Next Generation Identification (NGI)

Interstate Photo System Face Recognition Operational Prototype Project Plan

Version 2.0

September 28, 2011

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Prepared by:

Criminal Justice Information Services Division Information Technology

Next Generation Identification Program Office

SIGNATURE PAGE

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CHANGE DESCRIPTION

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Revision	Change Description	Created/Changed by	Date	Approved By
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2.0	Final		September 28, 2011	

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1 SCOPE

1.1 Identification

The Interstate Photo System (IPS) is the major effort on the Next Generation Identification (NGI) Increment 4. The Facial Recognition (FR) component of Increment 4 is ultimately being developed by the contractor of NGI and is intended to be at Full Operating Capacity (FOC) in fiscal year 2014.

The Interstate Photo System Facial Recognition (IPSFR) Operational Prototype will provide a search of a limited population of criminal mug shots using a submitted probe image from authorized law enforcement agencies meeting the criteria for participation in the IPSFR Operational Prototype. The proof of concept for this prototype is tasked to internal government and contracted staff to make this service available to participating law enforcement agencies sooner than is possible by the NGI development contractor.

The intent of the IPSFR Operational Prototype project is to provide the capability to accept facial search transactions and return a list of candidates to the user, much like the current latent fingerprint search capability. In addition, a Universal Face Workstation (UFW) will be developed for deployment to users for preparation of facial search transactions and processing of search responses. To support the IPSFR Operational Prototype, a repository of criminal facial images will be compiled from the Interstate Identification Index (III) database and other law enforcement and/or homeland security databases as appropriate and permissible by law.

The initial matching software was utilized by the NGI development contractor for the Facial Recognition Trade Study that occurred at their facilities in Orlando, FL. The results of this trade study is documented in the "NGI Facial Recognition Trade Study Report" dated September 23, 2010, CJIS document NGI-DOC-09157-1.0. This software package, known as Pittsburgh Pattern Recognition (PITTPATT) will be installed in the CJIS development environment for analysis and possible modification to achieve the requirements of the NGI stakeholders.

To conduct research for the participation in the IPSFR Operational Prototype, contact was made with 80 different Federal, State, local law enforcement and State Department of Motor Vehicle (DMV). Of them, 34 identified using FR systems in different capacities. Agency contacts were made previously during the Facial Identification Scientific Working Group and State DMV FR utilization canvass.

1.2 Project Overview

The IPSFR Operational Prototype is progressing towards initial installation into hardware environments. A high-level summary of tasks are as follows (* indicates a completed activity):

- Project Kickoff *
- Requirements Clarification *
- Memorandum of Understanding development (Draft) *
- Initial participating agency contact *
- Design Technical Interchange Meeting(s) *

- Operational Prototype Design Meeting(s) *
- Software and Database Development *
- Test Planning and Development *
- Hardware Environment installation(s)
- Security Scanning(s)
- IPSFR Operational Prototype Test Readiness Review
- Formal Functional, Performance and Security Testing
- IPSFR Operational Prototype Readiness Review
- Deployment

1.3 Document Overview

The intent of this document is to outline the managerial and technical approach for the IPSFR Operational Prototype project. This plan identifies key stakeholders, project team members, project goals, cost, scope, and strategy.

This document is For Official Use Only and is labeled Sensitive but Unclassified. There are no additional security or privacy considerations associated with the use of this document.

2 REFERENCES

This document defines the IPSFP Operational Prototype project plan for the System Development Office (SDO) under the overall NGI Program. The following documents are referenced in this plan:

- NGI Program Management Plan, NGI-DOC -07234-2.0, (draft)
- Communications Plan, NGI-DOC-07240-1.1, (draft)
- Configuration Management Plan, NGI-DOC-05178-1.0 (draft)
- Cost Management Plan, NGI-DOC-07237-1.0, 1/12/2006
- Automated Fingerprint Identification Technology Functional Requirements Document, NGI-DOC-01133-2.0, 2/9/2007
- Mission Needs, IAFIS-DOC-01066-1.0, 4/12/2005
- NGI/IAFIS System Requirements Document, NGI-DOC-01185-2.1, 3/2/2007 (draft)
- Performance Management Plan, NGI-DOC-07239-1.1, (draft)
- Program Charter, NGI-DOC-07233-2.0, 3/13/2007 (draft)
- Quality Assurance Plan, NGI-DOC-04126-2.0, (draft)
- Resource Management Plan, NGI-DOC-07236-1.0, 1/12/2006
- Risk Management Plan, NGI-DOC-07220-4.0, (draft)
- Scope and Requirements Management Plan, NGI-DOC-07238-1.0, 1/12/2006
- Office of Management and Budget (OMB) Exhibit 300b for NGI Program
- FBI Information Technology Life Cycle Management Directive, version 3.0, 08/19/2005
- Interstate Photo System Facial Recognition Operational Prototype Technical Specifications Document, internal, 6/08/2007
- NGI Acronym List and Glossary, NGI-DOC-09064-4.4, 10/01/2010

3 ASSUMPTIONS AND DEPENDENCIES

The following assumptions and dependencies have a direct bearing on the successful achievement of the IPSFR Operational Prototype. The IPSFR Operational Prototype project plan is a living document the will evolve as the project evolves. Additional assumptions and dependencies may be defined at a later date.

