Project Approval Lifecycle Training – Stage 2
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Create Your Own Job Aid

Capture ideas for follow-up. Use a bright sheet of paper to jot down key information.

I will use this:
Tools and information I can use right away.

Look this up later:
Concepts I want to explore later on my own.

My reference list:
References I want to keep for future use.

Tool/Link available on the Tools and Resources slides.
What Will Be Covered Today

• This training covers
  – PAL’s role in IT Project Delivery
  – Role of “Critical Partners” and “Core Team” in PAL
  – Stage 2 Preliminary Assessment
  – Stage 2 Alternative Analysis

• This training will not address
  – General Business Analysis Techniques
  – Analysis of your specific project situation
What is Up First…

• This training covers
  – **PAL’s role in IT Project Delivery**
  – Role of “Critical Partners” and “Core Team” in PAL
  – Stage 2 Preliminary Assessment
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Top Issues Departments Face

- Contract management and vendor negotiations
- Data conversion and migration
- Governance and sponsorship
- Interface planning and implementation
- Organizational change management
- Quality assurance and quality control
- Release management
- Requirements definition and management
- Risks and issues
- Schedule
- Testing
- Architecture planning
CA Statewide IT Project Delivery

• Stage 1 – Business Analysis (Project Concept)
  – Approval delegated to AIOs (TL 16-08)
  – 30 Day target for CDT approval
• Stage 2 – Alternatives Analysis (Project Alternatives)
• Stage 3 – Solution Development (Project Procurement)
• Stage 4 – Project Readiness & Approval (Project Execution)
  – Recently released (TL 16-07)
Project Approval Lifecycle

Stage 1: Business Analysis
- Identify Problem/Opportunity
- Establish Business Case/Need
- Ensure Strategic Alignment
- Assess Organizational Readiness

Stage 2: Alternatives Analysis
- Assess Existing Business Processes
- Market Research
- Mid-level Solution Requirements
- Identify Solution Alternatives
  - COTS/MOTS
  - Custom
  - Existing
- Recommend Solution
- Procurement and Staffing Strategy
- Project Timeline

Stage 3: Solution Development
- Procurement Profile
- Detailed Solution Requirements
- Statement of Work
  - Part A
  - Part B
- Solicitation Package
  - Evaluation Methodology
  - Cost/Payment Model
- State Staffing Allocation

Stage 4: Project Readiness and Approval
- Solicitation Release
- Select Vendor
- Contract Management Readiness
- Baseline Project
  - Cost
  - Schedule
- Project Readiness
- Risk Register
- DOF/Legislative Approval

Award Contract and Start Project

Department of Technology Oversight and State Entity Collaboration
• PAL guidelines and forms are located in the Statewide Information Management Manual (SIMM):
  – SIMM 19 Project Approval Lifecycle

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Stakeholder Involvement is Key

An important part of the PAL process is ensuring that all the right stakeholders are involved in the planning of your project.
California Department of Technology (CDT) will involve Critical Partners from across the organization as well as other state control agencies (DOF and DGS) in the review of PAL documents.
The Proposal Development Team should include the necessary human resources to address all aspects of project planning.
Core Team Concept

The Core Team is a sub-team of the PAL Development Team that will drive the gathering and reporting of PAL information and analysis.
It is important to have the right level of engagement from the team members. This means making time and giving commitment. Not having active engagement is a project risk. Plan for these resources to continue to be involved as needed as the project transitions from planning to executing.

If you don’t have the PAL Development Team members represented, then that may suggest a potential risk to your project. PAL is intended to uncover potential deficiencies in the project staffing and SME involvement and work with you to mitigate those potential risks.
Proposal Development Team

Program

• Also known as “the business” — is the driver of the business need.
• Responsible for ensuring that business process needs are met.
•Develops a program-appropriate strategy for stakeholder involvement.

Admin & Procurement

• Keeps track of time and resources.
• Will be leveraged for understanding department resources.
• Leads or assists with the development of solicitations for IT goods and/or services, and managing support contracts.

Which Core Team members are involved?*
Proposal Development Team

Project Management
• An office specializing in running projects and monitoring the department’s IT portfolio.

IT System Support
• The Data custodian organization for the existing or proposed solution.

Information Security
• Oversees and validates the security and privacy handling of information by the state entity.
• Ensures security controls are suitable for the information classification.

Which Core Team members are involved?*

16
Enterprise Architecture

- Articulates alternative concepts, explores and evaluates alternatives, and analyzes solution recommendations.

Budget Office

- Provides financial information regarding the existing operations
- Leads the development of the Financial Analysis Worksheets.
• Program team members should be Subject Matter Experts (SMEs), in the program areas that have the business need.
  – This person should know the resources and functions of the program, including program policy and processes.

• Resources the Program person should bring to the team include:
  – Procedural manuals
  – Relevant policy interpretations
  – A working knowledge of the business process flows
• Administration is a broad area that captures a wide range of functions. Common areas that may be tapped include:
  – Accounting
  – Facilities
  – Contract Management
  – Human Resources

• The Administration team members would bring knowledge and resources such as:
  – Organizational charts
  – Duty statements
  – Contract management knowledge
• Procurement is a specialized area that captures functions and duties related to:
  – Conducting market research
  – Determining procurement approach
  – Developing solicitations
  – Overseeing overall procurement activities
• The procurement team members would bring knowledge and resources such as:
  – Market research assistance
  – Procurement approach options
  – Costing models
  – Evaluation methodology
Project Management

- The Project Management team member is responsible for:
  - Documenting the analysis and planning activities that the project team is doing, including mapping out a schedule
  - Creating methods and processes to manage the proposal development and the project

- CDT expects that a Project Manager be a core team member from the S2AA onward, where organizational capacity exists.
IT System Support

- IT System Support is the custodian of the existing data systems.
  - IT is on the Core Team and at the table, but the Program area drives the effort.
- IT System Support team members are responsible for:
  - Serving as SMEs for the technical solution
  - Bringing documentation of the existing system
  - Serving as the liaison with the Statewide Data Center
  - Assisting in estimating IT related project costs for development and infrastructure
  - Maintaining the new solution
Information Security

• Information Security has both a business and technical focus.

• The Information Security team member brings:
  – Knowledge of the information security policies, standards, and controls required based on information classification and system categorization
  – Applies these information security policies and standards to the proposed solution
Enterprise Architecture

• Enterprise Architecture (EA) focuses on the business and ways technology may be used to meet business needs.

• The EA team member is expected to bring knowledge of:
  – The business
  – Business requirements
  – State entity EA practice and policies
  – Statewide EA Practice and Program
  – Appropriate governance and standards
• The Budget Office team member serves as lead in the development of the Financial Analysis Worksheets (FAWs) included in PAL Stage 2.

• The Budget Office team member will bring knowledge of:
  – State budget processes
  – Budget timelines
  – Cost estimation methodologies
PAL Stage 2 Process

• Kick-Off Meeting
• CDT Engagement Determination
• Proposal Development Activities
  – Guided
  – Self-directed
• Collaborative Review
  – Using Scorecard Tool
This training covers:
- PAL’s role in IT Project Delivery
- Role of “Critical Partners” and “Core Team” in PAL
- **Stage 2 Preliminary Assessment**
- Stage 2 Alternative Analysis

This training will not address:
- General Business Analysis Techniques
- Analysis of your specific project situation
The purpose of the Project Approval Lifecycle Stage 2 Preliminary Assessment is to:

• Help recognize and mitigate project risks early
• Introduce flexibility in PAL reporting
2.1 & 2.2 General Submittal Info

Instructions for the Stage 2 Preliminary Assessment are located in SIMM Section 19A.1 – Preparation Instructions...

This is within the Stage 1 instructions, so perhaps not where you would expect to find them!
2.3 Preliminary Assessment

**Intent:** Confirm the agency has identified appropriate project resources, sponsors, and stakeholders; conducted an impact assessment to understand the organization’s readiness to take on the project; and completed a project business complexity assessment.

