4	Project Security Approvals		
5	Application Security Approvals		