INTRADEPARTMENTAL CORRESPONDENCE

March 18, 2016
1.17

TO: The Honorable Board of Police Commissioners

FROM: Chief of Police

SUBJECT: RESPONSE TO REQUEST FROM BUDGET & FINANCE COMMITTEE RE MOTOROLA SOLUTIONS, INC. SERVICES AGREEMENT, CONTRACT NO. C-123897 (COUNCIL FILE NO. 15-1313)

RECOMMENDED ACTIONS

1. That the Board of Police Commissioners (Board) RECEIVE and FILE the attached report to Budget and Finance Committee regarding Contract No. C-123897 with Motorola Solutions, Inc. (Motorola).

2. That the Board TRANSMIT the report to the City Clerk for scheduling with the Budget and Finance Committee.

3. Authorize the Controller to:

   A) Establish and appropriate $420,020 within the U.S. Department of Justice Asset Forfeiture Fund No. 44D/70, account number to be determined.
   B) Establish and appropriate $363,633 within the U.S. Treasury Department Asset Forfeiture Fund No. 44E/70, account number to be determined.
   C) Establish and appropriate $742,859 within the State of California Asset Forfeiture Fund No. 44F/70, account number to be determined.

4. Instruct the Controller to:

   A) Transfer the appropriation of $220,000 within Fund No. 554, from Account No. 70M537, Fire Department Radios, to Account No. 70L534 to pay for the Computer-Aided Dispatch System.
   B) Increase the appropriation from the cash balance of Fund No. 554 by the current cash balance or $357,580, whichever is higher, to Account No. 70L534 to pay for the Computer-Aided Dispatch System.

5. Authorize the LAPD to prepare Controller's instructions for any necessary technical adjustments, subject to the approval of the City Administrative Officer, and authorize the Controller to implement the instructions.

DISCUSSION

On July 21, 2015, the Board of Police Commissioners reviewed and approved the Fourth Amendment to Contract No. C-123897, which included authorization for $6 million in

contingency funds to be utilized for future projects. On December 15, 2015, the City Council REVIEWED and APPROVED the Fourth Amendment and adopted a recommendation from the Budget and Finance Committee as follows:

> "INSTRUCT the LAPD to report, prior to exercising the additional $6 million in authority, with an itemization of expenditures and how they correlate to the larger Computer-Aided Dispatch (CAD) system upgrade."

As such, the $6 million in contingency funds will be allocated as follows:

Project	Description	Amount	Notes
1	9-1-1 Telephony Recorder Upgrade	$1,489,436	*see* attached *Fifth Amendment*
2	LAPD CAD Upgrade	$1,382,422	*see* attached *Sixth Amendment*
3	Held in contingency	$3,128,142	The LAPD will report back to the Budget and Finance Committee prior to expending the remaining balance held in contingency.
	Total:	$6,000,000	

Project 1 - 9-1-1 Telephony Recorder Upgrade

Project 1 will enable the LAPD to upgrade the current 9-1-1 telephony loggers that record all calls to 9-1-1 calls that come into the LAPD Dispatch Centers at a total cost of $1,863,526, of which $1,489,436 is for professional services. The current loggers are end of life and must be replaced. This will require integration services from Motorola to integrate the loggers into the Dispatch consoles in the LAPD Dispatch Centers.

The total project cost of the telephony logger upgrade is $1,863,526. Funding for the professional services required for the upgrade ($1,489,436) is currently allocated within the LAPD's FY 2015-16 budget. An additional $374,090 is required for the purchase of infrastructure equipment (servers) required to support the logging system. The equipment purchase is separate from the Motorola agreement and will be procured through another existing City vendor/contract (Hewlett Packard). An allocation within the Asset Forfeiture Trust Fund is required for the purchase of the servers.

If the LAPD does not upgrade the existing telephony logging system, 9-1-1 calls will not be able to be recorded and the LAPD will not be able to retrieve recordings pursuant to Court orders, subpoenas and the criminal/civil litigation discovery process.

Project 2 – LAPD Computer-Aided Dispatch (CAD) Upgrade

Project 2 will enable the LAPD to upgrade the LAPD existing Motorola CAD system (PCAD) to the latest Motorola CAD software platform (Premier One CAD) at a total cost of $3,703,750, of which $1,382,422 is for professional services. The current LAPD CAD platform is end of life.