**Outcome:** Provides CDT and partners the opportunity to provide guidance during the collaborative development process with the goal of mitigating risk.
2.3 Stage 2 Preliminary Assessment

2.3.1 Impact Assessment

1. Has the Agency/state entity identified and committed subject matter experts from all business sponsors and key stakeholders?

2. Are all current baseline systems that will be impacted by this proposal documented and current (e.g., data classification and data exchange agreements, privacy impact assessments, design documents, data flow diagram, data dictionary, application code, architecture descriptions)?

3. Does the Agency/state entity anticipate needing support from the Department of Technology’s Statewide Technology Procurement Division to conduct market research for this proposal (Market Survey, Request for Information)?

4. Does the Agency/state entity anticipate submitting a budget request to support the procurement activities of this proposal?

5. Could this proposal involve the development and/or purchase of systems to support activities included in the Financial Information System for California (Fiscal) (e.g., financial accounting, asset management, human resources, procurement/ordering, inventory management, facilities management)?

6. Does the Agency/state entity have a designated Chief Architect or Enterprise Architect to lead the development of baseline and alternative solutions architecture descriptions?

7. Will the Agency/state entity’s Information Security Officer be involved in the development and review of any security related requirements?

8. Does the Agency/state anticipate performing a business-based procurement to have vendors propose a solution?

2.3.2 Business Complexity Assessment

Business Complexity: 2.2  Business Complexity Zone: [High, Medium]

See SIMM 45C and 45D – For the Business Complexity Assessment instructions and Complexity Assessment tool.

Important

Be ready to discuss the information provided here during the Gate 1 Collaborative Review.

The Business Complexity Zone auto-populates based on the Business Complexity entered.
PAL is not about fulfilling what CDT wants. It is about performing sufficient planning for your project. PAL process forms are just a document to capture that you have completed a sufficient level of planning for your project.

Planning for a project takes time and effort. Sufficiently planning within the project management discipline areas highlighted in PAL is a necessary ingredient for project success.

Treat project planning activities as if it were a project in itself.

- Specify dedicated staff.
- Make leadership available as sponsors to champion the S2AA from both business and IT.
- Setup a governance structure with plans for resource management, communication, and risks.
- Setup a fully resourced schedule for the completion of the document.
- Plan to have CDT engaged in all the remaining gates.
- You still have to plan for your project no matter what development approach you intend to use.
What is Up Next…

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2.4 Submittal Information

Select this box to auto-populate the contact information with the Preliminary Assessment Submittal Information.

When you are ready to submit your Stage 2 Alternatives Analysis, enter the contact information, submission date, submission type, and attach the project approval executive transmittal.
2.4 Submittal Information - Conditions

For Stage 2, you will only have potential conditions identified on the Stage 1 Business Analysis Evaluation Scorecard.

Number the conditions (i.e., 1.1, 1.2, etc.) – The first number represents the Stage and the second number represents the condition number for that Stage.

Use the “Insert Condition” to add more Conditions.

<table>
<thead>
<tr>
<th>Condition #</th>
<th>Condition Category</th>
<th>Condition</th>
<th>Assessment</th>
<th>Agency/state Entity Response</th>
<th>Status</th>
<th>Condition #</th>
<th>Condition Category</th>
<th>Condition Sub-Category</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Governance</td>
<td>Agency/state entity needs security policies and procedures associated with control, authorization, and protection of data.</td>
<td>Transfer</td>
<td>Agency/state entity is currently in the process of developing a plan to implement data security. The policy will be prior to entering Stage 3.</td>
<td>Deferred to another Stage/Gate</td>
<td>1.2</td>
<td>Project Management</td>
<td>Resources</td>
<td>Agency/state entity has several projects that will share resources. Identified Project Manager will oversee concurrent projects. Needs to establish a plan to address the shared resources.</td>
</tr>
</tbody>
</table>
The Project Approval Lifecycle is flexible.

- The business complexity score and the subsequent technical complexity score will impact what you submit to CDT.
- Conditional approval at a stage gate allows the department to move forward with future planning activities with remediation of specified risks occurring later.
• Is the information provided complete?
• Have Business Complexity Assessment scores been verified as reasonable?
• Have any conditions from Stage 1 been adequately addressed and status provided?
• Does the Executive Transmittal contain the appropriate signatures?
2.5 Baseline Processes & Systems

**Intent:** Confirm that the project team has a clear understanding of the current business processes and supporting systems. This "as-is" solution is necessary in order to:

- Accurately estimate the costs, schedule, and scope of the project;
- Successfully perform an effective alternatives analysis; and
- Provide potential vendors enough information to successfully conduct a procurement.

**Outcome:** Gives the project a baseline to assess impacts to people, process, and technology associated with the project. Later this “as-is” solution will be used for the “To-be” processes that are covered in PAL Stage 3.
This section focuses on the current business processes (including manual processes) and the supporting systems (also known as the current “as is” solution).

2.5 Baseline Processes and Systems

<table>
<thead>
<tr>
<th>2.5.1 Description</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2.5.2 Business Process Workflow</th>
</tr>
</thead>
</table>

Provide a description of the current baseline processes and supporting systems impacted by this proposal. Also include the system cost for both technology and program based on your Financial Analysis Worksheets.

Attach the current Business Process Workflow diagrams for all business processes related to this proposal. The workflow should include: Business Processes, Business Rules, Trigger Events, and Results/Outcomes. The Data Dictionary should also be submitted, if available.
Business and technical teams will collaborate to complete the information in the **Current Architecture Information**.

You can:
- Insert multiple business functions/processes that use the same application, system, or component.
- Insert additional applications, systems or components (as needed) that support a business function/process.
- Insert system software
- Insert business function/processes that use entirely different applications, systems, or components.
2.5 Baseline Processes & Systems

2.5.3 Current Architecture Information

Business Function/Process(es)

Application, System or Component:

COTS, MOTS or Custom:

- “Commercial off-the-shelf (COTS)” – a ready-made hardware or software (e.g., Microsoft Office).
- “Modified off-the-shelf (MOTS)” – Typically, a COTS product with source code made available to allow for modifications.
- “Custom Application” – Computer software developed for a specific customer.

For completely manual processes – Only identify the business process(es); no need to complete the entire table.

Application, System, or Component: You will enter the name of the application, system or component that supports the business process.

COTS, MOTS or Custom:

- “Commercial off-the-shelf (COTS)” – a ready-made hardware or software (e.g., Microsoft Office).
- “Modified off-the-shelf (MOTS)” – Typically, a COTS product with source code made available to allow for modifications.
- “Custom Application” – Computer software developed for a specific customer.
2.5 Baseline Processes & Systems

CURRENT SYSTEM – RUNTIME ENVIRONMENT

- **Cloud Computing Used?:**
  - If SaaS – Do not complete further Runtime Environment fields.
  - If PaaS or IaaS – Do not complete the Hardware field but complete the remaining Runtime Environment fields.

- **Server/Device Function:** Server/device function the current system leverages (e.g., Web service, database, network routers, workstations, tablets).

- **Hardware:** Hardware the current system leverages (e.g., IBM pSeries, HP Blade Server, etc.).

- **Operating System:** The operating system that the current system leverages (e.g., Microsoft Windows, UNIX, z/OS).

- **System Software:** The software leveraged by the current system (e.g., Oracle WebLogic Server, Microsoft SQL Server).
Type of Information: The types of information that require protection. See the SAM Section 5305.5 for more information.

- Personal – e.g., social security numbers, demographic information, and other Personally Identifiable Information (PII).
- Health – Diagnosis, treatment, provider, insurance, or billing information.
- Tax – Federal IRS, state or local tax information.
- Financial: Confidential or sensitive financial information (e.g., payment processing, salaries, budget, credit card numbers, contract amounts, etc.)
- Legal: Confidential or sensitive legal information (e.g., arrest records, court records, incarceration records, contracts, lawsuits, legal documents, attorney-client etc.)
- Confidential – Other types of confidential or sensitive information (e.g., business trade secrets, investigations, enforcement actions, etc.)
- Other – Other information that requires protection. NOTE: Even public information may need protection.
2.5 Baseline Processes & Systems

- **Protective Measures:** The information is currently protected.
  - Technical Security – Hardware and software security measures (e.g., firewalls, virus protection, intrusion detection/prevention, etc.) used to protect the networks, servers, workstations, and other devices in the infrastructure.
  - Identity Authorization and Authentication – The current system restricts access to specific persons or processes and who can create, read, update, or delete information.
  - Physical Security – Servers and network devices are secured with environmental security measures (e.g., door locks, surveillance equipment, etc.)
  - Backup and Recovery (Technology Recovery) – Data is backed up and stored offsite.
  - Other – The information is currently protected in another way.
Diagram should visually show the business processes and supporting systems, relationships between business processes, information, applications, technology, and interfaces, for the information in Section 2.5.3 Current Architecture Information.

