**VistA Adaptive Maintenance VAEC Security**

**(VAM2)**

Contractor Project Management Plan



Department of Veterans Affairs

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# Introduction

This Contractor Project Management Plan (CPMP) lays out the approach, timeline, and tools to be used in delivering the VistA Adaptive Maintenance VAEC Security (VAM2) project. This CPMP defines how the VAM2 project will be executed, monitored and controlled, and closed in accordance to the VA Integration Process (VIP). It will be progressively elaborated by updates throughout the course of the VAM2 project.

This CPMP includes the strategy for coordination and execution of planned, routine, and ad hoc data collection reporting requests as identified within the PWS. This CPMP is meant to be a communication vehicle for ensuring the key stakeholders of VAM2 share a common understanding of the VAM2 project.

While this CPMP is the plan that defines how the VAM2 project is being executed, monitored, controlled, and closed, the VAM2 project’s schedule is a separate document that lists planned dates for performing tasks and activities to meet milestones identified in this CPMP.

## Project Overview

VAM2 is meant to Manage, plan, develop, design, integrate, test, and implement centralized services to provide comprehensive, real-time 24/7 monitoring and security for all Veteran data in all VistA systems migrated to the VA Enterprise Cloud.

In other words, VAM2 is meant to be Data-Driven, minimally-invasive intelligent auditing and alerting classifier system of RPC inquires in to the VistA.

Table 1: PWS Task Areas

|  |  |
| --- | --- |
| PWS/TASK | Summary of Task Requirements |
| 5.1 Project Management | 1. CPMP 2. Monthly Progress Report 3. VA Privacy and Information Security Awareness and Rules of Behavior Training Certificate 4. Signed Contractor Rules of Behavior 5. VA HIPAA Certificate of Completion 6. Onboarding Status Report, |
| 5.2 Adaptive Maintenance Services | 1. Comprehensive RPC Interface Audit Report 2. MUMPS RPC to JSON Model Data Definition 3. Version Description Document (VDD) 4. Automated CloudWatch Configuration 5. Security Vulnerability Report |
| 5.3 Testing | 1. Master Test Plan 2. RPC Interface Test Suite |
| 5.4 Assessment and Authorization (A&A) Support | Update the following VAEC A&A artifacts quarterly, as applicable.   1. System Security Plan 2. Security Configuration Plan 3. Information System Contingency Plan 4. Incident Response Plan 5. Privacy Impact Assessment 6. Risk Assessment 7. Security Configuration Checklist (SCC) 8. System Interconnection Agreements (MOU and Interconnection) 9. Interconnection Security Agreement 10. Signatory Authority |
| 5.5 Initial Operating Capability (IOC) Support | 1. Production Operations Manual 2. Deployment and Installation Guide 3. User Manual |
| 5.6 Release and Deployment Support | 1. Capacity, Performance, and Scalability Assessment for National Deployment |

## Project Scope

The VAM2 Project will provide the complete audit, analysis, and translation of the entire VistA RPC interface into a modern machine-processable form, to be operationalized and scaled for

production enterprise use on the VAEC CloudWatch monitoring tool in order to provide a

comprehensive cloud-based VistA RPC Interface monitoring and security for all VistA systems

migrated to the VAEC.

The following will be provided over the life of the project:

1. Support for Project Management,
2. Software Design and Development,
3. System Testing,
4. Cybersecurity Testing and Remediation,
5. Performance & Regression Testing,
6. System and Software Documentation,
7. Risk and Defect Management,
8. Release and Deployment, and
9. Support for Authority to Operate (ATO), and A&A assessment.

## Technical Approach

**AbleVets LLC (AbleVets)** shallprovide VistA adaptive maintenance by providing enhanced Veteran data security via comprehensive VistA RPC content audit and monitoring so that all VAEC-deployed VistA systems are adequately secured.