3.1 Assumptions

- Name of Designated Repository (NDR) Field, Electronic Biometric Transmission Specifications (EBTS) Version 8.0 will be available to support FR searches.
- The data that the IPSFR Operational Prototype will utilize will not be "real-time".
- The project will not go through FBI Headquarters gating.
- The project will have the necessary resources for development.
- The project will have executive management support.
- The resulting searches from this effort will be used solely for criminal justice purposes only
- During the prototyping phase, the users of this effort are prohibited from relying solely on the resulting responses as the impetus for any law enforcement action.

3.2 Dependencies

- Population of FR data – The IPSFR Operational Prototype dependency for the updating of required data is yet to be determined as of the writing of this document.
- Connectivity – The IPSFR Operational Prototype will depend on the availability of data connections and equipment capabilities between Criminal Justice Information Services (CJIS), the State Identification Bureau (SIB), and the data equipment used by the law enforcement official.
- Electronic Storage Area Network (ESAN) – The IPSFR Operational Prototype will use in-place ESAN devices and that enough storage is available for the successful execution of this project.

4 STAKEHOLDERS

The following table names the current stakeholders for this project. The project recognizes that the participating state agencies are stakeholders however, for the purposes of this document, will not be listed individually.

Table 4-1. Stakeholders

Name	Organization	Scope
Mr. Jerome M. Pender	FBI	Acting Assistant Director
Ms. Kimberly J. DelGreco	FBI	Acting Deputy Assistant Director
	FBI	Acting Section Chief
	SDO	NGI Technical Program Manager
	NGI PMO	NGI Program Manager
	SDO	Technical Lead
	CAO	Acting Unit Chief
	NGI PMO	NGI Program Manager
	NGI PMO	NGI Program Manager

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4.1 Project Authority and Oversight

Authority and oversight for this program is provided by: the Assistant Director (AD) of the FBI/CJIS Division; Deputy Assistant Director (DAD), CJIS Operations Branch; Program Management Executive (PME), Identification and Investigative Services Section (IISS); Advisory Policy Board (APB); and Executive-level Review Boards Executive Steering Council (ESC), Project Review Board (PRB), Technology Development & Deployment Board (TDDB), IT Policy Board (ITPB), and the Department Investment Review Board (DIRB).

4.1.1 Project Sponsor

The Project Sponsor for the IPSFR Operational Prototype is the Next Generation Identification Program Office (NGIPO)

5 PROJECT TEAM

The IPSFR Prototype is in its infancy and the project team is comprised of individuals whose main purpose is to plan the startup and the initial software and infrastructure design of the project.

As this project progresses, team members will be added to represent the areas that the prototype will affect. The IPSFR project team is seen to comprise in house and contracted individuals from various organizations across CJIS that include the SDO, the Program Management Office (PMO) for NGI, Information Technology Management Section (ITMS), Contracts Administration Office (CAO), Communications Technologies Unit (CTU), CJIS Division Intelligence Group (CDIG), and Global Initiatives Unit (GIU). Other organizations are expected to be added to the project team as the operational prototype matures. The current team is described in the table below.

Table 5-1. Project Team

Name	Section	Role	FBI/Contractor
	SDO	NGI Lead Technical Architect	FBI
	SDO	Project Support	Contractor
	SDO	FR Prototype Technical Lead	FBI
	NGI PMO	NGI PMO Lead	FBI
	NGI PMO	Business Liaison	FBI
	SDO	Project Support/Scheduling/Documentation	Contractor
	Noblis	Algorithm Analysis	Contractor
	ITMS	Database	FBI
	SDO	System Integration	FBI
	SEAU	Program Support	FBI
	MITRE	Data Reconditioning/Software	Contractor
	MITRE	Software	Contractor
	ITMS	Infrastructure	FBI
	MITRE	Software	Contractor
	MITRE	Program Support	Contractor
	SDO	Project Support	FBI
	MITRE	Software Support	Contractor
	SEAU	Software/Project Support	Contractor

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	MITRE	Software	Contractor
	NGI PMO	Program Support	FBI
	SEAU	MITRE COTR	FBI
	MITRE	Software	Contractor

The staff represented in the above table is active in the weekly status meeting and assists in the development of presentations and deliverables.