The total project cost is $3,703,750. Three separate funding sources have been identified for this purpose as follows:

- Asset Forfeiture Trust Fund ($1,152,422)
- 2013-14 Post-Release Supervised Persons – AB 109 Program - Fund No. 339 ($230,000)
- Special Police Communications / 9-1-1 System Tax Fund - Fund No. 554 ($2,321,328)

A new allocation within the Asset Forfeiture Trust Fund is required for Motorola CAD software and implementation services. An allocation adjustment is required for Fund No. 554 to increase the existing allocation originally approved in the FY 2014-15 Budget for the CAD system. No account adjustments are required for Fund No. 339.

If the LAPD does not proceed with the CAD upgrade, the LAPD's ability to dispatch patrol units to 9-1-1 calls for service will be jeopardized. Further, this upgrade is to a platform that is capable of supporting "Next Gen" 9-1-1, which will enable the LAPD to accept digital media (text messages, photos and video) to 9-1-1 when the State of California and County of Los Angeles 9-1-1 telephony infrastructure is in place to enable such functionality.

If you have any questions, please contact Chief Information Officer Maggie Goodrich, Information Technology Bureau, at (213) 486-0370.

Respectfully,

CHARLIE BECK
Chief of Police

Attachments

FIFTH AMENDMENT TO CONTRACT NUMBER C-123897
BETWEEN
THE CITY OF LOS ANGELES
AND
MOTOROLA SOLUTIONS, INC.

This is the **FIFTH AMENDMENT** to Contract Number C-123897 between the City of Los Angeles, a Municipal Corporation, ("City"), acting by and through the Los Angeles Police Department, ("LAPD"), and Motorola Solutions, Inc., a Delaware Corporation, "Motorola" or "Contractor".

RECITALS

WHEREAS, on May 8, 2014, the City and the Contractor entered into Contract No. C-123897 ("Original Agreement") for services; and

WHEREAS, Section 2.4 of the Original Agreement allows other City departments, including the Information Technology Agency, ("ITA"), to use the Original Agreement to make purchases of services as an "Eligible Purchaser"; and

WHEREAS, the Original Agreement provides for amendments; and

WHEREAS, the First Amendment provided for an upgrade of the LAPD's Geofile system for the 9-1-1 Dispatch Center and added a contract ceiling amount of $60,000; and

WHEREAS, the Second Amendment provided for a part of the upgrade of LAPD's radio system utilizing general fund monies and increased the contract ceiling by $86,951.08 for a total of $146,951.08; and

WHEREAS, the Third Amendment provided for the balance of the upgrade of LAPD's radio system utilizing grant fund monies and increased the contract ceiling by $1,646,439.92 for a total of $1,793,391; and

WHEREAS, the Fourth Amendment provided for communications equipment to be installed at the new Northeast Area station and increased the contract ceiling by $261,515 for a total of $2,054,906 and also provided for a $6,000,000 Contingency fund for future projects related to Scope of Agreement of the Original Agreement, increasing the total contract ceiling to $8,054,906; and

WHEREAS, this Fifth Amendment is necessary to purchase equipment and services related to LAPD's communications system utilizing Contingency funds.

NOW THEREFORE, the City and the Contractor agree that the Original Agreement be amended as follows:

1. Section 3.1 – Compensation, is hereby modified as follows:

   A. City shall pay to Contractor as compensation for complete and satisfactory performance of the terms of this Agreement, an amount not to exceed Eight Million Fifty-Four Thousand Nine Hundred Six Dollars ($8,054,906.00), including state and local taxes.

   B. Of the total amount of compensation included in Section 3.1 (A) above, the City will pay the Contractor for services to be performed, and tasks to be implemented as specified in this Agreement and the attached Exhibit 1 – Metro and Valley Logging Solution Integration, and satisfactorily performed in accordance with the terms of this Agreement, an amount not to exceed One Million Four Hundred Eighty-Nine Thousand Four Hundred Thirty-Six Dollars ($1,489,436.00), inclusive of taxes. The foregoing represents the total compensation to be paid to the Contractor for services to be performed and tasks to be implemented as specified in this Agreement.

