

16d. Integration Framework

16d.1 Integration Framework

16d.1.1. Integration Framework Overview Tasks

Commonwealth's Integrated Public Safety System program includes the integration of disparate public safety and justice information systems so that they can dynamically exchange new application relevant data in near real-time. A key element of Motorola's integrated solution is the Integration Framework (IF) tool, which provides an application server platform and justice specific services that enable any number of current or future applications to exchange information via a simple star network topology. Unlike a point-to-point data-exchange network architecture where individual interfaces must be developed between all communicating applications, the star topology enables application integration tasks to be limited to:

Defining the information flows within the integrated system by means of a series of use cases. Use Cases analysis includes sequence diagrams (e.g., data flows between applications) and actions (e.g., an operator manually enters an element of data), which are triggered by steps in public safety and justice agency workflows. Motorola will refine the use cases presented in the Integration Framework Technical Description during the Requirements Analysis phase. These workflows and use cases will be recorded in a requirements document approved by the Commonwealth.

Defining and developing a single application-to-IF interface (IF connector) for each application to be integrated into the IF:

- PMDC Message Switch Connector
- Local Wants & Warrants Database #1 (TBD)
- Local Wants & Warrants Database #2 (TBD)

Programming the IF process models to implement use cases that require information exchange via IF.

Configuration of IF services based on the results of the Requirements Analysis and High Level Design tasks:

- Lexical Query Service configuration
- Web Portal Database
- Mobile User Directory
- Agency Directory
- Security Services

Installation of IF and verification of integrated system performance against the set of use cases.

- Administrator training

The main functional deliverables of the Integration Framework subsystem include the following:

- Inter-Switch Text Messaging.
- Local Wants and Warrants Query
- Web Portal

Needs Assessment to determine Integration Framework extensions for:

- Inter-Switch Text Messaging for Additional Message Switches
- Additional Local Wants & Warrants Database
- Application of Integration Framework technology to Inter-Agency workflow integration

16d.1.2. Integration Framework Validation and Design

During the Integration Framework Validation and Design phase, Motorola will work with the Commonwealth to gather, analyze and validate requirements, and perform high-level design of the Integration Framework subsystem, individual product connectors, Integration Framework services and databases in support of the Inter-Switch Text Messaging feature, Local Wants & Warrants Query feature, and Web Portal feature.

Motorola will provide the following documents:

- System Requirements Specification (SRS)
- Function Requirements Specification (FRS)
- Interface Control Document (ICD)
- Initial Data Configuration Description

Descriptions of each:

System Requirements Specification (SRS), containing a description of agreed upon workflows (scenarios) and use cases, including primary processing sequences and processing extensions, or variations supported with the Use Case.

Functional Requirements Specification (FRS), containing a description of agreed upon features describing:

- Inter-Switch Text Messaging features
- Log In to PMDC Client
- Log Out of PMDC Client
- Send Inter-Switch Text Message
- View Inter-Switch Text Message
- Reply to Inter-Switch Text Message

- Forward Inter-Switch Text Message
- Remove Inter-Switch Text Message
- Lookup Inter-Switch Text Message Agencies / Users
- Create Incident Group
- Remove Incident Group
- Subscribe to Incident Group
- Unsubscribe from Incident Group
- Query Incident Group
- Local Wants and Warrants Query features
- Send Person Query to State
- Integration Framework Web Portal GUI Design
- Web Portal Module Design Template, common to all participating Web Portal agencies (up to 5)
- Identify Web Portal Agency Design Graphics
- Identify Web Portal general behavior characteristics
- Integration Framework Web Portal features
- Log In to Web Portal
- Log Off from Web Portal
- Send Inter-Switch Text Message
- View Inter-Switch Text Message
- Reply to Inter-Switch Text Message
- Forward Inter-Switch Text Message
- Remove Inter-Switch Text Message
- Lookup Inter-Switch Text Message Agencies / Users
- Create Incident Group
- Remove Incident Group
- Subscribe to Incident Group
- Unsubscribe from Incident Group
- Query Incident Group
- Add Bookmarked Site
- Remove Bookmarked Site
- Sequence Bookmarked Sites
- View Bookmarked Site
- View Auth-Mapped Site
- Send Local Wants and Warrants Query
- View Local Wants and Warrants Reply
- Remove Local Wants and Warrants Reply
- Post News Bulletin (Agency Site Manager)
- Remove News Bulletin (Agency Site Manager)
- Create Distribution Group (Portal Agency Administrator)
- Edit Auth-Mapping for Agency User (Portal Agency Administrator)
- Update Agency Auth-Mapped Internet Site (Portal Agency Administrator)
- Add Agency Portal User (Portal Agency Administrator)
- Modify Agency Portal User (Portal Agency Administrator)
- Remove Agency Portal User (Portal Agency Administrator)
- View Portal Site Traffic (Portal Agency Administrator)

Interface Control Document (ICD), for each external system interface identified during the Requirements Analysis efforts. An ICD will be produced for:

- Local Wants and Warrants Database #1
- Local Wants and Warrants Database #2
- Premier MDC Message Switch Connector

Initial Data Configuration Description for the Lexical Query Service translations. This will be a preliminary configuration document, used for the implementation phase. Motorola requires this document to be revised through the implementation, testing and deployment phases to reflect changes in the Commonwealth System.