5.1 Organizational lines of Authority

The authority to execute this project and to enforce business decisions originates in the NGI Program Office (NGIPO). Authority from the NGIPO flows to the Planning and Control Unit, Services Evaluation and Analysis Unit (SEAU), Implementation and Transition Unit (ITU) and the SDO. The IPSFR Operational Prototype Project is jointly managed with business responsibility falling within the Planning and Control,, and ITU, and the technical responsibility falling under the SEAU and the SDO. All other sections represented in Table 5-1 receive direction from the aforementioned entities and are represented in the IPT. The IPT consists of CJIS entities (FBI Staff and Contractors) from the areas noted in section 5.0. A graphical representation of this matrix style organization is shown in Figure 5-1.
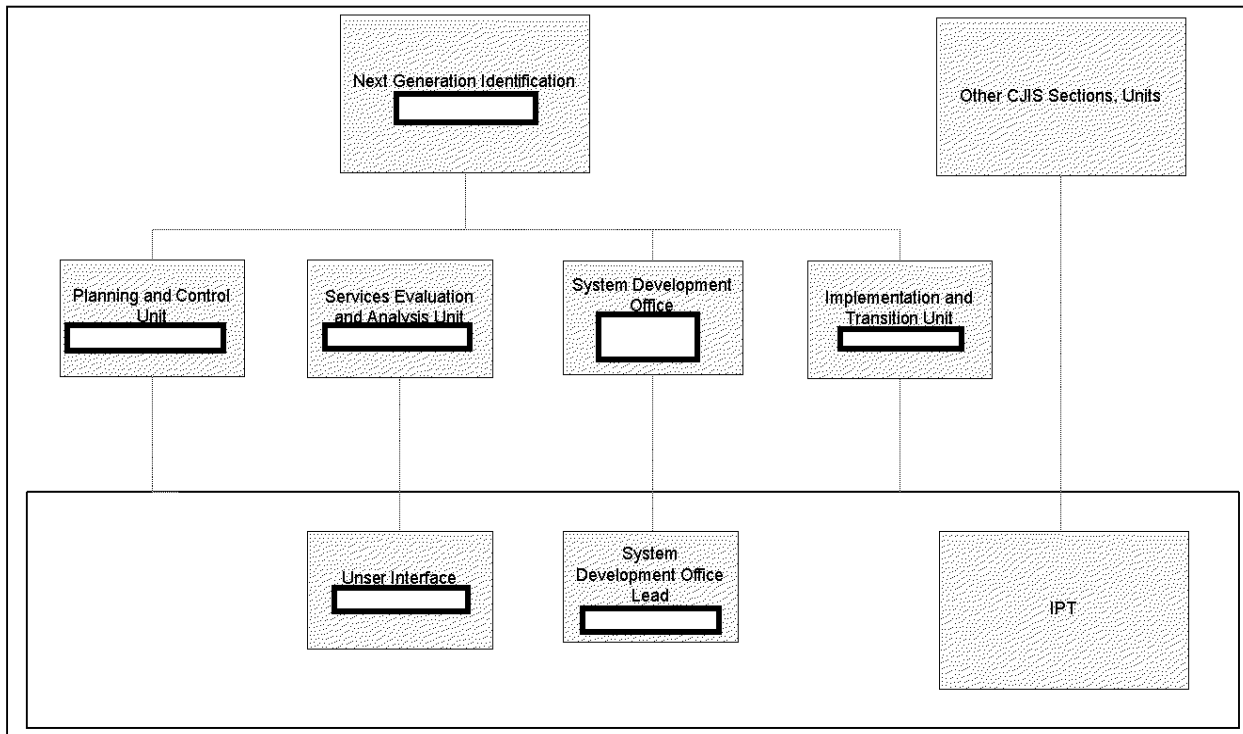
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Figure 5-1. Organizational Lines of Authority

6 PROJECT GOALS

The IPSFR Operational Prototype Project is a collaborative effort between the FBI and select piloting agencies to identify user needs and develop a useful investigative tool for the law enforcement community. The following goals and objectives to be achieved by the FR Prototype Pilot:

- Leverage the FR System Prototype delivered by Lockheed Martin given the full implementation date of the NGI IPS Initiative.
- Provide reasonable FR proof of concept
- Demonstrate the value of the capability
- Establish accuracy confidence thresholds for complete lights out searches using a probe frontal facial photo
- Enable the FBI to assess the performance of the pilot to provide recommendations for development of the future NGI FR capability based on data received from multiple sources
- Effectively identify and reduce risk for the NGI Increment 4 deployment
- Develop an effective deployment strategy for the Universal Facial Workstation (UFW) software for piloting agencies

7 PROJECT SCOPE

The project is scheduled to follow the classic waterfall approach for design, build, test, and deploy.

7.1 Initial Build

To accomplish the above-stated goals, the scope of effort will include:

1. The installation of the developed code from the development contractor to equipment located in the BioMine at the CJIS facility. Standup the code for initial proof-of-concept demonstrations. Also begin the designing of an Oracle database for image storage on this temporary platform while a development platform is being built.

2. The definition and building of a complete development, testing and production environment. Equipment that currently is in place in the CJIS Data Center will be inventoried, arranged by CPU model and memory installed to maximize available hardware assets to provide the optimum configuration(s) for the applicable environments.

3. The porting of the matching algorithm from the development contractor to the CJIS development environment. Proving the software in this environment will determine the feasibility of proceeding with this product.

4. Requirements clarification – A review of the NGI requirements will be made to ensure that the prototype will produce results beneficial to the NGI program.