The Security Categorization table should visually categorize and classify information assets (e.g., paper and electronic records, automated files, databases requiring appropriate protection from unauthorized use, access, disclosure, modification, loss, or deletion).

Refer to SIMM 5305-A Information Security Program Management Standard for additional information on security categorization. For details regarding the “Impact Table”, refer to Federal Information Processing Standards (FIPS) 199.
### Example Security Categorization Tables

#### Federal Information Processing Standards (FIPS)

<table>
<thead>
<tr>
<th>Security Objective</th>
<th>LOW</th>
<th>MODERATE</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confidentiality</strong>&lt;br&gt;Preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information.&lt;br&gt;[44 U.S.C., SEC. 3542]</td>
<td>The unauthorized disclosure of information could be expected to have a <strong>limited</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The unauthorized disclosure of information could be expected to have a <strong>serious</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The unauthorized disclosure of information could be expected to have a <strong>severe</strong> or <strong>catastrophic</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
</tr>
<tr>
<td><strong>Integrity</strong>&lt;br&gt;Guarding against improper information modification or destruction, and includes ensuring information non-repudiation and authenticity.&lt;br&gt;[44 U.S.C., SEC. 3542]</td>
<td>The unauthorized modification or destruction of information could be expected to have a <strong>limited</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The unauthorized modification or destruction of information could be expected to have a <strong>serious</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The unauthorized modification or destruction of information could be expected to have a <strong>severe</strong> or <strong>catastrophic</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
</tr>
<tr>
<td><strong>Availability</strong>&lt;br&gt;Ensuring timely and reliable access to and use of information.&lt;br&gt;[44 U.S.C., SEC. 3542]</td>
<td>The disruption of access to or use of information or an information system could be expected to have a <strong>limited</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The disruption of access to or use of information or an information system could be expected to have a <strong>serious</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
<td>The disruption of access to or use of information or an information system could be expected to have a <strong>severe</strong> or <strong>catastrophic</strong> adverse effect on organizational operations, organizational assets, or individuals.</td>
</tr>
</tbody>
</table>

High impact should be limited to the most sensitive information; such as law enforcement, national security, life/safety. Most state information is Moderate. Low is as rare as High impact.
### California Standards for Information Security Categorization

<table>
<thead>
<tr>
<th>Security Objective</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confidentiality</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A security principle that works to ensure that information is not disclosed to unauthorized persons. Information maintained by state agencies that are exempt from disclosure under the provisions of the California Public Records Act (Government Code Sections 6250-6265) or has restrictions on disclosure in accordance with other applicable state or federal laws. See SAM Section 5305.5.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Integrity</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The condition in which information or programs are preserved for their intended purpose; including the accuracy and completeness of information systems and the data maintained within those systems.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The reliability and accessibility of information assets to authorized personnel in a timely manner.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Example:* System ABC processes and stores Personally Identifiable Information (PII) as defined by Government Code. Loss of confidentiality would result in serious adverse effects to individuals.

*Example:* The information in system ABC is used to determine eligibility for benefits that may be the only source of funds for an individual or family. Loss of integrity would result in serious adverse effects on individuals in the form of delayed or misdirected payments.

This example is an adaptation of the FIPS 199 impact table that more closely represents the State of California’s definitions (SAM Section 5300.4).
PAL Stage 2 is like an open book test. You should take the test, but to complete the test sections, refer to the book (the Stage 2 scorecard) to know what is needed.

Prepare a Security Categorization Impact Table. This is an area where there may be some confusion. Review the example provided here. Additional assistance is available from the department’s Information Security Officer.

Be sure to assess and capture the impact of the changes from the project. Use PAL Stage 2 documentation to capture the “impact” associated with the changes the project makes to people, process, and/or technology.
Properly analyzing the "as-is" solution increases the probability of project success in the following ways:

(1) Improves the odds that risks and gaps are appropriately captured during project planning.
(2) Helps establish the baselines for the project which are necessary to set expectations about resources and to measure outcomes.
(3) Serves as an opportunity to socialize the coming changes by involving and empowering the people within the organization that will be impacted by the changes in the assessment which improves the odds that the project team will gain acceptance and support.
(4) Helps to avoid missed opportunities to improve the current system or process.
Alignment is Key

- This section should align with S1BA sections 1.7 Program Background and Context, 1.8 Strategic Business Alignment, and S2AA FAWs Existing Operations.

2.5 Baseline Processes & Systems should answer:

- What is the purpose of the process?
- Who benefits from the process?
- How does the process support the branch/division?
- How does the process support the mission of the state entity?
- What kind of information/data is involved in the process?
- At a high-level, how many staff (IT and Program/Business) are involved?
- At a high-level, what are costs for the existing system/process for both the IT and Program/Business?
2.6 Mid-Level Solution Requirements

**Intent:** Capture the specific conditions, functionality, quality of service, and capabilities a solution must have in order to meet the business objectives of the project as identified in PAL Stage 1.

**Outcome:** These requirements form the basis for the evaluation of multiple alternative solutions, selection of the alternative that will yield the highest probability of success, and the selection of an acquisition strategy/plan for procuring services. Later these will be used in the development of the Stage 3 detailed solution requirements.
Business Requirements Through Stage Gates

S1BA: “Business need and opportunity statement”
Business Case has the high level scope and business objectives needed to accomplish the goals of the project.

S2AA: “What the solution should do”
Mid-Level Requirements add detail to business objectives by defining functional, non-functional, and transitional requirements.

S3SD: “How the solution will work”
Detailed solution requirements based on the chosen approach that ensures the solution meets stakeholder needs.
Mid-level solution requirements specify the conditions, functionality, quality of service, and capabilities a solution must have in order to meet the business need or solve the business problem as described in the Stage 1 Business Analysis. Mid-level solution requirements enable an Agency/state entity to:

- Evaluate multiple alternative solutions based on Market Research conducted
- Determine which alternative will yield the highest probability of success
- Develop an acquisition strategy/plan for procuring IT goods and/or services, if needed

Use Cases may be used to document requirements. If used, detailed functional requirements will be required in Stage 3.

For the purposes of the Project Approval Lifecycle, mid-level solution requirements are sub-classified into:
- Functional requirements
- Non-functional requirements
- Project/transition requirements

See SIMM Section 170 & SIMM 180 Requirements Guidelines
## Sample Mid-Level Solution Requirements