Motorola Responsibilities

- Participate in customer requirements gathering sessions at the customer site in the Commonwealth
- Develop draft System Requirements Specification for review by the Commonwealth
- Develop draft functional requirements document for the Inter-Switch Text Messaging feature and submit for review by the Commonwealth.
- Develop draft functional requirements document for the Local Wants and Warrants Query feature and submit for review by the Commonwealth.
- Develop draft functional requirements document for the Integration Framework Web Portal and submit for review by the.
- Develop Web Portal specific designs for five agencies identified by the Commonwealth STARS project team and Motorola.
- Work with the Commonwealth to identify and document data mappings (the Information Model) among the Local Wants and Warrants databases and the PMDC Message Switch, as required.
- Work jointly with the Commonwealth to finalize the System Requirements Specification, the Functional Requirements documents, Interface Control Documents and Data Configuration Description document supporting the Inter-Switch Text Messaging, Local Wants and Warrants Query and Web Portal features.
- Submit final Documents to the Commonwealth for approval.

Commonwealth Responsibilities

- Establish user teams containing subject matter experts to work with Motorola to develop and analyze system requirements, including resources knowledgeable with the Local Wants and Warrants databases.
- Review the draft System Requirements Document, Functional Requirements Documents and Interface Control Documents and identify in writing any specific deficiencies found within twenty (20) business days of receipt of each document.
- Review and approve the final System Requirements Specification Document, Functional Requirements Documents and Interface Control Documents.
- Select two Local Wants and Warrants Databases for incorporation with the Integration Framework meeting one of the following two criteria: (1) the database may provide an Application Programming Interface to application logic controlling access to the underlying database. The API shall use a socket connection and a well-defined protocol such as XML to define the message structure. Or (2) the database may provide a controlled (restricted) to the required data view using JDBC or ODBC interfaces.
- Procure necessary approvals from the owning jurisdiction granting STARS project query access to the required Wants and Warrants data for Person queries.
- Procure necessary approvals from the owning jurisdiction granting STARS project query access to the PMDC Message Switch selected jointly by the STARS project and the Motorola project team for use with the Inter-Switch Text Messaging feature. The selected PMDC Message Switch may require a software update to participate in the Inter-Switch Text Messaging system.
- Coordinate as needed with other agencies that will utilize the Inter-Switch Text Messaging feature.
- Provide suitable graphical content (machine readable graphical images) for each agency selected as a Web Portal Agency.

Completion Criteria

This task is considered complete upon the acceptance and sign-off of the final System Requirement Specification, Functional Requirements Specifications and Interface Control Documents.

16d.1.2.1. Integration Framework Implementation

Motorola will create Integration Framework connectors and configure Integration Framework Services according to the requirements and designs approved in the Validation and Design phase.

Motorola Responsibilities

- Design, configure and integrate the PMDC Message Switch with the Integration Framework according to the requirements and designs approved by the Commonwealth and Motorola.
- Design, configure and integrate the two selected Local Wants and Warrants databases according to the requirements and designs approved by the Commonwealth and Motorola.
- Design, configure and integrate the Web Portal according to the requirements and designs approved by the Commonwealth and Motorola.
- Conduct internal peer and formal design reviews in accordance with standard Motorola processes and procedures
- Prepare a software documentation package in accordance with standard Motorola processes and procedures
- Motorola will provide a staging location for integration testing the Inter-Switch Text Messaging feature
- Provide IF platform and commercial-off-the-shelf (COTS) software requirements to Virginia
- Develop final acceptance test procedures (ATPs) in accordance with the test plans
- Establish a Commonwealth test bed at Motorola for initial system level functional verification. The test bed will use production hardware supplied by Commonwealth
- Populate the test bed with all applications that interface through IF
- Perform Application Level testing
- Install Commonwealth IF application and connect into the test bed
- Perform Integrated Application Level testing

Commonwealth Responsibilities

- Provide access to Local Wants and Warrants Databases for the purpose of characterizing the query interface.
- Provide test message content cleared for use by Motorola developers for each of the Local Wants and Warrants Databases.
- Provide any changes as required and agreed during Requirements Analysis to Local Wants and Warrants Databases.
- Provide final version graphical content (machine readable graphical images) for each agency selected as a Web Portal Agency.

Completion Criteria

This phase will be considered complete when Motorola's internal implementation functional tests are complete and internal documentation is complete.

16d.1.2.2. Integration Framework Integration Testing

Motorola will perform Integration Testing at the Motorola facility. The test procedures will test the requirements as specified in the System Requirements Specification.