AbleVets shall:

* + 1. Complete the analysis of the MUMPS code for the remainder of the 5500 RPC interfaces and perform modeling to identify, for each RPC:

1. Types, categories, and volumes of data it accesses (e.g., does the RPC affect

pharmacy, laboratory or other clinical applications only or does it affect all/most

VistA applications?),

1. Actions it performs (e.g., does it perform read only functions or does it also allow

write access to the patient record?),

1. Sensitivity of the data it handles (e.g., is the data Protected Health Information

(PHI) or is it non-PHI?), and

1. End-users, applications, and clients accessing the system (e.g., is it a legitimate

end user, or a rogue client/intruder?).

* + 1. Provide and document the comprehensive audit of the complete VistA RPC Interface (all

5,500 MUMPS RPC calls), and translation of this MUMPS code into a machine-processable form that is implementable within the VAEC-resident CloudWatch tool.

Deliver a MUMPS RPC to JSON model data definition that represents the outcome of the

audit and MUMPS to JSON model translation.

* + 1. Provide a quarterly Version Description Document (VDD) which details the progress to

completion of the complete audit and model translation for all 5,500 VistA RPCs.

* + 1. Scale the interface monitor for production deployment.
    2. Provide an Automated CloudWatch Configuration which automates the capture, storage, monitoring and audit of all RPC traffic in the VAEC-resident CloudWatch COTS tool on a continuous and fully automated basis.
    3. Pull RPC traffic from CloudWatch, and based on comprehensive audit, automatically

classify and quantify RPC traffic to:

* 1. Identify all clients accessing VistA data via the RPC interface.
  2. Identify all users accessing VistA data via the RPC interface
  3. Identify and audit all types, volumes and categories of data being accessed via the RPC interface, with an indication of sensitivity
     1. Configure CloudWatch to generate real-time alerts and alarms based on identified

vulnerability and sensitivity conditions of RPC traffic. Demonstrate the success of the

Automated CloudWatch Configuration operational performance by providing a fully

automated validation of the completeness and correctness of the RPC interface audit.

* + 1. Produce a Security Vulnerability Report including:

• Number and type of clients accessing Veteran data.

• Number and type of users accessing Veteran data.

• Volumes and types of data being accessed, and an indication of sensitivity of   
 data accessed.

## Goals and Objectives

As VA continues to strengthen its cybersecurity profile, the VAM2 effort will provide the following benefits:

1. reducing the cost and complexity of maintenance of VistA systems,
2. resolving severe security vulnerabilities of all VistA systems migrated to VAEC,
3. taking full advantage of the features and scaling of VA’s new commercial cloud capabilities, and
4. ensuring the safe, secure, and seamless continuity of veteran care and services as VistA systems are migrated to the VAEC.

## Stakeholders and Key Personnel

Stakeholders (listed in Table 5) have different interests and expectations for the VAM2 project; they must be identified in the beginning of the project and continuously validated in order to meet all of stakeholders requirements. Identifying stakeholder expectations

* Provides the VAM2 team with an understanding of the stakeholders’ perspective
* Ensures all expectations of the stakeholders are being addressed
* Instills stakeholders trust and cooperation
* Defines the projects approach to meet requirements and validates the design through-out lifecycle