<table>
<thead>
<tr>
<th>ID</th>
<th>Weak Requirement</th>
<th>Strong Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>“System must have a robust scheduling tool to maximize school testing capacity.”</td>
<td>“Schedule varying capacities of school testing. Design the solution to schedule 5,000 students in one transaction.”</td>
</tr>
<tr>
<td></td>
<td>1. “Robust” is subjective to the reader’s interpretation of the word unless “robust” is defined in the Glossary of terms with a measurable set of criteria for one to determine whether “robust” has been achieved.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. “Maximize school testing capacity” is not measurable as one can assume that school capacity will vary widely.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Who is doing the scheduling?</td>
<td></td>
</tr>
<tr>
<td>002</td>
<td>“System must feature the ability to search system for users by assigned identifier.”</td>
<td>“Assign unique identification to users. Design the solution to search for users by assigned unique identification.”</td>
</tr>
<tr>
<td></td>
<td>1. Only providing the “ability to” may require additional code not included in the existing contract.</td>
<td></td>
</tr>
<tr>
<td>003</td>
<td>“System must feature the ability for administrative users to add, modify, or delete school test coordinator accounts and information.”</td>
<td>“Design the solution to permit Administrators to add, modify, and delete school test coordinators and their corresponding user information.”</td>
</tr>
<tr>
<td></td>
<td>1. Providing the “ability to” may require additional code not included in the existing contract.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Using the word “or” may get you “add” but not “modify” and “delete”.</td>
<td></td>
</tr>
<tr>
<td>004</td>
<td>“System must allow administrative users to administer a practice test to students. The practice test must contain all the functionalities, accommodations and tools (e.g. calculator, spell check, graphing tools, visually based dictionary, dictionary, thesaurus, text pop out, measurement tools, electronic annotation, formula charts, and sketch pads) and range of items (e.g. TEIs) that will be available during the Summative and Interim tests.”</td>
<td>“Administrative users must be able to administer practice test(s) to students.”</td>
</tr>
<tr>
<td></td>
<td>1. This requirement contains too many prerequisite requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. This requirement contains disjointed requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. It is too long and not scorable; break them into 4 scorable requirements.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice tests, Summative and Interim tests must contain the same functionality, accommodations, tools, and range of items.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Functionalities, accommodations and tools include calculator, spell check, graphing tools, visually based dictionary, dictionary, thesaurus, text pop out, measurement tools, electronic annotation, formula charts, and sketch pads.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range of items include TEI.....”</td>
<td></td>
</tr>
</tbody>
</table>
Strive for simplicity when documenting requirements. Compound requirements are more difficult to score, implement, and verify. In order to ensure simplicity, requirements should adhere to the four “C’s”:

- **Clear** - Carefully select words that convey exact meaning and use correct grammar and simple sentence construction to avoid ambiguity.
- **Correct** - Present information accurately and precisely.
- **Complete** - Include important information.
- **Concise** - Eliminate unnecessary words, but not at the expense of clarity, correctness, or completeness.

Requirements should be measurable and testable. Project requirements need to be measurable, testable, and able to be confirmed as either met by the solution or not met.
Review Criteria: Section 2.6 Mid-Level Solution Requirements

• Do the mid-level solution requirements provide sufficient detail on necessary system functions?
• Are the project/transitioin requirements from current state to future state clearly described?
• Do the mid-level solution requirements validate the scope, complexity, and cost of the solution as stated in the FAWs?
2.7 Assumptions and Constraints

**Intent:** Documenting the project’s assumptions and constraints identifies the factors that will influence the development of the alternatives analysis.

**Outcome:** The assumptions and constraints help create a shared understanding among stakeholders of the factors that influence the project alternatives. They will also help identify risks and issues later in the project and define requirements for the procurement.
2.7 Assumptions and Constraints

Examples of Assumptions
- Replacement parts will be on site within four hours of notification
- New hardware is functional
- Normal availability of services and support
- Dedicated staff will remain in their current roles
- Dedicated staff will train one another

Examples of Constraints
- Hard deadline
- Predetermined budget
- Subject matter expertise
- Contract provisions
- Political reasons
- Resources
### 2.7 Assumptions and Constraints

<table>
<thead>
<tr>
<th>Assumptions/Constraints</th>
<th>Description/Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project receives the funding requested.</td>
<td>Department and Department of Finance support and commit the funding required for this project.</td>
</tr>
<tr>
<td>Maritime industry will support and utilize this solution.</td>
<td>The maritime industry is an important part of the process, and their support is required for project to successfully meet objectives.</td>
</tr>
<tr>
<td>Project will continue to be a high priority for Department.</td>
<td>The priority of this project is high, and it will remain at that level for the duration of the project.</td>
</tr>
<tr>
<td>Technology is available to create a solution.</td>
<td>The appropriate technology is available and will be used in the development and implementation of the project.</td>
</tr>
<tr>
<td>Oceanic Intrusive Species Control Fund (OISCF) will fund the OISP project.</td>
<td>Oceanic Intrusive Species Control Fund (OISCF) will provide the appropriate level of funding required for the OISP project.</td>
</tr>
</tbody>
</table>
2.8 Dependencies

**Intent:** Identifying the tasks or activities that need to be completed before others can proceed.

**Outcome:** Documenting dependencies helps projects identify and actively monitor interdependencies. It also helps identify areas of potential risk where risk mitigation and contingency planning is needed.
## 2.8 Dependencies

**Elements**

Dependencies are elements or relationships in a project reliant on something else occurring before the element can begin or continue.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The data dictionary must be completed prior to data migration.</td>
<td>Data migration from current format into the new solution may not begin until the data dictionary is completed.</td>
</tr>
<tr>
<td>Staff resources assigned to gather requirements.</td>
<td>Staff resources assigned to gather requirements are currently assigned to another project and will not be able to begin until the other project deliverables are completed.</td>
</tr>
</tbody>
</table>

**Descriptions**

The element’s description should highlight the manner a particular element relies on a specific enabling function, service, interface, task, or action to begin or continue.
Be specific about assumptions, constraints, and dependencies.
OK: Constraint on SME availability
BETTER: Constraint on Security SME availability
BEST: Constraint on Security SME availability first 2 quarters of the fiscal year.

Assumptions, constraints, and dependencies should be quantifiable when possible.
• How many dollars?
• How many days?
• How many PY?
• How much system capacity/ availability?
Review Criteria: Section 2.7 Assumptions & Constraints, and Section 2.8 Dependencies

• Keep in mind that all sections are reviewed in relation to each other and the project that you are planning to do.
  – For example, 2.7 Assumptions and Constraints and 2.8 Dependencies should align with the planning done for 2.12 Staffing Plan and 2.13 Data conversion/migration.

• Are assumptions and constraints reasonable, realistic, and supported by quantifiable information?

• Are dependencies reasonable and do they clearly describe the elements that are reliant on something else occurring before the element can begin or continue?
2.9 Market Research

**Intent:** To provide documentation that Market Research has been sufficiently conducted that identifies potential solutions for the business problems that the project is intended to address.

**Outcome:** A comprehensive understanding of the options available in the marketplace, thus facilitating effective decision-making relative to approach, procurement strategy, staffing decisions, and technology solution.
### 2.9 Market Research

#### 2.9.1 Market Research Methodologies/Timeframes

Methodologies used to perform market research (check all that apply):

- [ ] Request for Information (RFI)
- [ ] Internet Research
- [ ] Vendor Forums/Presentation
- [ ] Collaboration with other Agencies/state entities or governmental entities
- [ ] Trade shows
- [ ] Published Literature
- [ ] Leveraged Agreements
- [ ] Other, specify:

Time spent conducting market research:

Date market research was started:

Date all market research was completed:

#### 2.9.2 Results of Market Research

The MR results should include how long the MR was conducted, the results were analyzed, who was involved, how results effected requirements development and procurement methodologies, and how the results align with the recommended alternative.

#### 2.10 Alternative Solutions

**2.10.1 Solution Type**

- [ ] Recommended
- [x] Alternative

Refer to the MR Guidelines for guidance located at: [http://cio.ca.gov/otp/docs/Market-Research-Guidelines.pdf](http://cio.ca.gov/otp/docs/Market-Research-Guidelines.pdf)

Market Research (MR) determines:

- The business needs can be met by products/services available in the marketplace
- Commercial practices regarding customizing and/or modifying products are available
- How many vendors can provide a solution to the problem/opportunity.
## Market Research Chart

<table>
<thead>
<tr>
<th></th>
<th>Basic posting and sharing</th>
<th>Social monitoring</th>
<th>Importing social data</th>
<th>Social platform integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post to Twitter, Facebook</td>
<td>Share buttons</td>
<td>Badges &amp; buttons in email</td>
<td>Track clicks on posts</td>
</tr>
<tr>
<td>Neolane</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketo</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eloqua</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBM/Unica</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aprimo</td>
<td>X</td>
<td>X</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Pardot</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silverpop</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Act-On</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SalesFusion</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TreeHouse</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NetResults</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genius</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LoopFuse</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HubSpot</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

67
4. PLC MARKET OVERVIEW

In 2007, the most recent year for which complete data are available, the global PLC market was approximately $8.9 billion. Siemens (31.3% market share) and Rockwell Automation (22.1%) are the dominant vendors in this market, with a combined market share of more than 50%. Other large vendors are Mitsubishi Electric (12.7%), Schneider Electric (8.0%), Omron (6.1%), B&R Industrial Automation (3.6%), GE Fanuc (3.5%), and ABB (2.1%). Assorted smaller vendors make up the remaining 10.6% of the market. (4) Figure 3 gives the breakdown.