5. Design Phase – The project team will concentrate on the requirements, develop use cases, and access the current matching algorithm capabilities to develop interfaces, work station HMI(s), general software, and any post-processing.

6. Software and Database development –
   - UFW Software development - The initial Graphical User Interface (GUI) for the workstations will be developed with user input to ensure that their business needs are addressed. The development of this GUI is independent from the efforts to develop middle and back-end software. It is envisioned that the prototype will function without the UFW.

   - Middle/Back-end Software development – Install and further develop the software delivered from the development contractor. This will also involve the porting and modification of the current Electronic File Conversion (EFCON) to suit the needs of this effort.

   - Front-end Database development – The COTS database CouchDB will be researched and deployed as the front-end database if proven to be feasible and the best-fit for the purpose for the UFW.

   - Back-end Database development – Convert the delivered flat file data format into an Oracle database to achieve optimal retrieval times for data. This will include the development of logical and physical data models, along with data loading capabilities to port data into testing format and data for Initial Operational Capacity (IOC).

This will be accomplished utilizing the Agile Development method. The current plan is to have quarterly releases of product functionality with the initial release planned for December, 2010.

7. Full testing cycle – The project will develop test cases that cover the functional, security, and endurance, ramp, failover, backup and restore, and cutover testing functions. These procedures will be verified and dry-run before the formal testing process to ensure accuracy and minimize possible reruns.

8. Site selection criteria (data through the SIB, images) – The representatives from the NGI Program Office have developed site selection criteria, performed telephone interviews, developed a Memorandum of Understanding (MOU), and have selected the initial pilot agencies that will participate in the operational prototype.

The technical details of the project scope will be further defined in the Interstate Photo System Operational Prototype Software Design Specifications. This document is scheduled to be written after the final design of the Operational Prototype is approved.

7.1.1 Out of Scope

The following is considered to be out of scope for initial build of the IPSFR Operational Prototype:

- Real-time data
- Any communications outside of the State Identification Bureau (SIB)
- Providing any type of photography equipment

7.2 IPSFC Operational Prototype Interfaces to other Networks

7.2.1 Population of IPSFC Operational Prototype Data

7.2.1.1 Data prior to 8/16/2009

Data for this project originally existed in the form of a flat file that was pulled from the Interstate Identification Index (III). There are approximately 7,660,000 records representing all III submissions until 8/15/2009. The date range of this data is from 1/24/1900 until 8/15/2009. This data does not contain the "offense code" field that the project will need to obtain. Also, some of the metadata is not complete relative to the actual data records. A process to remedy this situation is in progress which will be known as Data Reconditioning.

7.2.1.2 Data post 8/15/2009

Data that exists from 8/16/2009 until the present is in the process of extraction from the III system. As of the writing of this document, a System Problem Change Report (SPCR) is in the process of approval to allow CJIS operation staff to schedule and begin the data extraction process. This data set will contain all applicable fields for the prototype. These data fields are described in detail in the IPSFR Database Design Document, NGI-02368-1.0, which is currently under development.

7.2.2 Storage (ESAN)

Requests for an initial data storage capacity of 20 TB has been requested of Information Services System Administration Unit (ISSAU) from the existing ESAN located in the CJIS Data Center.

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8 PROJECT STRATEGY

The IPSFR Operational Prototype project will be developed in-house, in a rapid fashion, and will use the current CJIS Development and Test Methodology to deliver the first build.

The strategy to execute the project is as follows:

1. Define the User Interface – This will determine process flows, timelines, determine the points of contact for pilot site agencies, schedule and conduct site visits, and develop and obtain executive approval of Memorandums of Understanding.
2. Define and Clarify Requirements – Requirements are to be reviewed, clarified, and approved via an informal Requirements Clarification Review (RCR)
3. Infrastructure – Utilize four existing racks of blades that are also being utilized for the "RISC to Blades" project. The project intends to standup an Operational Environment (OE), and a Non Operational Environment (NOE) that will consist of a full testing environment known as String 4, and a development environment known as String 5.
4. Inventory all blade environments – This will involve physically looking at each blade that is available for this project. The intent of this is to group and separate the blades to match model numbers and available memory together for the production, test, and development environments. For example, group as many of the older HS21 model blades for development as possible while grouping as many of the newer HS22 model blades for the production environment.
5. Move String 5 – String 5 will be moved to the same vicinity as the OE and String 4.
6. Set up High Availability – A hybrid style of High Availability will be utilized for String 4 and the OE. A description of this in detail will exist in the IPSFR System Design Document.
7. Data reconditioning – The current data is from before May 15, 2009. Of this data, there are missing items such as Arrest Code in all of the records, missing metadata in some of the records, incorrect labeling, and proper linking (from metadata to data). To correct this situation, the data will be reconditioned to bring it into proper conformity for all phases of the project.
8. Software and Database Development – The individual software modules will be developed, unit tested, and installed on the IPSFR Operational Prototype in an incremental fashion from the Agile Development method. The Database will be modeled, built, and backed up. All of these components will be presented at each functional release until a full product is developed. A testing cycle will occur at each incremental release.
9. Formal Testing – A formal testing cycle encompassing the entire software and hardware package will occur after the final incremental development release. Test case scenarios will be created, verified, subjected to dry runs, and formally tested. The categories of formal testing will include Functional, Performance, and Security Tests. All test cases will be traced to project requirements, and test results will be documented in the RISC Operational Prototype Test Plan and Report, which is currently under development. All testing will be performed by SDO staff.
10. Perform Reviews – Due to the time constraints, the project has gained concurrence to perform reviews that are streamlined in nature. These reviews are:
    - Informal Requirements Clarification Review
    - Informal IPSFR Operational Prototype Design Technical Interchange Meeting