Table 2: Stakeholders

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Office of Information and Technology (OI&T)** | | | | |
| **Team Member** | **VA Email** | **Proxy** | **Phone** | **Responsibility** |
| Dr. Rafael Richards | [Rafael.Richards@va.gov](mailto:Rafael.Richards@va.gov) | Cheryl Owsley | 202-469-1527 | Business Owner |
| Christopher Brown | Christopher.brown1@va.gov | Cheryl Owsley |  | System Owner |
| Cheryl Owsley | [Cheryl.Owsley@va.gov](mailto:Cheryl.Owsley@va.gov) | Dr. Richards |  | VA PM |
| Dana Newcomb | [Dana.Newcomb@va.gov](mailto:Dana.Newcomb@va.gov) | Michael Weckescar | 732-440-9680 | Contracting Officer |
| Michael Weckesser | [Michael.Weckesser@va.gov](mailto:Michael.Weckesser@va.gov) |  | 732-795-1097 | Contract Specialist |
| Robert Goode | [Robert.Goode@va.gov](mailto:Robert.Goode@va.gov) | Tom Spinelli | 202-461-4304 | Contracting Officer’s Representative (COR) |
| Bobbi Begay | Bobbi.Begay@va.gov | Chery Owsley |  | Information Security Officer |
| Jeff Miller | [Jeffrey.Miller7@va.gov](mailto:Jeffrey.Miller7@va.gov) | Avinay Vaswani | 703-400-6859 | Account Executive, AbleVets |
| Tom Willcox | [Tom.Willcox@ablevets.com](mailto:Tom.Willcox@ablevets.com) | Nilesh Lal | 703-915-7688 | CIO, AbleVets |
| Christy Lentile | [Nancy.Lentile@va.gov](mailto:Nancy.Lentile@va.gov) | Avinay Vaswani |  | Portfolio Director, AbleVets |
| Nilesh Lal | [Nilesh.Lal@va.gov](mailto:Nilesh.Lal@va.gov) | Christy Lentile | 240-476-5359 | Program Manager, AbleVets |
| Conor Dowling | [Conor.Dowling@va.gov](mailto:Conor.Dowling@va.gov) | Mike Furoyama | 310-980-7954 | Software Architect, Caregraf |
| Renton Nip | rentonnip@gmail.com | Mike Furoyama | 808-927-0999 | Manager, HRG |
| Mike Furoyama | [Michael.Furoyama@va.gov](mailto:Michael.Furoyama@va.gov) | Conor Dowling |  | Sr. Developer , HRG |

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# Project Organization

The organizational structure, as illustrated in Figure 1, is designed to ensure that appropriate management and technical leadership is provided in all key areas of the effort.