Motorola Responsibilities

- Perform Integrated System Level testing in accordance with ATP. This testing will verify system operation against the use cases
- Document all test results.

Commonwealth Responsibilities

- Ship all Customer purchased hardware to the Motorola facility for installation and integration testing.
- Provide resources as required at the Motorola facility to support the system integration environment installation and configuration for deliverables incorporated in the Commonwealth System.

Completion Criteria

This task will be considered complete when the system successfully passes Acceptance Test Procedures with no Severity A defects.

16d.1.2.3. Integration Framework Deployment

Upon completion of the factory Integration Tests, the system will be shipped to the Commonwealth STARS data center in Richmond, Commonwealth for facilitization and configuration.

Motorola Responsibilities

- Transport test bed components and applications to the Commonwealth and reinstall with remaining system elements
- Work jointly with the Commonwealth to establish connectivity to external systems.
- Install and configure delivered systems to meet specific site network requirements.
- Install and perform final configuration for Integration Framework connectors to the two Local Wants and Warrants databases, the Virginia State Police Premier MDC Message Switch, the selected second Premier MDC Message Switch.
- Install and perform final configuration of Integration Framework Web Portal for the five selected agencies.
- Install and perform final configuration of Mobile User Directory, Agency Directory and Web Portal Database.

Commonwealth Responsibilities

- The Commonwealth will provide the connectivity agreement with organization responsible for the selected second Premier MDC Message Switch for the purpose of Inter-Switch Text Messaging.
- The Commonwealth (Commonwealth jurisdiction) will provide high speed, high availability LAN connectivity between Virginia State Police PMDC Message Switch and the mutually agreed second PMDC Message Switch.
- Commonwealth (Commonwealth jurisdiction) will provide high speed, high availability LAN connectivity between the Integration Framework and the two agreed Local Wants and Warrants Databases.

Completion Criteria

This task will be considered complete when the system can pass application build and configuration verification tests and network connectivity tests.

16d.1.2.4. Integration Framework On-Site Testing

Motorola will perform On-Site testing of the configured systems in accordance with the Test Plan.

Motorola Responsibilities

- Perform System Level testing in accordance with ATP. This testing will verify system operation against the use cases
- Document all test results.

Commonwealth Responsibilities

- Witness System Level acceptance testing
- Approve the results of System Level acceptance testing

Completion Criteria

This task will be considered complete when the system successfully passes Acceptance Test Procedures with no Severity A defects.

16d.1.2.5. Integration Framework Training

The objective of this task is to train the Commonwealth Information System administrators to control and maintain the IF application. Training will be conducted according to the Training Plan.

Motorola Responsibilities

- Establish training plans and schedules
- Provide minimum background requirements for student population
- Prepare lesson plans
- Prepare training material
- Conduct administrator training in the Commonwealth's location for up to 10 students
- Provide student evaluations

Commonwealth Responsibilities

- Provide classroom space
- Select and make available qualified students
- Participate in training sessions

Completion Criteria

This task will be considered complete at the conclusion of the final training session.

16d.1.2.6. Integration Framework Needs Assessment

Motorola will perform a Needs Assessment with the Commonwealth STARS project team to evaluate scope and define opportunities for additional integration using the Integration Framework subsystem.

Motorola Responsibilities

- Motorola will assess the technology and effort required to extend the Inter-Switch Text Messaging feature to include additional Message Switches, and present the Commonwealth of with a High Level Design and Statement of Work to accomplish this integration.
- Motorola will assess the requirements for initiating Local Wants and Warrants Queries from additional Commonwealth Message Switches. Upon approval of requirements, Motorola will perform a High Level Design and Statement of Work describing the effort required to extend this feature to identified Message Switches.
- Motorola will assess ability of additional Commonwealth identified Local Wants & Warrants databases to participate in the Local Wants & Warrants Query integration. Upon approval of the results of this assessment, Motorola will perform a High Level Design and Statement of Work describing the effort required to extend the Local Wants & Warrants Query to additional databases.
- Motorola will assess the Commonwealth of needs and priorities for additional query integration, workflow integration and presentation via the Web Portal. Upon approval of the prioritized integration requirements, Motorola and the Commonwealth will jointly agree to a set of highest priority requirements warranting further High Level Design of an Integration Framework solution to meet these integration Requirements.
- Develop a plan with the various Commonwealth public safety and justice agencies to collect critical workflows that should trigger information exchange between applications that can leverage the installed Integration Framework.

- Meet with the appropriate Commonwealth agencies and collect process and workflow data.
- Record critical workflows and processes in a requirements document and identify and document the use cases that satisfy each workflow processes
- Identify any new use cases outside of this contract
- Conduct requirements reviews with the Commonwealth and achieve user concurrence.

Commonwealth Responsibilities

- Establish expert cross-agency user teams to work with Motorola to develop and understand critical workflows and data flows.
- Review and make comments to requirements documents.
- Approve requirements documents.

Completion Criteria

The Commonwealth signed set of requirements documentation and High Level Design documentation.

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