Department of Veterans Affairs

Medical Appointment Scheduling System (MASS)

Contract #VA118-15-D-0129 (IDIQ)

Task order # TO 0001

Initial Conversion Mapping Plan



Prepared by:



8521 Leesburg Pike, Suite 600

Vienna, VA 22182

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Program Manager

Systems Made Simple (SMS) a Lockheed Martin Company

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# Introduction

The Department of Veterans Affairs (VA), Veterans Health Administration (VHA) is facing unprecedented challenges providing prompt access to care. The Veterans Health Information Systems and Technology Architecture (VistA) Scheduling application is an aging system with limited extensibility to provide patient-centric and resource-based scheduling in support of advanced care delivery models. To address this challenge, the Veteran experience is enhanced through an improved scheduling process utilizing Epic’s Cadence Scheduling software. Cadence provides resource supply management, increased usability, additional Veteran engagement opportunities, and greater access to care for our nation’s Veterans.

The enterprise-wide Medical Appointment Scheduling System (MASS), enabled by Cadence, will manage the appointment lifecycle, improve clinical resource management, and inform VHA management at all organizational levels with real-time business, resource utilization and demand, supply, and quality service metrics intelligence. To be successful, The MASS implementation will aim to exceed defined critical Success Criteria measurements. The implementation will address critical challenges for stakeholder and user adoption across the enterprise, seamless integration with the more than 126 unique VistA instances, and preserve local autonomy while introducing nationally standardized rules and workflows.

## Scope

To address the requirements of Task Order (TO) 0001, TeamSMS will initiate the 60-day (41 business days) MASS Initial Site Assessment and Planning for Pilot activities. The actions outlined under this TO include analyzing and identifying business and user needs. Implementation plans will be developed across all identified work-streams to guide successful and measureable implementation of Cadence at the proposed Pilot site.

The TO 0001 Performance Work Statement (PWS) scope calls for the development of a comprehensive series of plans that detail the overall project plan, schedule, and detailed success criteria designed to successfully perform implementation of the Epic Cadence Scheduling software and related Infrastructure and Integration at one Pilot-site. During the Planning state, TeamSMS shall identify and prepare Project Management Accountability System (PMAS) and ProPath artifacts for the MASS Pilot-site implementation, including the initial version of 18 plans.

## Purpose

Conversions are transfers of historical data between two different databases in preparation of go live. This activity commonly takes place via interfaces (Health Level 7 [HL7] v2) or imports. Conversions are typically performed to provide continuity of access to historic information during the transition from one system to another. This plan will guide you through the process of conversions to reach a successful conversion for a seamless transition to MASS.

# Dependencies to Success

*This will be completed as part of the final release.*

The following are dependencies on having a successful data conversion.

* Access to production databases for testing purposes
* Completed data mapping
* Subject matter experts to review and validate test loads
* Execute end use validation of converted data

# Key Project Participants

*This will be completed as part of the final release.*

## Conversion Project Owner

*This will be completed as part of the final release.*

* Defines, manages, and documents overall conversion project goals, timelines, and dependencies
* Acquires and coordinates resources necessary to accomplish analysis, testing, and validation
* Coordinates conversion teams across different applications
* Escalates risks and resource needs
* Holds the project team accountable to defined project milestones

## Application Coordinators

*This will be completed as part of the final release.*

* Define and create application validation scripts
* Manage application validation
* Manage conversion build and record mapping

## Legacy System Experts

*This will be completed as part of the final release.*

* Understand real world use cases and workflows of the legacy system
* Define and incorporate key business requirements as part of initial scoping
* Communicate legacy system concepts to application project coordinators/leads familiar with MASS concepts

## Subject Matter Experts

*This will be completed as part of the final release.*

* Understand real world use and workflows of the legacy system
* Support creation of application validation scripts
* Apply knowledge of future state MASS application workflows to conversion data validation activities

## Conversion Developers

*This will be completed as part of the final release.*

* Design and develop extracts from legacy systems according to needs defined by application analysts
* Assists in troubleshooting during various testing phases

## Lead Conversion Analyst

*This will be completed as part of the final release.*

* Defines, delegates, and manages technical tasks
* Assesses the quality of completed technical tasks
* Identifies and escalates risks associated with technical project tasks

## Conversion Analysis

*This will be completed as part of the final release.*

* Define the integration pattern by which extracted source system data will be communicated to MASS.
* Troubleshoot conversion errors
* Understand MASS data structures and document technical specifications detailing target data elements
* Interpret the defined scope and defined business requirements for each dataset in the creation of each technical specification

## Database Administrators

*This will be completed as part of the final release.*

* Communicate with technical and external database analysts
* Monitor system performance and disk consumption in real time
* Identify filing rate bottlenecks
* Prepare and refresh environments as needed

1. Conversion Process

*This will be completed as part of the final release.*

## Project Staffing and Scope Definition

*This will be completed as part of the final release.*

### Staff Conversion Team

*This will be completed as part of the final release.*

* See Section 4 for roles needed

### Define Conversion Scope

*This will be completed as part of the final release.*

* The conversion team, application teams, and project leadership will be involved in defining conversion scope. This should include considering the technical feasibility and weighing the benefits of converting legacy data.
* Items to consider for conversion
  + Patients
  + Future Appointments
  + Schedulable Orders

### Prepare for Build and Testing

*This will be completed as part of the final release.*

* Align build timelines with conversion testing

## Project Preparation

*This will be completed as part of the final release.*

### Generate Hardware Sizing Estimates for Conversions

*This will be completed as part of the final release.*

* Utilizing the number of total visits and total patients, generate a sizing estimate for the conversion
* See Appendix B for a hardware estimation tool.