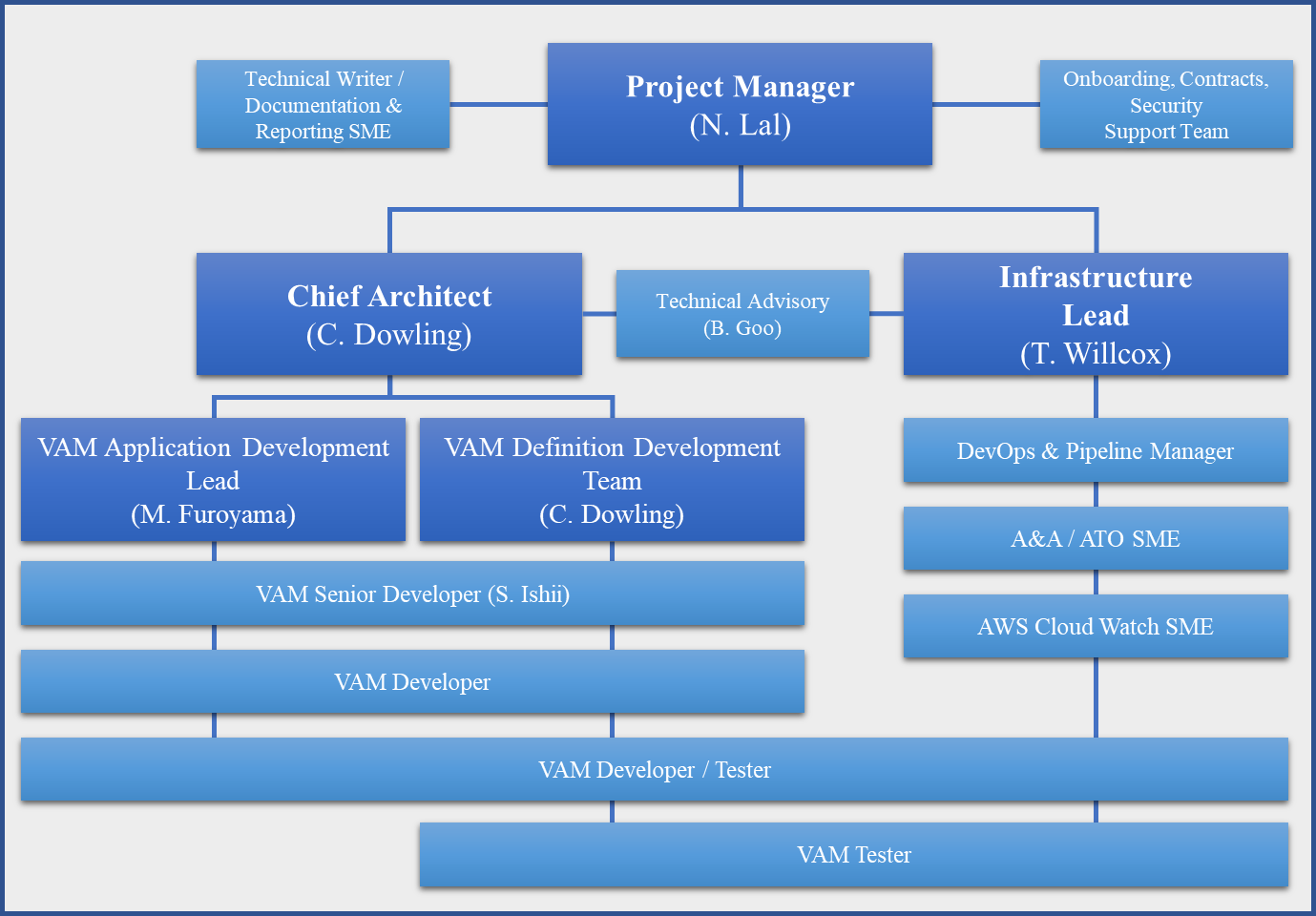


Figure 1: Organizational Structure

Strategic level: The VA PM is responsible for providing the overall programmatic direction to the AbleVets team. The VA PM and COR will be the final approval authority for VAM2 deliverables. In addition, VA PM will be responsible for:

* Monitoring the contract to ensure that obligations are successfully met and maintained by Team AbleVets
* Monitoring the performance of Team AbleVets to ensure services meet required standards and actions for non-performance set out in the contract are adhered to
* Managing changes permitted under the contract and managing changes not provided for under the contract

Operational Level: The Project Manager (PM) and Chief Architect are responsible for leading the development and delivery of all contract deliverables for this project; they are accountable for the program and ensure quality delivery and support to the client.

# Testing

The details for testing during the VAM2 can be found in the VistA Adaptive Maintenance VAEC Security (VAM2) -- CLIN 0003AA Master Test Plan. The VistA Adaptive Maintenance VAEC Security (VAM2) -- CLIN 0003AA Master Test Plan document summarizes the testing approach, key objectives, test tools, and test data output for the VistA Adaptive Maintenance VAEC Security (VAM2) project. The document introduces:

* Test Strategy: The rules upon which testing will be based and the process for establishing valid tests to output sound test data. The project’s test strategy will address the scheduling of test events, entry and exit criteria, and test data management.
* Execution Strategy: Describes how tests will be performed.
* Test Management Plan: Details test design, execution, and the process for test event issue resolution.

Also, as part of the Testing and Reporting segment of the VAM2 project, CLIN003AB - RPC Interface Test Suite (due on 05-02-2019) has been? created for developer level tests and execution schemes for the following functional segments:

* RPC Monitor
* RPC Mirror
* RPC Definition Models

# Monitoring and Control Mechanisms

The purpose of Monitoring and Control Mechanisms is to provide an understanding into the project’s progress so that appropriate corrective actions can be taken when the project’s performance deviates significantly from the plan.

## Budget Monitoring

The AbleVets Estimate at Completion (EAC) tool (sample depicted in the figure below) is used to define the cost to complete any given level of effort in the Work Breakdown Structure (WBS) and depicts planned financial elements (number/type of project staff, projected number of hours per week/month, and labor rate) throughout the duration of the contract. After contract award, the budget is updated monthly to display planned financial information against actuals. The Project Manager reviews the VAM2 EAC Tool (budget) every month to ensure the project stays within the allocated funding.