- IPSFR Operational Prototype Design Review
- Test Readiness Technical Interchange Meeting
- Prototype Readiness Technical Interchange Meeting

11. These reviews and Technical Interchange Meetings (TIMs) will convey necessary information to develop the prototype, gain approval of designs, test results, and the readiness of the prototype for operation.

12. Documentation – Also, due to time constrains, the project will produce documentation that is streamlined, yet provide proper information that will be made available to the development contractor after the completion of the initial build.

13. Deployment – After the acceptance of all designs and testing (via the Prototype Readiness TIM) the project will deploy the prototype for operations. The intent of the project is to deploy in an incremental fashion. The first user will have the opportunity to use the prototype for a period of time (1 working month), make necessary modifications, then deploy to the next approved agency in the same manner until all approved agencies are utilizing the prototype.

9 ENTRANCE, SUCCESS, AND EXIT CRITERIA

9.1 Entrance Criteria

The project will utilize the weekly team meetings to ascertain that the entrance criteria are met. These parameters are:

1. The system conforms to the Technical Specification developed for the prototype

2. The system is presented to the CJIS WAN for both internal and external contributors

3. Initial testing confirms system operability

4. The prototype completes the testing phase of the project successfully

5. A Memorandum of Understanding (MOU) is in place for all initial contributing agencies

6. FBI Management approves the operation of the prototype

9.2 Success Criteria

The success of the prototype will be measured in a progressive process. As the amount of contributors increase, the project will utilize available resources to make adjustments to system parameters and business processes to accommodate the user community's expectations through proper review boards and working groups. The stakeholders will also provide input and feedback regarding the success of this prototype. The parameters for the success of the prototype are:

1. The contributor(s) consistently submit a facial recognition search and receives back a valid Search Results Posting (SRP) for each transaction

2. Field responses are within the acceptable response time parameters consistently

9.3 Exit Criteria

The NGI Increment 4 will contain the development of a Facial Recognition System. The prototype will conclude with the successful implementation and FBI acceptance of the NGI Increment 4 efforts.

10 PROJECT SECURITY

Security for the IPSFR Operational Prototype Project will be the responsibility of the System Development Manager (SDM) which falls under the NGI Program. The detailed security controls will be documented in the CJIS Controlled Access Protection Profile (CAPP) which specifies a set of security functional and assurance requirements for CJIS Criminal Justice Support Systems, the NGI Program Management Plan and the IAFIS System Security Plan (SSP).

10.1 System Security

The physical components of the system are located at the CJIS facility in Clarksburg, WV and are subject all CJIS security policies and procedures for their use. Access to the IPSFR Operational Prototype system will be restricted to project staff only for the life of the prototype. Access to any GUI that is produced by this project must be approved by the requestors' immediate supervisor, which is forwarded to the NGI Program Office. If approved the request will then forwarded to the appropriate system administrator for access to the GUI.

10.2 Personnel Security

The IPSFR Operational Prototype is being developed internally at CJIS. All FBI employees hold a Department of Justice (DOJ) Top Secret or Secret clearance and appropriate contractor individuals will be processed as directed by FBI policies and procedures. The Security Division is responsible for maintaining security clearance and/or access data for all personnel granted an access and/or security clearance by the FBI.

11 DELIVERABLES

11.1 Hardware Deliverables

The project is utilizing existing equipment at the CJIS facility. The RISC to Blades project will be leveraged in the form of utilizing currently placed racks (4) containing numerous IBM Blade model HS21 and HS22, and disk on the ESAN.

11.1.1 String 5

String 5 will be used as the primary development environment. This string will consist of seven (7) HS21 blades located at ☐ in the CJIS data center. Of the seven blades, 5 will be utilized for the FR engine, while 1 will be utilized for the Oracle database and the remaining blade will be utilized for the "FaceCON" functionality of the product.

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11.1.2 String 4 (NOE4)

String 4 will be utilized as the testing and demonstration environment. The project intends to build this environment to the same equipment specifications that are intended for the OE. This string will consist of fourteen (14) HS22 blades located at ☐ in the CJIS data center. This string will have HA capability to test the effectiveness of CPU failover. The exact HA configuration is yet to be determined and will be detailed in the IPSFR Design Document.