Figure 3. Chart showing 2007 PLC vendor share in the global market. (4)

Vendor market shares in different geographic regions vary considerably. For example, Siemens's industry division (including automation and SCADA systems) had more than half its 2009 revenues from European countries, while Rockwell Automation derived about half its sales from the United States alone. (5) (6)

Market share for vendors can vary considerably by industry as well as region. Figure 4 shows market share in the North American electric utilities market. In this market, Schneider Electric is the leading PLC vendor, with 45% market share, followed by Rockwell Automation (29%), Cutler Hammer (9%), and others (17%). (7)
Market Research Should Align to State Policies. Market research conducted should align with state contracting policies for a project of the scope & complexity of the particular project being evaluated.

Don’t Cheat your Project when it Comes to Market Research. Make sure that your research is current, comprehensive, and leverages information available from other departments.
Review Criteria: Section 2.9 Market Research

• Does it describe the methods used to conduct market research?
• Do the results reflect analysis from both an Information Technology and a Business perspective?
• Does the market research support the selection of the recommended solution?
**2.10 Alternative Solutions**

**Intent:** Document the analysis and thorough consideration that was given to each alternative that was considered. The analysis includes benefits/advantages and disadvantages evaluation of one alternative in contrast to other alternatives that were considered.

**Outcome:** Documenting the alternative analysis helps ensure that a diverse set of solutions was considered from multiple perspectives. Conducting a thorough analysis helps ensure that due diligence was given to assess each option and project costs are reasonable in comparison to competing solutions.
2.10 Alternative Solutions

2.10.1 Solution Type
- Recommended
- Alternative

2.10.2 Name
- Alternative 2

2.10.3 Description
Alternative 2 is a ready-made software solution that meets most of the objectives and has been implemented by other public and government entities. However, Alternative 2 adds one year to the implementation, has a higher cost than the Alternative 1 (Recommended), and does not provide the capability to meet all objectives without modifications.

Approach (check all that apply)
- Increase staff - new or existing capabilities
- Modify the existing business process or create a new business process
- Reduce the services or level of services provided
- Utilize new or increased contracted services
- Enhance the existing IT system

Name – Provide a unique name for the alternative considered.

Description - Include a brief description of the alternative, what it is, and why it was considered.

Approach – Identify the approaches that address the problems/objectives.
2.10 Alternative Solutions

2.10.1 Solution Type
- Recommended
- Alternative

2.10.2 Name
Alternative 1 - Business-based Procurement Solution

2.10.3 Description
Alternative 1 (recommended) utilizes a business-based procurement that will leverage vendor expertise and address requirements, provide a solution that meets the schedule and timeframe needed for implementation, and has been implemented by other public and government entities. The Market Research conducted identified five (5) vendors who have experience implementing solutions that address similar problems and objectives. Alternative 1 is estimated to cost less and will achieve the most benefits. Therefore, this approach provides the most effective approach to meet the required objectives.

Approach (check all that apply)
- Increase staff - new or existing capabilities
- Modify the existing business process or create a new business process
- Reduce the services or level of services provided
- Utilize new or increased contracted services
- Enhance the existing IT system
- Create a new IT system

Refer to Section 2.10.3 for specific instructions on the sections that are required to be completed for a business-based procurement

BUSINESS-BASED PROCUREMENT:

✓ When the approach is to perform a business-based procurement, some of the technical sections are deferred, as they will be defined by the bidders.

✓ Keep in mind that prior to contract award, all deferred sections of the Stage 2 Alternatives Analysis will need to be completed.

✓ The Department of Technology will review the updated Stage 2 Alternatives Analysis with the Stage 4 Project Readiness and Approval.
### 2.10 Alternative Solutions

#### 2.10.4 Benefit Analysis

**Benefits/Advantages**

<table>
<thead>
<tr>
<th>Benefits/Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the market research conducted and the financial analysis worksheets completed, Alternative 1 has a 10% estimated lower cost than the Alternative 2 or Alternative 3.</td>
</tr>
<tr>
<td>Alternative 1 provides an opportunity to leverage vendor expertise to implement the latest industry technologies and standards based on past performance and projects available.</td>
</tr>
<tr>
<td>Alternative 1 allows the Agency/state entity to partner with a vendor for more creative features within the solution to provide best benefit and value to the state.</td>
</tr>
<tr>
<td>Alternative 1 requires realized, tangible objective or benefit implementation before payment is made to the vendor. Therefore, there is increased incentive for the vendor to meet the implementation schedule and objectives.</td>
</tr>
</tbody>
</table>

**Disadvantages**

<table>
<thead>
<tr>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1 will be resource intensive.</td>
</tr>
<tr>
<td>Alternative 1’s architecture information will be deferred to Stage 4, which does not allow for up-front analysis on how the technical aspects of the solution will impact current architecture.</td>
</tr>
</tbody>
</table>

**BENEFIT ANALYSIS:**

- Also known as “Cost Benefits Analysis”
- Provides an overview of the tangible benefits or disadvantages of one alternative over the other alternatives considered
- Describes how the alternative meets certain functional requirements better than another
- Identifies the strengths and weaknesses of one solution over another

Use the “Insert Benefit/Advantage” or “Insert Disadvantage” to add benefits/advantages or disadvantages.
2.10 Alternative Solutions

**ASSUMPTIONS/CONSTRAINTS**

- Include costing assumptions, financial impacts, Federal or state mandates, etc.
- Provide how identified and determined
- This section is optional for business-based procurements

**ACHIEVE OBJECTIVES:**

- Estimate how long after project go-live that it will take before an objective is realized. This will help you to determine which alternative provides the best benefit.
- Add all your objectives from your Stage 1 Business Analysis proposal using the “Insert Objective Number.”

**ACHIEVE FINANCIAL BENEFITS:**

- Each financial benefit category should be identified as a business driver in the Stage 1 Business Analysis, Section 1.5
- A financial benefit category may be left blank
- Identify when the financial benefit is anticipated
2.10 Alternative Solutions

2.10.6 Implementation Approach

Implement the type of existing IT system enhancement or new system plan:

- Enhance the current system
- Develop a new custom solution
- Purchase a Commercial off-the-Shelf (COTS) system
- Purchase or obtain a system from another government agency (Transfer/Grant)
- Subscribe to a Software as a Service (SaaS) system
- Other, specify: ____________

Identify cloud services to be leveraged (check all that apply):

- Software as a Service (SaaS) provided by OTech
- Software as a Service (SaaS) provided by commercial vendor
- Platform as a Service (PaaS) provided by OTech
- Platform as a Service (PaaS) provided by commercial vendor
- Infrastructure as a Service (IaaS) provided by OTech
- Infrastructure as a Service (IaaS) provided by commercial vendor
- No cloud services will be leveraged by this alternative. Provide alternatives being leveraged:

**IMPLEMENTATION APPROACH:**

- Multiple IT system enhancements or new systems types may be proposed
- Cloud services (per SAM 4983) must be considered as an alternative
- Multiple functional groups may be part of a system implementation
- Identify what type of implementation (e.g., single, incremental, some now and other later) is proposed
- Mission critical and public facing must be housed in a Tier III or equivalent data center (per AB 2408)

**NOTE –** This section is deferred for alternatives using the business-based procurement approach (refer to Section 2.10.3).
2.10 Alternative Solutions

2.10.6 Implementation Approach

Identify the implementation strategy:

- All requirements will be addressed in this proposed project in a single implementation.
- Requirements will be addressed in incremental implementations in this proposed project.
- Some requirements will be addressed in this proposed project. The remaining requirements will be addressed at a later date.