Figure 2: Sample EAC



## Schedule Monitoring

The VAM2 project schedule will be monitored at least weekly to ensure the activities are performed on the dates as prescribed by the schedule. By performing regular reviews, possible issues can be identified early and resolved before they become problems. Other benefits to monitoring the schedule includes better use of resources, ability to manger unexpected changes, ensure the Project Team is focused on the tasks, and ensure related tasks are executed in the correct order. Monitoring of the schedule includes:

* Updating tasks; dates, dependencies, resources and percentage complete
* Entering additional tasks if required
* Validating the critical path is not impacted by any changes
* Checking the amount of slack on the critical path
* Confirming High Risks tasks have enough time to be completed
* Validate Milestones completion dates

See Section 6, *Work Breakdown Structure (WBS) and Schedule*, for more information on the project schedule.

## Risk Monitoring

Monitoring risks are part of the risk management process and involve continuous evaluation of the risks. All team members are responsible for the identification, mitigation, and monitoring of the project risks. The Project Manager is responsible for tracking and validating the risks mitigation plans and updating risks registry based on input from the VAM2 Project Team.

See Section 7, Risk Management Plan, for more information on risk management.

# High-Level Build Schedule

Build schedule is online in GitHub: <https://github.com/vistadataproject/RPCDefinitionToolkit/blob/master/README.md>

# Project Success Criteria

The success of the VAM2 contract is based on meeting contractual requirements, exceeding VA management expectations, and developing positive working relationships with all stakeholders. The following list contains the project success criteria to include, but not limited to:

* Customer satisfaction
* Effective decision making in managing change
* Project schedules with realistic and obtainable delivery dates
* Minimal/no scope creep
* Effective coordination with subcontractors
* Effective control and communication over progress, and
* Immediate communication of project issues with open discussions on resolutions
* Product meets User Requirements
* Project is executed within budget
* Meets schedule milestones
* Meets Quality criteria
* Product is easily maintainable
* Meets Clients Expectations

# Communication Management Plan

AbleVets will use a comprehensive bi-directional communication approach that strategically engages stakeholders. Establishing and maintaining formal and informal communication channels with our clients and team is a key to success. AbleVets understands that quality communi­cation, includes formal and informal mechanisms both face-to-face and through electronic media and will ensure stakeholder involve­ment via multiple communications mechanisms for each task. Our project status communication approach includes:

Intra-project communication is crucial because of staggered sequencing and interdependencies among project tasks and potential geographic separation amongst AbleVets and government stakeholders. To promote intra-project team communications, AbleVets will conduct Weekly Status Meetings. During these meetings we will:

* Review of any strategic or enterprise news impacting project (i.e., VA-wide policies, new direction, etc.)
* Review status of Actions from Last Meeting – go thru each action and convey or solicit status from team
* Review Technical Status – review of key milestones/activities from previous week, and plan for this week at high-level.
* Review the Deployment/Infrastructure Status – review of key milestones/activities from previous week, and plan for this week at high-level
* Review Management Processes (GitHub Tools) – Review of key milestones/activities from previous week, and plan for next week
* Discuss Contracting/Misc – contractual or other items warranting discussion
* Review of Action Items Captured during the meeting

# Risk Management Plan

Risk is defined as an uncertain event or condition that has a probability of occurring and could have either a positive or negative impact to at least one of the project’s objectives should that risk occur. A risk may have one or more causes and, if it occurs, one or more impacts. All projects assume some element of risk, and it is through risk management where tools and techniques are applied to monitor and track those events that have the potential to impact the outcome of a project.

Risk management focuses on identifying potential problems before they occur. Proper planning for and handling risks help avoid adversely impacting the project’s objectives and goals. The risk management process includes the following four steps:

* Identify Risk—The effort associated with determining whether or not a risk event might affect the project and the documentation of the risk’s characteristics. Team members provide information on suspected event occurrence. The entire project staff is responsible for communicating the likelihood of risks and the associated characteristics of that risk.
* **Analyze Risk**—The effort associated with evaluating the probability of a risk occurring and the impact to the project and with determining a risk severity ranking.
* **Response Planning**—The effort associated with developing the mitigation and contingency plans to minimize or eliminate the impact of a risk. Mitigation strategies are developed for risks determined to have an impact on the project. Plans for mitigation are tracked until either the risk exposure has been satisfactorily reduced or the risk averted.
* **Monitoring and Control**—The effort associated with making decisions regarding initiating appropriate controls and tracking a risk until the risk is no longer a threat. Risk status is tracked and monitored throughout the lifecycle of a project.