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11.1.3 Operational Environment (OE)

The OE will consist of fourteen (14) HS22 blades located in two (2) separate blade racks located at ☐ and ☐. This string, like String 4 will have a HA configuration for production purposes to ensure proper failover is achieved in a manner that is as transparent to the end-use community as possible. The exact HA configuration is yet to be determined and will be detailed in the IPSRF Design document.

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11.2 Software Deliverables

The custom code within the IPSFR Operational Prototype will contain modified code and functionality from EFCON, named FaceCON for this effort, along with development contractor developed code (backend). The FaceCON functionality will be able to send and retrieve messages, to and from authorized contributors. Separate software development is underway to accommodate the UFW.

11.3 Document Deliverables

The document deliverables for this IPSFR Operational Prototype have been tailored to concentrate on technical content. This is due to the time constraints that have been placed on the project. These documents will be available to the contractor that is awarded the NGI development contract to develop the production version of the RISC and to develop the Life Cycle Management Directive (LCMD) documents that will be NGI deliverables.

11.3.1 Delivered Documents

The IPSFR Operational Prototype project document deliverables are listed below:

- Requirements Document
- Memorandum of Understanding
- Interstate Photo System Facial Recognition Operational Prototype Technical Specifications Document
- Interstate Photo System Facial Recognition Operational Prototype Design TIM (Presentation)
- Interstate Photo System Facial Recognition Operational Prototype Design (Presentation)
- Interstate Photo System Facial Recognition Operational Prototype Project Plan
- Interstate Photo System Facial Recognition Operational Prototype Design Document
- Interstate Photo System Facial Recognition Operational Prototype Software Design Specifications
- Interstate Photo System Facial Recognition Operational Prototype Interface Diagram
- Interstate Photo System Facial Recognition Operational Prototype Database Schema
- Interstate Photo System Facial Recognition Operational Prototype Specification
- Interstate Photo System Facial Recognition Operational Prototype Test Plan and Report
- Interstate Photo System Facial Recognition Operational Prototype Knowledge Base

11.3.2 Deleted Documents

As the project grew into further development phases, discussions of relevant documentation led to the determination that the development of several documents is not necessary. These documents are as follows:

- Interstate Photo System Facial Recognition Operational Prototype Cutover Procedures
- Interstate Photo System Facial Recognition Operational Prototype Adhoc Statistics
- Interstate Photo System Facial Recognition Operational Prototype Knowledge Base

The Cutover Procedures are not necessary as this is a new function and no cutover from legacy systems will occur. The Adhoc Statistics and the Prototype Knowledge Base are not necessary as the type of data contained within both documents will be present in the final Test Report.

12 RESOURCES

Please refer to section 5.0, Project Team.

13 SCHEDULE ESTIMATE SUMMARY

The schedule for this prototype is an implementation schedule.

See enclosed Schedule, Appendix. The schedule is shown as of 6/17/2011 and is subject to change after the publication of this document.

14 QUALITY SUMMARY

The IPSFR Operational Prototype project will adhere to all current Quality Assurance (QA) procedures, practices, and policies that are in place at the CJIS facility. The project is working with CAO Quality Assurance (QA) representatives who are active in the weekly IPT meeting, and will be utilized during all phases of the project.

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15 CONFIGURATION MANAGEMENT

The IPSFR Operational Prototype project will adhere to all current Configuration Management (CM) procedures, practices, and policies consistent with prototype delivery that are in place at the CJIS facility. Project CM representatives from the SDO and CAO utilize the ClearQuest software product to manage issues and to create software baselines. The SDO CM representative will also chair the Technical Review Boards (TRBs) that will disposition technical changes throughout the life of this project.

16 RISK MANAGEMENT

The IPSFR Operational Prototype project will adhere to all current Risk Management procedures, practices, and policies that are in place at the CJIS facility. SDO and MAPA staff have developed a risk register from the LCMD version 4.1 that is tracked in the weekly IPT meetings.

17 PROJECT PHASE COMPLETION CRITERIA

This project will be developed and delivered in a Rapid Prototype style methodology. Please refer to section 12.0, Schedule Estimate Summary, for further details.

18 LCMD TAILORING

This project has the approval from the DAD of CJIS to utilize the CJIS Development and Test Methodology which includes a Rapid Prototype delivery method. This and all projects delivered in this fashion have been granted an exemption from NGI and FBI HQ gating. The LCMD will be used for guidance only.

18.1 LCMD Phases

This project has the approval from the DAD of CJIS to utilize the CJIS Development and Test Methodology. The LCMD will be used for guidance only. The project will utilize a Rapid Prototype style to develop the operational prototype within the desired time constraints. The phases that will be utilized by this project are:

- Analysis
- Requirements Development
- Design
- Infrastructure Installation
- Software Development
- Test
- Deployment

18.2 LCMD Project Level Reviews

This project has the approval from the DAD of CJIS to utilize the CJIS Development and Test Methodology. The LCMD will be used for guidance only. The project will utilize Technical Interchange Meetings (TIMs) to obtain project-level approval for initial software and hardware design items, software development, test readiness, and the operational prototype readiness prior to deployment. Other reviews will include the Design Meeting at which the final approval for the initial design of the IPSFR Operational Prototype, and the TRB's to discuss technical changes when applicable.