Specify the year when remaining requirements will be addressed: 0000

What about Agile?
2.10 Alternative Solutions

Consider Including:

- Multiple business function/processes that use the same application, system, or component.
- Additional applications, systems or components (as needed) that support a business function/process.
- System software information.
- Business function/processes that use entirely different applications, systems, or components.

Business and technical teams should collaborate to complete each Alternative’s architecture information.
A Thoughtful Alternative Solution Analysis is Important.

- “Do nothing” is not an acceptable third alternative.
- Be sure to spend the time doing an equal level of analysis on Alternatives 2 and 3, as you did for Alternative 1, the Recommended Solution. Then compare these in the analysis.
- Only one alternative should be designated as “Recommended.”

Involve Your Enterprise Architect. The Enterprise Architect should be able to articulate existing system business concerns, alternative concepts, and help explore & evaluate alternatives.

Consider Available Reference Architectures. These resources have already been developed, so use them when identifying potential alternative solutions. See the Tools & Resources slides for a link.
Review Criteria: Section 2.10 Alternative Solutions

• Keep in mind that all sections are reviewed in relation to each other so the information provided should align across the sections and sub-sections.
  – For example, section 2.10.4 Benefit Analysis should align to S1BA 1.10 Business Problem or Opportunity and Objectives Table, and to the FAWs for each of the alternatives considered.

• Questions that are helpful to answer:
  – Does this lay a foundation on how this alternative could be implemented?
  – Does the solution align with the required functional, non-functional and transitional mid-level business requirements?
2.11 Recommended Solution

**Intent:** Documents the reasons for choosing and the details of the chosen solution. The rationale should include the factors that led the department to choose the recommended solution and why it represents the best business value.

**Outcome:** A clearly articulated rationale for the recommended solution garners support for the project and helps facilitate approval.
2.11 Recommended Solution

2.11.1 Rationale for Selection

RATIONALE FOR SELECTION:

✓ The information provided should be supported by:
  ✓ The disadvantages and why those disadvantages did not eliminate the alternative
  ✓ Advantages over other alternatives
  ✓ The market research conducted
  ✓ Overall program costs and benefits
  ✓ Consideration factors (e.g., alignment with strategies; availability of resources, funding, and contracting resources; etc.)
  ✓ Resources (time, funding, people, expertise)
  ✓ Why recommended and how it meets the objectives and requirements

This section auto-populates based on the Technical Complexity Score. Refer to SIMM 45 Appendices C and D for the Complexity Assessment self-assessment tool and instructions. Section 2.11.2 is deferred if a business-based procurement approach was used for the recommended solution.

The Complexity Zone will be used along with the Agency/state entity’s delegated cost threshold to determine the scalability of the remaining sections.

ATTACHMENT: Attach any relevant documentation that supports the rationale for the selection
2.11 Recommended Solution

2.11.1 Rationale for Selection

The recommended solution is to have a vendor implement a MOTS in a SaaS environment. This alternative was chosen because it was considered to be the best value to Department and meets the objectives as stated in the Stage 1 Business Analysis. The solution will align with Department strategic direction to use Cloud services whenever possible. It was deemed to be the best fit considering the degree to which the solution satisfied business objectives, leverages existing technology, and will also adhere to CA Dept. of Technology’s and the Department’s strategic directions. The risk of the solution was weighed against other alternatives and was judged to be lowest risk for meeting scope, schedule, and budget of the project, and was judged to provide a solid foundation for extensibility and adaptability to meet future changes to the program.

2.11.2 Technical/Initial CA-PMM Complexity Assessment

<table>
<thead>
<tr>
<th>Complexity</th>
<th>Complexity Zone</th>
</tr>
</thead>
</table>
| Technical Complexity Score: 1.4 | ○ Zone I Low Criticality/Risk
○ Zone II/III Medium Criticality/Risk
○ Zone IV High Criticality/Risk |
PROCUREMENT AND STAFFING STRATEGY:

- Identify the planned activities. These will contribute to your schedule, resources, and cost planning.
- This section is deferred for business-based procurements.
2.11 Recommended Solution

This section is completed if a contractor is responsible for the activity.

**Procurement Vehicle:** Select the type of procurement vehicle, such as: IFB/RFP, RFO/MSA, RFO/CMAS, ITMSA, NCB, RFQ, etc. Specify if “Other” is selected.

**Contract Type:** Select the contract type: Fixed price, time and materials, deliverables-based, percentage of benefit, savings-based, or other. Specify if “Other” is selected.

Use the “Insert Activity” to add more activities.
2.11 Recommended Solution

2.11.4 Enterprise Architecture Alignment

The target enterprise architecture is to reduce reliance on technology solutions that are either "homegrown" or are no longer supportable or that use outdated technologies that limit available expertise. Alternative 1 provides an opportunity to move toward the target enterprise architecture and will be based on the most relevant, state-of-the-art technology solutions available.

Information Technology Capability Table

<table>
<thead>
<tr>
<th>Information Technology Capability</th>
<th>Existing Enterprise Capability to be Leveraged</th>
<th>New Enterprise Capability Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public or Internal Portal/Website</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Public or Internal Mobile Application</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Enterprise Service Bus</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Identity and Access Management</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Enterprise Content Management (including document scanning and eForms capabilities)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Business Intelligence and Data Warehousing</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Master Data Management</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Big Data Analytics</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**ENTERPRISE ARCHITECTURE ALIGNMENT:**

- ✓ Describe how this proposal moves the Agency/state entity closer to the target enterprise architecture.
- ✓ Describe the reference architecture that the proposal is similar to.
- ✓ This section is deferred for business-based procurements.

**INFORMATION TECHNOLOGY CAPABILITY TABLE:**

- ✓ Describe the existing or new enterprise IT capabilities that are needed to meet business objectives of the proposal.
- ✓ No selection required if an IT capability is not applicable to the proposal.
- ✓ This section is deferred for business-based procurements.
### 2.11.5 PROJECT EXECUTING PHASES:

**PHASE**
- Identify project phases that are planned for the proposal
- Justify why phasing is not appropriate (if not used)

**DESCRIPTION**
- Describe the critical tasks, duration, major milestones, and major tasks

**PHASE DELIVERABLE**
- Describe the core functionality or deliverable that results from the phase completion

---

**Requirements Analysis Phase**

**Description**
The requirements phase uses the objectives from Stage 1 and mid-level solution requirements from Stage 2 to develop and document the related functional, non-functional, project and transition requirements into measurable and traceable, consistent, and stake-holder approved requirements. The Requirements Analysis Phase duration:
- Functional requirements developments is anticipated to take approximately three months
- Requirements Traceability Matrix projected to take two weeks to create and project go-live.
- Baseline for requirements change control, design, and testing will take two weeks to create and go-live.
- Test Master Plan will take two weeks to create and go-live.

**Phase Deliverable**
- Functional Requirements document that provides detailed, measurable requirements.
- Requirements Traceability Matrix that links requirements to their originating project life cycle.
- Establish a baseline for requirements change control, design, and testing.
- Test Master Plan that documents and communicates tasks and activities, adequately tested and can be successfully implemented.
2.11 Recommended Solution

### 2.11.6 High Level Proposed Project Schedule

<table>
<thead>
<tr>
<th>Activity Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 3 Solution Development</td>
<td>9/1/2015</td>
<td>2/29/2016</td>
</tr>
<tr>
<td>Solicitation Development</td>
<td>9/1/2015</td>
<td>12/31/2015</td>
</tr>
<tr>
<td>Requirements</td>
<td>10/1/2015</td>
<td>3/31/2016</td>
</tr>
</tbody>
</table>

### 2.11.7 Cost Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Proposed Plan</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Total Proposed Project</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>Average Proposed Operational Cost</td>
<td>$750,000</td>
</tr>
</tbody>
</table>

*Use the “Insert Activity Name” to add more activities.*
### 2.11 Recommended Solution

#### 2.11.7 Cost Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Proposed Planning Cost:</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Total Proposed Project Cost:</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>Average Proposed Operations Cost:</td>
<td>$750,000</td>
</tr>
</tbody>
</table>

#### SECTION 2.11.7 COST SUMMARY

**TOTAL PROPOSED PLANNING COST:***
- All costs for planning activities conducted in **Stage 2 through Stage 4**
- Planning costs can be found on the FAW Summary where the “Total Cost” row and “Planning Total” column intersect

**TOTAL PROPOSED PROJECT COST:***
- All project costs for planning (Stage 2 through Stage 4) and project costs (design, development, & implementation), plus one year of M&O costs.
- Planning and project costs can be found on the FAW Summary tab where the “Total Cost” row and the “Project Total” column intersect.

