**Open Source Message Switch Project Charter**

The purpose of this project charter is to document the project goals, scope, governance and design principles as well as formally recognize and authorize the Open Source Message Switch project.

**Project Description**

The Open Source Message Switch (OSMS) Project is funded by the Bureau of Justice Assistance Technology Innovation for Public Safety (TIPS) Program through a grant to the Puerto Rico Department of Justice (PRDOJ). PRDOJ, in turn, sub-awarded funds to SEARCH, The National Consortium for Justice Information and Statistics, to lead the project.

**Vision/Project Goal**

The goal of this project is to develop a viable law enforcement message switch computer system that uses open source technologies and components and that implements national justice information sharing standards.

**Background and Business Case**

## Background

A law enforcement message switch is a specialized computer system that links together multiple specialized computer systems to provide law enforcement access to data resources and capabilities required to identify people and property, request and receive warrant, arrest, criminal history and hot file information. The key business function of the message switch is to provide authorized users the capability to interact with multiple state and national law enforcement data systems to enter and retrieve law enforcement sensitive information. In providing this business capability, the message switch must provide the ability to monitor system performance and individual transactions that occur throughout the system. The message switch should provide the following capabilities:

* Allow users to access and manage information in national and state criminal justice information systems
* Connect disparate criminal justice information systems using asynchronous messaging in the format and protocols native to each information system
* Support a wide variety of message formats and protocols that use configurable and flexible message processing and interface capabilities
* Provide guaranteed message delivery with high availability and high performance using message store and forward capabilities
* Act as the control terminal message switch for systems such as NCIC and Nlets that require connection to a single system in a state
* Support the latest information sharing technologies and standards
* Integrate with legacy technologies

## Business Case

State message switches are designed to support law enforcement requests and responses to criminal justice, driver license, vehicle and a host of other information needed by law enforcement to keep officers and the public safe. They also can provide access to criminal history record information, warrants, hot files and registered offender lists. The message switch is an integral tool for law enforcement information sharing.

Most states rely on vendors to maintain and support their message switches. The contracts with the vendors more often benefit the vendor more than law enforcement. The OSMS will be developed using justice information sharing standards (GRA and NIEM) and open technology standards so that agencies will be able to configure, customize and maintain a message switch that is cost-efficient.

**Project Scope**

The following related activities **are included** in the scope of this project:

The scope of this project is to identify the primary exchanges required by the message switch to ensure law enforcement can query and receive critical information. The project will focus on the exchanges supported by the message switch process for law enforcement and criminal justice information. It allows users to access information – through client software, records management systems, and mobile devices - from a variety of systems, including:

* FBI National Crime Information Center (NCIC)
  + Query Vehicle (QV)
  + Query Person (QW)
  + Query Wanted Person (QW)
  + Gun Query (QG)
  + Article Query (QA)
* Nlets (The International Justice and Public Safety Network)
  + Vehicle Registration Query (RQ)
  + Commercial Vehicle Status (AVQ)
  + Interpol Vehicle Query (IVQ)
  + Driver’s License Query (DQ)
  + Interpol Person Query (IPQ)
  + Interpol Gun Query (IGQ)
  + Canadian Gun Query (CGQ)
* National Weather Service (NWS)
* State Motor Vehicle Systems (DMV)
* State Computerized Criminal History Systems (CCH)
* III Criminal History (NCIC)
* State Hot Files (e.g. Instate wanted persons, protection orders, concealed carry permits, etc.)
* Other (e.g. Sex Offender Registry, watch lists, etc.)

The initial exchanges that the project team will develop are those based on a routine law enforcement traffic stop.

The following related activities **are not** within the scope of this project:

The project team will not develop a client solutions, but will provide specifications for client applications to interface with the OSMS. A client application is required for a user to interact with the message switch. Numerous client products exist that could be modified to use the OSMS. The scope of this project is to develop an open source interface/data exchange standard that enables other entities to develop client software to interact with the message switch.

**Project Objectives**

The project objective is to provide a message switch for message transactions associated with a law enforcement traffic stop including spawned messages. The message switch will include capabilities to:

1. authenticate and authorize users;
2. validate messages;
3. route and manage messages;
4. provide connectivity to remote systems;
5. send, receive and correlate messages sent to multiple remote systems; and
6. log transactions.