18.3 LCMD Control Gates

This project has the approval from the DAD of CJIS to utilize the CJIS Development and Test Methodology. The LCMD will be used for guidance only.

18.4 LCMD Deliverables

This project has the approval from the DAD of CJIS to utilize the CJIS Development and Test Methodology. The LCMD will be used for guidance only.

APPENDIX A: PROJECT SCHEDULE

ID	ⓘ	Task Name	Duration	Start	Finish	Predecessors	Successors
36		**NOE4**	**78.5 days**	**Mon 4/4/11**	**Fri 7/22/11**		
37		**ESAN**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		
38		**ESAN Configuration time period**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		49
39	✓	Complete FireWall rules	45 days	Mon 4/4/11	Fri 6/3/11		40
40	✓	Wait for LMC switch repair	10 days	Mon 6/6/11	Fri 6/17/11	39	41
41		Present Boot LUNS	10 days	Mon 6/20/11	Fri 7/1/11	40	42,45
42		Present Data LUNS	5 days	Mon 7/11/11	Fri 7/15/11	41,45	55
43		**Operating System**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		
44		OS Load Prep	5 days	Mon 4/4/11	Fri 4/8/11		45
45		OS Load	5 days	Mon 7/4/11	Fri 7/8/11	41,44	42,46
46		OS Accounts & ATW's	5 days	Mon 7/11/11	Fri 7/15/11	45	
47		**Software**	**4.5 days**	**Mon 7/18/11**	**Fri 7/22/11**		
48		**(MITRE) Software**	**4.5 days**	**Mon 7/18/11**	**Fri 7/22/11**		
49		PittPatt Software load	2 days	Mon 7/18/11	Tue 7/19/11	38	50SS,53
50		FRS Matching Server Code	2 days	Mon 7/18/11	Tue 7/19/11	49SS	53,52
51		**Transaction Manager/Middleware**	**0.5 days**	**Wed 7/20/11**	**Wed 7/20/11**		
52		Admin Scripts	0.5 days	Wed 7/20/11	Wed 7/20/11	50	53
53		Unit Test MITRE Software	2 days	Wed 7/20/11	Fri 7/22/11	49,50,52	
54		**Oracle**	**2.5 days**	**Mon 7/18/11**	**Wed 7/20/11**		
55		Prepare Scripts (for storage areas, tables, indexes, etc..)	1 day	Mon 7/18/11	Mon 7/18/11	42	56
56		Oracle Installation	1 day	Tue 7/19/11	Tue 7/19/11	55	57
57		Verify Oracle configuration	0.5 days	Wed 7/20/11	Wed 7/20/11	56	
58		**Test**	**88 days**	**Mon 5/16/11**	**Fri 9/16/11**		
59		Test case development	30 days	Mon 5/16/11	Fri 6/24/11	2FS+30 days	60
60		Dry runs	1 day	Fri 9/9/11	Fri 9/9/11	59,34FS-5 days,2	61
61		Perform "FAT"	2 days	Mon 9/12/11	Tue 9/13/11	60	62
62		Perform "SAT"	2 days	Wed 9/14/11	Thu 9/15/11	61	63
63		Present results to IPT	1 day	Fri 9/16/11	Fri 9/16/11	62	76
64		**SITS Configuration**	**11.3 days**	**Fri 7/22/11**	**Mon 8/8/11**	**15**	
65		Create SPCR	0.25 days	Fri 7/22/11	Fri 7/22/11		66
66		Perform and Complete Analysis	10 days	Fri 7/22/11	Fri 8/5/11	65	67
67		SPCR Approved and worked	1 day	Fri 8/5/11	Mon 8/8/11	66	68
68		Confirm IPSFR is present in SITS schedule	0.05 days	Mon 8/8/11	Mon 8/8/11	67	76
69		**Post Processing (NOT needed for "go-live")**	**30 days**	**Mon 5/30/11**	**Mon 7/11/11**		
70	✓	Develop User Management	1 day	Mon 5/30/11	Mon 5/30/11	2FS+40 days	71
71	✓	Develop Requests/Responses by ORI/CRI	7 days	Tue 5/31/11	Wed 6/8/11	70	72
72	✓	Develop Transaction Metrics	3 days	Thu 6/9/11	Mon 6/13/11	71	73
73		Develop "Success Stories" (PLACEHOLDER)	5 days	Tue 6/14/11	Mon 6/20/11	72	74
74		Develop Candidate List Processing (PLACEHOLDER)	10 days	Tue 6/21/11	Mon 7/4/11	73	75
75		Post Processing Test	5 days	Tue 7/5/11	Mon 7/11/11	74	
76		**IPSFR Pilot Operational**	**0 days**	**Fri 9/16/11**	**Fri 9/16/11**	**68,63**	
77		**Add-on Tasks (Not dependent on IPSFR "go-live")**	**92 days**	**Mon 4/4/11**	**Wed 8/10/11**		
78		**Universal Face Workstation**	**8 days**	**Wed 7/20/11**	**Fri 7/29/11**		
81		**NOE5**	**92 days**	**Mon 4/4/11**	**Wed 8/10/11**		