Use the **SIMM 19 F – Financial Analysis Worksheets** to complete this section.
Estimating in terms of project and schedule is very important. Recommendation is to get the most experienced people that you can to help form the basis of your estimates.

Evaluate existing IT Policies. Include an evaluation of existing IT Policies in the analysis of the recommended solution. For example, the state’s Cloud First Policy (SAM 4983.1).

Include Security. Include Security in the analysis and work associated with identifying the Recommended Solution.
Review Criteria: Section 2.11 Recommended Solution

• Does the proposed solution meet the required mid-level business requirements identified in Section 2.6 Mid-level Solution Requirements?
• Do the high-level project phases cover expected tasks?
• Are the project timelines reasonable for completion of the work?
• Does the financial summary align to the information found in the FAW Proposed Project and Operations and corresponding BCP worksheets?
• Are security and privacy needs well-defined and consistent with SAM, SIMM, and NIST requirements?
2.12 Staffing Plan

**Intent:** Documents the approach to staffing the project including the capacity and capability of the business/program, IT, or administrative areas to resource the project while maintaining ongoing operations. This section also captures contingency plans when resources are not available to staff specific areas of the project.

**Outcome:** Identifies how and when staff will be allocated to ensure the project have access to sufficient staff with the appropriate skillsets and experience. This section also identifies the impact the project will have on existing operations and associated mitigation strategies.
2.12 Staffing Plan

2.12.1 Administrative

• Administrative resource capacity and capability needed to maintain ongoing operations while the project takes place.

2.12.2 Business Program

• Existing business program resource capacity and capability needed to maintain the business operations that will be impacted by this proposal.
• Describe how you will maintain ongoing program operations in conjunction with proposed project workload.

2.12.3 Information Technology (IT)

• IT resource capacity and capability needed to both support this proposal and maintain existing responsibilities.
• Describe how you will maintain ongoing operations while the proposed project or any other initiative is underway.
2.12 Staffing Plan

2.12.4 Testing

- Testing program resource capacity and capability that will support all stages of testing.
- Describe the dedicated resources to be assigned to support testing and adequately describe the skills and experience of these resources.

2.12.5 Data Conversion/Migration

- If this proposal will require data conversion/migration activities, provide a brief description of the plan.
- Describe the capacity and capability of the Agency/state entity’s resources that will support this effort.

2.12.6 Training and Organizational Change Management

- Training and organizational change management resource capacity and capability needed to support this proposal.
- Describe any business disruption and customer impacts which are anticipated to result from this project.
Describe the capacity, skill, and knowledge of your procurement program and resources that will support the procurement effort (solicitation development, bidding, evaluation, contract award, etc.). Include the skills and experience of these resources that will be dedicated to support procurement activities.

Address the following:

- Does the Agency/state entity’s governance framework include procurement-related decision-making in addition to project decision-making?
- Does the Agency/state entity’s procurement office have experience using the proposed procurement methodologies identified in section 2.11.3 Procurement and Staffing Strategy? Does the Agency/state entity’s procurement office have experience using the STPD Streamlined Template?
- Is the Agency/state entity’s procurement office familiar with the different protest formats available, specifically the use of Public Contract Code (PCC) 6611?
2.12 Staffing Plan

2.12.8 Project Management
2.12.8.1 Project Management Risk Assessment

- Use SIMM Section 45 A & B to determine the Project Management Risk Assessment score
- Attach an electronic copy of the Project Management Risk Assessment

**2.12.8.1 Project Management Risk Assessment:**
Used to evaluate such elements as:
- Will the project require the addition of someone or some group to be successful?
- Do you have organizational commitment to the project?
- Do you have competent and available project management team members?
- Do you have project management tools and infrastructure?
The PM Risk Assessment includes 4 sections. The first 3 sections cover organization, governance, and processes and are completed in Stage 1. The section shown above is Proposed Project Manager Capability and is completed in Stage 2.

Each entry is based on the project’s self-assessment of the proposed project manager’s capability on a range from 0 to 4, with 4 representing a high capability.

This is intended to reflect the capability of the resource that will manage your project, not the resource managing PAL.
2.12 Staffing Plan

Section 2.12.8.2 Project Management Planning

✔ Identify the status of each of the plans/artifacts
✔ If a plan/artifact is “Not Applicable,” provide a reason why it is not needed or applicable.
2.12 Staffing Plan

2.12.9 Organization Charts

Attach the organization charts to show the project reporting relationships for all parties involved in the project. The information should include the number of staff and their classification, as follows:

- Project Team (e.g., project manager, PMO support, program analysts, SMEs, architects, systems analysts, software developers, quality assurance analysts, requirements analysts, etc.)
- Procurement Team (e.g., procurement official, procurement official backup, procurement management, contract manager, legal reviewer, information security officer reviewer, budget manager/reviewer, SMEs, etc.)
- IT Team
- Business Sponsors and Key Stakeholders
- Vendor staff (if known prior to Stage 3)
- IV&V and IT Project Oversight Relationships
- Impacted program(s) organization chart
- Agency/state entity organization chart

Use the “Insert Attachment” to add more than one organization chart.
Not all Project Management Plans have to be completed, and those that do have to be completed, are not necessarily completed at the same time.

• Identify which project management plans are necessary and the status of those plans, indicating when the project expects they will be completed. For those plans determined as not-applicable, indicate why.

• Generic plans are not acceptable. The planning articulated in the plan needs to be specific to your project.

• Use the Sample Library, but do not cut and paste. Use the templates and samples as a starting point, but you must tailor these plans for the context of your project.

PAL is asking for a Project Org Chart, not the broader department’s organization chart. Show relationships between project and stakeholders, the business team, procurement team, technical team, and decision-makers/governance:

• Do you have the people identified?
• Do you have the appropriate reporting structure to facilitate decision making?
• Are the appropriate lines of responsibility drawn?
Essential Practices

2.12 Staffing Plan

**Don’t underestimate the importance of the Staffing Plan.** This is about Resources, Skills, and Knowledge. Talk about how you are considering resources with specialized skills in each of these areas.

**Ask for help if you need it.** If you don’t have clarity that you have the appropriate resources, then say so here during the PAL so that CDT can work with you to develop a strategy for remediating that project risk.

**Don’t forget about Procurement and Security.** Be sure to include Security and Procurement in your staffing plan.
In the review of section 2.12 the following questions will be asked of the responses:

- Does the staffing plan address the resource needs anticipated for the project?
  - As an example, if the project creates an externally facing interface, are resources (for example a project’s Public Information Officer for the communication pieces and technical staff to manage the interface) identified in the staffing plan?

- Does the project need CA-PMO help to meet the project’s resource needs?
2.13 Data Conversion/ Migration

**Intent:** Ensures that the organization has considered the different elements of data conversion/migration that may be needed to successfully deliver the project.

**Outcome:** Conduct discovery and analysis to identify what data needs to be extracted, transformed, and/or loaded; how that would happen; and do so in a way that ensures data quality and security.
2.13 Data Conversion/ Migration

Identify the status of each of the following data conversion/migration activities:

- Data Conversion/Migration Planning
- Data Conversion/Migration Requirements
- Current Environment Analysis
- Data Profiling
- Data Quality Assessment
- Data Quality Business Rules
- Data Dictionaries
- Data Cleansing and Correction

If a plan/artifact is “Not Applicable,” provide a reason why it is not needed or applicable.

Use the “Insert Attachment” to add more than one completed data conversion/migration activity document.