In order to meet these objectives, the project team will work to ensure that:

1. The OSMS is portable to be able to be readily deployed in different operating environments and by different users/customers.
2. The OSMS is configurable to enable the customer to create and manage as many functions as possible using configuration capabilities rather than having to rely on a technology service provider to perform these functions. This will not remove the need for technological expertise, but this means if such expertise exists in-house, the customer could leverage that expertise and does not have to depend on a vendor to make such updates.
3. The solution is standards-based. It will implement justice and industry standards. This will include the adoption and use of the Global Standards Package and National Information Exchange Model.
4. The project utilizes non-proprietary products and components including open source components, products and technologies whenever possible.
5. The team develops a reusable solution and componentize key elements of the system in a granular manner whenever possible to maximize flexibility and reuse. For instance, the message switch will be designed in a manner that decouples it from any single client application.
6. The OSMS ensures message correlation – much of the functionality of the message switch relies on the ability to process transactions asynchronously with multiple disparate end points.
7. The OSMS provides security and reliability. The message switch must be able to meet CJIS security requirements at a minimum, provide high reliability, and guarantee message integrity and delivery.
8. Only the current XML standard messages will be implemented and will not implement text-based socket protocols.
9. The message switch administrative software will include the capability to control access to users and devices, provide audit reports from the system and transaction logs, detect and resolve message errors, and monitor system performance and functionality.

**Assumptions and Constraints**

The project has the following assumptions:

1. Subject matter experts (SMEs) will be available to provide functional expertise and support.
2. Technical SMEs will be available to provide technical guidance, development and support.
3. The OSMS will meet the functional and technical requirements as document in the backlog and user stories.

The project has the following constraints:

1. The project team consists of subject matter experts, developers, project managers and administrators that are located across the country, including Puerto Rico. This may limit availability of team members and hinder open communication.
2. The OSMS project is funded by grant dollars, these funds are limited and the project is under strict spending parameters.
3. The OSMS solution will be constrained to only the message switch. It will not include a client solution, but rather specification that client software applications will use to develop interfaces to the message switch.

**Initial Project Risks**

The project has the following risks:

* The grant funding is limited, which may affect the ability to complete all of the required components and exchanges.
* The timeline is aggressive due to the grant timeline. This could affect the ability to complete a quality and proven message switch.
* Project team members’ availability may be limited due to delays in starting the project, which may cause project team members’ priorities to be re-aligned, which would affect the project implementation timeline.
* Developing a sustainable support and maintenance model that considers all factors of supporting a 24/7 high-demand environment will need to be addressed as the message switch nears implementation.
* Proper understanding and documentation of the messages could affect timeline if the developers do not fully understand the requirements of each message and spawned message.
* Coordination among the project team could impact the project timeline.
* Grant oversight, including delays in spending approvals as well as additional progress reporting may affect the timeline and cost due to the additional work required.
* Limited grant funding could impact the quality of the message switch.

**Project Staff Resources and Responsibilities**

Staff Resources: The following core resources will be needed in order to plan this project. Additional resource requirements may be identified during the planning process. The project team consists of representatives from the Puerto Rico CJIS agency (Sistema de Informacion de Justicia Criminal (SIJC)), the Montana Department of Justice – CJIS Division (MT DOJ), Nlets – the International Justice and Public Safety Network, and SEARCH.

Project Sponsors: Denisse Cintron, Puerto Rico SIJC

* Responsibilities: Receive and review regular status updates from Project Manager. Provide course correction and assist in the management of risk. Approve any deviation from original scope, timeline and budget.

Grant and Project Administrator: Mark Perbix, SEARCH

* Responsibilities: Develop, review and submit documentation to satisfy grant reporting requirements. Coordinate approvals with Puerto Rico Department of Justice

Product Manager: Andrew Owen, SEARCH

* Responsibilities: Lead architect and development resource manager. Administrator of the vendor contracts and works closely with the Project Manager to develop the backlog and work order tasks for each backlog item.