### Define Conversion Environment Strategy

*This will be completed as part of the final release.*

* Define the environment that will be used for conversion testing
  + If during analysis it is decided to use multiple environments, define the specific activities that will occur in each environment during this step
* Denote the intended mechanism for build migration and dependencies with project build migration timelines
* Denote planned environment refreshes and dynamic data wipes
* Define the disk space allocated for the environment and ensure it is sufficient for the largest scale of testing that will occur

## Develop Validation Strategy

*This will be completed as part of the final release.*

### Estimate the Resources Required for Validation

*This will be completed as part of the final release.*

* Estimate the resources required for validation
  + Create a rough estimate of the total number of resources that will be required to complete validation for the conversion
  + Identify the personnel required at all stages of the validation
  + Consider the overall timeline and complexity of conversion datasets when estimating the number of resources required

### Develop Validation Strategy

*This will be completed as part of the final release.*

* Create a sampling method that takes into account the full chronological scope of the converted data

### Schedule Validation Resources

*This will be completed as part of the final release.*

* Identify resources and schedule time to execute validation sessions

### Define Required Data Elements

*This will be completed as part of the final release.*

* Work with business stakeholders to identify and document all required data elements

### Identify Conversion Cutover Strategy

*This will be completed as part of the final release.*

* Analyze each dataset to determine the appropriate cutover strategy
* Define a strategy for when the full conversion loads will occur and if any incremental loads will be necessary

## Execute Conversion Build and Mapping Strategy

*This will be completed as part of the final release.*

### Execute the Data Mapping Plan

*This will be completed as part of the final release.*

Refer to the *Initial Data Mapping Plan, v1.0* and the *Initial Data Remediation Plan, v1.0* for specifics regarding the data mapping and remediation.

### Create Conversion Validation Scripts that Define the Methods for Validating Converted Data

*This will be completed as part of the final release.*

* Include the validation of database level filing, end-user display, and use within workflows
* Updates to scripts may be necessary as testing occurs if modifications to conversions occur
* See Appendix C for a link to the Appointment validation Scripts

### Prepare for Testing

*This will be completed as part of the final release.*

* Complete all associated build that testing is dependent on within the defined test environment
* Application teams will complete MASS build and mapping, then migrate it to the conversion environment
* Only a subset of the conversion data will be required for small scale testing
* All conversion build and mapping must be complete prior to large-scale and full-scale conversion testing

### Prepare Conversion Test Data and Format Conversion Data

*This will be completed as part of the final release.*

* Obtain conversion test data as defined in the approved conversion scope

## Conversion Testing

*This will be completed as part of the final release.*

* You must complete several different levels of testing for your conversion. Each should be done with production information
  + Communication testing
  + Small-scale testing
  + Large-scale testing
  + Full-scale testing

### Communication Testing

*This will be completed as part of the final release.*

* Verify messages can reach MASS from the data source (source system or extract)
* This does not require filing any data to the MASS database

### Small Scale Testing

*This will be completed as part of the final release.*

* The objectives of this initiative are as follows:
  + Successfully file a small number of test messages into the conversion environment
  + Validate each data element in the messages file appropriately
  + Validate that the converted data is available to end users to act upon in the appropriate activities
* The filed messages should include all data elements that will be converted
* Updates to configuration, build, or message structure may be necessary during this initiative
* Document all changes and migrate them to all appropriate environments
* The Application Coordinators must confirm all data elements function in MASS as expected during this step.

### Large Scale Testing

*This will be completed as part of the final release.*

* The goal of this testing initiative is to file a large volume of test messages, evaluating the completeness of the build and mapping as well to capture performance and sizing metrics.
* Prior to the start of testing, all build and mapping should be complete and any issues found during small scale testing should be resolved.
* The volume of messages filed during this step should represent a significant portion of the full message volume
* Measure database sizes prior to starting this testing to capture accurate metrics.
* If configuration, build, or message structure changes need to be made as a result of testing outcomes they should be documented and migrated to all appropriate environments.

### Full Scale Testing

*This will be completed as part of the final release.*

* The objective of full scale testing is to file the full conversion dataset into a test environment
* Resolve all issues identified during large scale testing prior to the start of full scale testing
* If configuration, build, or message structure changes need to be made as a result of testing outcomes they should be documented and migrated to all appropriate environments.

## Production Loads

*This will be completed as part of the final release.*

### Perform Production Loads

*This will be completed as part of the final release.*

* Monitor the growth of the production datasets
  + Ensures the server has sufficient space for the full conversion
* Monitor the filing rate of the production load
  + Ensure the filing rate is expected, if it is not, find the root cause and develop a mitigation or resolution plan
* Validate the database level filing of the converted data per the technical specifications
* Validate the end-user display and basic functionality of the converted production data
* Complete 50-100 patient schedule comparisons

### Complete Cutover Steps

*This will be completed as part of the final release.*

* Complete incremental conversion loads (if defined in cutover plan)

###### Acronyms

| Acronym | Description |
| --- | --- |
| COTS | Commercial off the Shelf |
| IIB | IBM Integration Bus |
| IV&V | Independent Verification and Validation |
| HL7 | Health Level 7 |
| MASS | Medical Appointment Scheduling System |
| OI&T | Office of Information and Technology |
| PMAS | Project Management Accountability System |
| POC | Point of Contact |
| PWS | Performance Work Statement |
| SLA | Service Level Agreement |
| SME | Subject Matter Expert |
| TO | Task Order |
| VA | Department of Veterans Affairs |
| VHA | Veterans Health Administration |
| VistA | Veterans Health Information Systems and Technology Architecture |

###### Hardware Estimation Tool

*This will be completed as part of the final release.*

###### Appointment Validation Scripts

*This will be completed as part of the final release.*