ID		Task Name	Duration	Start	Finish	Predecessors	Successors
36		**NOE4**	**78.5 days**	**Mon 4/4/11**	**Fri 7/22/11**		
37		**ESAN**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		
38		**ESAN Configuration time period**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		49
39	✓	Complete FireWall rules	45 days	Mon 4/4/11	Fri 6/3/11		40
40	✓	Wait for LMC switch repair	10 days	Mon 6/6/11	Fri 6/17/11	39	41
41		Present Boot LUNS	10 days	Mon 6/20/11	Fri 7/1/11	40	42,45
42		Present Data LUNS	5 days	Mon 7/11/11	Fri 7/15/11	41,45	55
43		**Operating System**	**74 days**	**Mon 4/4/11**	**Fri 7/15/11**		
44		OS Load Prep	5 days	Mon 4/4/11	Fri 4/8/11		45
45		OS Load	5 days	Mon 7/4/11	Fri 7/8/11	41,44	42,46
46		OS Accounts & ATW's	5 days	Mon 7/11/11	Fri 7/15/11	45	
47		**Software**	**4.5 days**	**Mon 7/18/11**	**Fri 7/22/11**		
48		**(MITRE) Software**	**4.5 days**	**Mon 7/18/11**	**Fri 7/22/11**		
49		PittPatt Software load	2 days	Mon 7/18/11	Tue 7/19/11	38	50SS,53
50		FRS Matching Server Code	2 days	Mon 7/18/11	Tue 7/19/11	49SS	53,52
51		**Transaction Manager/Middleware**	**0.5 days**	**Wed 7/20/11**	**Wed 7/20/11**		
52		Admin Scripts	0.5 days	Wed 7/20/11	Wed 7/20/11	50	53
53		Unit Test MITRE Software	2 days	Wed 7/20/11	Fri 7/22/11	49,50,52	
54		**Oracle**	**2.5 days**	**Mon 7/18/11**	**Wed 7/20/11**		
55		Prepare Scripts (for storage areas, tables, indexes, etc..)	1 day	Mon 7/18/11	Mon 7/18/11	42	56
56		Oracle Installation	1 day	Tue 7/19/11	Tue 7/19/11	55	57
57		Verify Oracle configuration	0.5 days	Wed 7/20/11	Wed 7/20/11	56	
58		**Test**	**88 days**	**Mon 5/16/11**	**Fri 9/16/11**		
59		Test case development	30 days	Mon 5/16/11	Fri 6/24/11	2FS+30 days	60
60		Dry runs	1 day	Fri 9/9/11	Fri 9/9/11	59,34FS-5 days,2	61
61		Perform "FAT"	2 days	Mon 9/12/11	Tue 9/13/11	60	62
62		Perform "SAT"	2 days	Wed 9/14/11	Thu 9/15/11	61	63
63		Present results to IPT	1 day	Fri 9/16/11	Fri 9/16/11	62	76
64		**SITS Configuration**	**11.3 days**	**Fri 7/22/11**	**Mon 8/8/11**	**15**	
65		Create SPCR	0.25 days	Fri 7/22/11	Fri 7/22/11		66
66		Perform and Complete Analysis	10 days	Fri 7/22/11	Fri 8/5/11	65	67
67		SPCR Approved and worked	1 day	Fri 8/5/11	Mon 8/8/11	66	68
68		Confirm IPSFR is present in SITS schedule	0.05 days	Mon 8/8/11	Mon 8/8/11	67	76
69		**Post Processing (NOT needed for "go-live")**	**30 days**	**Mon 5/30/11**	**Mon 7/11/11**		
70	✓	Develop User Management	1 day	Mon 5/30/11	Mon 5/30/11	2FS+40 days	71
71	✓	Develop Requests/Responses by ORI/CRI	7 days	Tue 5/31/11	Wed 6/8/11	70	72
72	✓	Develop Transaction Metrics	3 days	Thu 6/9/11	Mon 6/13/11	71	73
73		Develop "Success Stories" (PLACEHOLDER)	5 days	Tue 6/14/11	Mon 6/20/11	72	74
74		Develop Candidate List Processing (PLACEHOLDER)	10 days	Tue 6/21/11	Mon 7/4/11	73	75
75		Post Processing Test	5 days	Tue 7/5/11	Mon 7/11/11	74	
76		**IPSFR Pilot Operational**	0 days	Fri 9/16/11	Fri 9/16/11	68,63	
77		**Add-on Tasks (Not dependent on IPSFR "go-live")**	**92 days**	**Mon 4/4/11**	**Wed 8/10/11**		
78		**Universal Face Workstation**	**8 days**	**Wed 7/20/11**	**Fri 7/29/11**		
81		**NOE5**	**92 days**	**Mon 4/4/11**	**Wed 8/10/11**		