Project Manager: Michael Jacobson, SEARCH

* Responsibilities: Project Management (PM) – work closely with the Product Manager in determining the tasks and resources required to accomplish the work defined by the backlog and document in a work breakdown structure. The PM will establish a project schedule and communications plan; communicate and provide regular status updates to Project Sponsor and Grand and Project Administrators to include task accomplished, task planned for upcoming period, task remaining, funding overview (budget, current expenditures, planned expenditures), issues open, issues closed; obtain approvals of the project plan; monitor the work and budget against the approved plans; manage risk and issues identified by stakeholders and team members.

System Analyst: James Douglas, SEARCH

* Responsibilities: Identify and document technical issues as required; develop written recommendation on selection of options most suitable to meet user needs; coordinate testing; help create the test management plan.

Subject Matter Experts: Miguel Soto Pastrana, PR SJIC; Jennifer Viets, MT DOJ; Kate Silhol, Nlets

* Responsibilities: Provide functional expertise on business processes and related systems to assist with requirements definition; create test cases and scenarios; execute tests, and perform training on use of the implemented OSMS.

Developers: SEARCH, GCOM, and Innovatio team members

* Responsibilities: Develop business value based on the requirements using good techniques and practices and following the project methodology. The developers will provide assistance with creating the backlog, estimates for completing required components, assist with writing tests for unit testing, design and develop code, participate in team standup calls as needed, and document technical solutions as needed.

**Communications Plan**

The communications plan includes the processes required to ensure a timely and appropriate generation, collection, distribution, storage, retrieval and disposition of project information.

| ***Group*** | ***Information Needed*** | ***Detail*** | ***Frequency*** | ***Communications Method*** |
| --- | --- | --- | --- | --- |
| **Step 1** | **Step 2** | **Step 2** | **Step 3** | **Step 3** |
| Project Sponsor, Grant and Project Administrator | Project status: Major accomplishments, problems, or issues that need resolution | High-level | Monthly or during regularly scheduled project-related meetings | Written status report and oral report by the Project Manager during the meeting |
| Project Team Members | Detailed information about project schedule, activities, deadlines, plans, issues, risks, and problems | Very specific | At least weekly | Variety: Email, written memos, oral reports during bi-weekly meetings, and during ad hoc meetings |
| Users | General updates about project activities, achievements, and any variations in schedule | General | Monthly | Monthly newsletter or Web site (big events, activities, or achievements may warrant a special email alert) |
| External Agencies | General updates about project activities, achievements, and status | General | General | Web site |
| Funding Bodies | Project activities, accomplishments, deadlines, funds expended to date, and related budget issues | Detailed with regard to funding | When reports are due or requested | Formal, written documentation |

**High-level Timeline**

The milestone list below is a high-level schedule based on the TIPS grant—each one of these tasks will have more detailed activities associated with a backlog and work break down schedule.

|  |  |  |
| --- | --- | --- |
| Milestone Description | Start | Finish |
| **TIPS - OSMS** | 01/02/17 | 03/29/19 |
| Deliverable 1: Requirements Analysis | 3/15/17 | 7/20/18 |
| Deliverable 2: Design and Development | 01/05/18 | 11/9/18 |
| Deliverable 3: Deployment | 07/23/18 | 12/31/18 |
| Deliverable 4: Maintenance and Sustainability | 12/31/18 | 3/29/19 |
| Project Management and Administration | 1/2/17 | 3/29/19 |

**Preliminary Budget**

The budget below is a high-level schedule — each one of these items will have more detailed backup associated with a final budget.

|  |  |  |
| --- | --- | --- |
| Budget Item | Includes | Cost |
| **OSMS** |  |  |
| Hardware |  |  |
| Software |  |  |
| Services |  |  |
| Software Maintenance |  |  |
| Hardware Maintenance |  |  |
| Consulting |  |  |
| Total |  |  |
| Contingency |  |  |
|  | Total w/ Contingency |  |

**Project Approval Requirements**

For approval of the project to be accomplished, the following requirements must be met the message switch must be able to:

1. authenticate and authorize users;
2. validate messages;
3. route and manage messages;
4. provide connectivity to remote systems;
5. send, receive and correlate messages sent to multiple remote systems; and
6. log transactions.