These processes are performed on an ongoing, continuous basis throughout the project’s period of performance.

## Identify Risks

The primary purpose of Risk Management is to identify potential impacts early so that they may be mitigated to help ensure project success. Risk management ensures risks are formally addressed at the beginning (Sprint planning) and end (Sprint Review and Retrospective) of each Sprint; risks are part of the meeting agenda. Risks will be identified and documented by the entire team. During the daily scrum meetings only risks that need to be updated or newly identified will be discussed.

For new risks, the Project team will be asked to estimate the probability and the impact. Based on the probability and impact; the risk severity will be determined. High severity risks will be documented and tracked in the Risk Registry. Refer to Section 7.3, Risk Registry, for more details.

## Risk Analysis

Risk Analysis encompasses evaluation of probability, impact, severity, and prioritization. The purpose of risk analysis is to bolster the risk definition into becoming decision making information. During this process, risks are analyzed in detail to assess the amount of risk, to identify which ones are most important, and how they relate to each other. Response to minimize the risks will be determined and documented.

### Risk Probability

The probability of the risk event occurring in a selected unit of time (e.g. per day, per two-week Sprint, per month, during the project) is a subjective estimation based on an analysis of the team or Risk Owner. The probability estimate requires knowledge of the activity, experience or historical data. The Risk Probability Matrix is shown in Table 4. The distribution of the 20-40-60-80 rule provides the basic five probability categories necessary for quantitative analysis.

Table 3: Risk Probability Matrix

| Risk Probability Rank | Likelihood of Event |
| --- | --- |
| 5 – Almost Certain | > 80% – Risk event expected to occur |
| 4 – Likely | 60-80% – Risk event more likely to occur |
| 3 – Moderate | 40-60% – Risk event may or may not occur |
| 2 – Unlikely | 20-40% – Risk event less likely to occur |
| 1 – Rare | < 20% – Risk event not expected |

### Risk Impact

The impact to the project if a risk occurs is estimated in terms of the criteria that are important the stakeholders. The Risk Impact Matrix assists with rating the impact of each risk relating to safety, financial, schedule, adverse image/publicity and customer service/business interruption. The Risk Impact Matrix, Table 5, reflects IT Engineering Support project’s criteria.

Table 4: Risk Impact Matrix

| Risk Impact Rank | Cost or Schedule impact | Scope or Quality |
| --- | --- | --- |
| 5 – Potentially Catastrophic | GREATER THAN 20% | Final contract deliverables fail to meet customer needs. |
| 4 – Major | 10 – 20% | Final contract deliverables content and quality unacceptable to customer. |
| 3 –Moderate | 5 – 10% | Major impact in final contract deliverables content and quality requiring customer approval. |
| 2 – Minor | LESS THAN 5% | Relatively minor impact to contract deliverables content and quality. |
| 1 – Insignificant | No or negligible variance | Very minor impact to contract deliverables content and quality. |

### Risk Severity

Using the Risk Severity Matrix, the risk severity will be calculated by the likelihood and the impact. Risks that fall in the red zone (high risk) will be documented and a response from Program Management will determine if the issue requires a code change. If the risk response requires development work it will be added to the backlog.

Probability and impact information is used to determine risk severity. The Risk Probability Matrix is illustrated in Table 6.

Table 5: Risk Severity Matrix

|  |  | Risk Consequence (Severity) | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Insignificant | Minor | Moderate | Major | Severe |
| Risk Consequence (Severity) | Almost Certain | LOW | MEDIUM | HIGH | HIGH | HIGH |
| Likely | LOW | MEDIUM | MEDIUM | HIGH | HIGH |
| Moderate | LOW | LOW | MEDIUM | MEDIUM | HIGH |
| Unlikely | LOW | LOW | LOW | MEDIUM | MEDIUM |
| Rare | LOW | LOW | LOW | LOW | MEDIUM |