- Identify the status of each of the data conversion/migration activities with “Not Started,” “In Progress,” “Completed,” or “Not Applicable”
- If a plan/artifact is “Not Applicable,” provide a reason why it is not needed or applicable.
## 2.13 Data Conversion/ Migration

<table>
<thead>
<tr>
<th>Activity</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Data Conversion/Migration</td>
<td>The process of outlining all required project processes and activities to ensure successful data conversion/migration and the creation of a comprehensive set of plans to manage the data conversion/migration project from initiation until the implementation phase (e.g., establish scope, roles and responsibilities, and data governance; identify risks, constraints, assumptions, data conversion/migration requirements, project team, and data preparation).</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td>Data Conversion/Migration</td>
<td>The conditions that must be met in order to deem the data conversion/migration successful.</td>
</tr>
<tr>
<td>Requirements</td>
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<tr>
<td>Current Environment Analysis</td>
<td>The process of gathering and compiling information about the current environment to create a blueprint of the current legacy data architecture.</td>
</tr>
<tr>
<td>Data Profiling</td>
<td>The process of examining the data available in an existing data source (e.g., a database or a file) and collecting statistics and information about that data.</td>
</tr>
<tr>
<td>Data Quality Assessment</td>
<td>The process of exposing technical and business data issues in order to plan data cleansing and data enrichment strategies.</td>
</tr>
<tr>
<td>Data Quality Business Rules</td>
<td>A business rule expresses specific constraints on the creation, update, and removal of data within a business function. For example, the record of a purchase order may not be entered if the customer's credit rating is not adequate.</td>
</tr>
<tr>
<td>Data Dictionaries</td>
<td>A data dictionary is a centralized repository of metadata or information about data, such as its relationship to other data, related business rules, its format and default values. Typically, a data dictionary provides a descriptive list of names, definitions, and attributes of data elements to be captured in an information system or database. It describes the definitions or the expected meaning and acceptable representation of data for use within a defined context of data elements within a dataset.</td>
</tr>
<tr>
<td>Data Cleansing and Correction</td>
<td>Data cleansing (or data cleaning, data scrubbing) is the process of detecting and correcting (or removing) corrupt or inaccurate records from a record set, table, or database.</td>
</tr>
</tbody>
</table>
Data Conversion/ Migration activities are intended to ensure the cleanliness and integrity of the data after the project. To do this the documentation should:

- Qualify the work associated with being able to convert and migrate the data.
- Identify what work is necessary to ensure the cleanliness and integrity of the data.
Review Criteria: Section 2.13 Data Conversion/ Migration

- Does the submission identify the status of data conversion/migration activities?
- Is information about completed data conversion/migration activities attached to the submission?
- If no data migration/conversion is necessary, is the rationale for this clear?
2.14 Financial Analysis Worksheet

**Intent:** Documents financial analysis to enable the comparison of current operations costs to proposed alternative costs and financial benefits. FAWs also identify quantity and source of financial resources needed to implement the proposed alternative.

**Outcome:** Provides a detailed financial analysis that contributes to good investment decisions, project transparency, and accountability. The FAWs identify the total estimated project cost, the financial impact to future operation costs, and the funding source.
Attach the FAWs for this proposal. The FAWs should document the cost and resource assumptions the Agency/state entity made during the Project Approval Lifecycle. The FAWs provide a standard format for documenting the projected costs and financial benefits of the current method of operation and the proposed alternative.
Completing this FAW section is the cost benefit analysis. There is a cost benefit/ risk-reward associated with the project. That is what the Financial Analysis Worksheets (FAWs) are designed to capture.

Alignment is key. All positions and Operating Expenses & Equipment (OE&E) line items on the FAW should align to the submissions within the sections of the Stage 2 form.

Don’t forget M&O. Be sure to include estimates for Maintenance & Operations (M&O) in your FAW.
Review Criteria: Section 2.14 Financial Analysis Worksheets

- The following questions will be asked of the FAWs worksheets:
  - Does the description information for the top 3 alternatives align with section 2.10 Alternative Solutions?
  - Does the existing cost worksheet align to section 2.5 Baseline Processes and Systems?
  - Does the Funding Plan percentage vertically total 100% by section/budget year?
  - Do the staffing and resources indicated cover the activities in all project phases outlined in section 2.11 Recommended Solution and 2.12 Staffing Plan?
When can I request resources?

Project Management Lifecycle (PMLC)

Project Approval Lifecycle (PAL)
- Business Analysis
- Alternatives Analysis
- Solution Development
- Project Readiness & Approval

System Development Lifecycle (SDLC)
- Plan
- Analyze
- Design
- Build
- Test
- Implement
- Maintenance & Operations

Monitoring & Controlling

Timing of Resource Request

Planning Funding for PAL Stages 2, 3, and 4 can be requested with an approved S1BA.

Project Funding (Executing Process Phase activities) can be requested in a separate BCP with an approved S2AA.
Stage Gate Review & Approval

• The review and approval of PAL documents will vary based on the quality of the documents submitted.
  – CDT may request further information, clarification, or complete additional research prior to recommending stage gate approval.
  – Remember to dedicate resources to completion of PAL activities—treat PAL like a project.
What We Covered Today…

• This training covered
  – PAL’s role in IT Project Delivery
  – Role of “Critical Partners” and “Core Team” in PAL
  – Stage 2 Preliminary Assessment
  – Stage 2 Alternative Analysis
Questions?
Ask The Experts
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<tr>
<th>Tool Name</th>
<th>References Form Section</th>
<th>Note or Links</th>
</tr>
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<tbody>
<tr>
<td>Project Approval Lifecycle forms and instructions (SIMM 19)</td>
<td>All</td>
<td><a href="http://www.cio.ca.gov/Government/IT_Policy/SIMM_19/SIMM19.html">http://www.cio.ca.gov/Government/IT_Policy/SIMM_19/SIMM19.html</a></td>
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<tr>
<td>CA-PMF Sample Library</td>
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<td>Link to California Project Management Framework Templates page</td>
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<td>Understanding Agile</td>
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<td>Concept Development and Readiness Assessment Template</td>
<td>2.3.1 Preliminary Assessment</td>
<td>Link to California Project Management Framework Templates page</td>
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<tr>
<td>Complexity Assessment Template (SIMM 45C) and instructions (SIMM 45D)</td>
<td>2.3.2 Business Complexity Assessment</td>
<td>SIMM 45 C Complexity Assessment Template <a href="http://www.cio.ca.gov/government/it_policy/simm.html">http://www.cio.ca.gov/government/it_policy/simm.html</a> and <a href="http://www.cio.ca.gov/pdf/simm/45/SIMM_45_App">http://www.cio.ca.gov/pdf/simm/45/SIMM_45_App</a> endix_D_2016_0506.pdf</td>
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<td>Gate 2 Evaluation Scorecard, Parts A (SIMM 19B.5) and B (SIMM 19B.6)</td>
<td>2.5 Baseline Processes and Systems</td>
<td><a href="http://www.cio.ca.gov/Government/IT_Policy/SIM">http://www.cio.ca.gov/Government/IT_Policy/SIM</a> M_19/SIMM19.html</td>
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<td>2.5.5 Security Categorization</td>
<td><a href="http://www.cio.ca.gov/Government/IT_Policy/SIM">http://www.cio.ca.gov/Government/IT_Policy/SIM</a> M/SIMM5305_A.PDF</td>
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<tr>
<td>Gate 2 Mid-level Solution Requirements Template (SIMM 19B.3)</td>
<td>2.6 Mid-level Solution Requirements</td>
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<td>Cloud Security Certification</td>
<td>2.10.7 Architecture Information</td>
<td><a href="https://www.fedramp.gov/">https://www.fedramp.gov/</a></td>
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<td>History of Software Vulnerabilities</td>
<td>2.10.7 Architecture Information</td>
<td><a href="https://cve.mitre.org/cve/cve.html">https://cve.mitre.org/cve/cve.html</a></td>
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<tr>
<td>FIPS 140-2 Validated Encryption Products</td>
<td>2.10.7 Architecture Information</td>
<td><a href="http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140val-all.htm">http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140val-all.htm</a></td>
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Thank You!

PAL Training Team

Contact Us @
CIOPALTraining@state.ca.gov