   C. Of the Eight Million Fifty-Four Thousand Nine Hundred Six Dollars ($8,054,906.00) not to exceed amount in Section 3.1 (A) above, Two Million Fifty-Four Thousand Nine Hundred Six Dollars ($2,054,906.00) represents the amounts already paid through the First, Second, Third, and Fourth Amendments to this Agreement.

   D. The difference between the amounts specified in Section 3.1 (A) through Section 3.1 (C) above, Four Million Five Hundred Ten Thousand Five Hundred Sixty-Four Dollars ($4,510,564.00), is designated as Contingency monies to be dispersed at the sole discretion of the City in accordance with Section 5, Amendments and Change Requests, of this Agreement. The City will not be liable for payment of contingency monies unless the provisions in Section E herein are complied with.

   E. Limitation of City's Obligation to Make Payments to Contractor – Notwithstanding any other provision of this Agreement, including any exhibits or attachments incorporated therein, and in order for the City to comply with its governing legal requirements, the City shall have no obligation to make any payments to Contractor unless the City shall have first made an appropriation of funds equal to or in excess of its obligation to make any payments as provided in said Agreement. Contractor agrees that any services provided by Contractor, purchases made by Contractor or expenses incurred by Contractor in excess of said appropriation(s) shall be free and without charge to City and City shall have no obligation to pay for said services, purchases or expenses.

      As of the date of execution of this Fifth Amendment, funds have not yet been appropriated for the total amount of this Agreement. Contractor shall not perform work under this Agreement until the City notifies Contractor in writing of the amount and duration of the appropriation or, if it does perform such work, it will do so at its own risk of non-appropriation of funds. Appropriations for work to be performed under this Agreement shall be announced in conjunction with the individual

solicitations for proposals in the form of a work order or amendment issued by the Department to perform work under this Agreement.

F. Contractor must notify Department within fifteen (15) business days when eighty percent (80%) of the maximum compensation has been reached.

2. Section 2.1 – Term of Agreement, is hereby modified as follows:

   The term of this Agreement shall be from May 8, 2014 through May 7, 2019. Said term is subject to the termination provisions contained in Section 4 of the Original Agreement.

3. Ratification – Due to the need for the Contractor's services to be provided, should the Contractor provide services prior to the execution of this Fifth Amendment, to the extent that such services are satisfactorily performed, those services are hereby ratified.

4. In the event of an inconsistency between any of the provisions of this Fifth Amendment to Contract No. C-123897, or all prior or current attachments, the inconsistency shall be resolved by giving previous attachments and/or amendments precedence in the following order:

   1) Fifth Amendment through First Amendment to Contract No. C-123897, with the most current amendment having highest order of precedence;
   2) LAPD Contract No. C-123897, and
   3) Standard Provisions for City Contracts (Rev. 03/09).

Except as amended by this Fifth Amendment, all other terms and conditions of the Original Agreement, as amended by the First Amendment, Second Amendment, Third Amendment, and Fourth Amendment shall remain in full force and effect.

This Fifth Amendment includes four (4) pages and one (1) Exhibit and is executed in three (3) duplicate originals, each of which is deemed to be an original. The Original Agreement is hereby incorporated by reference, in its entirety, into this Fifth Amendment.

[Signatures are on the next page.]

IN WITNESS THEREOF, the parties hereto have caused this Fourth Amendment to be executed by their respective duly authorized representatives.

THE CITY OF LOS ANGELES

By: _____
CHARLIE BECK
Chief of Police

Date: 3/16/16

MOTOROLA SOLUTIONS, INC.

By: _____
MARK SCHMIDL
Vice President

Date: _____

APPROVED AS TO FORM:
MICHAEL N. FEUER, City Attorney

By: _____
LAUREL L. LIGHTNER
Assistant City Attorney

Date: _____

ATTEST:

HOLLY L. WOLCOTT, City Clerk

By: _____
Deputy City Clerk

Date: _____

City Business License Numbers: 18 100-004820 1105 1
18 100-001958 1105 1
18 100-000547 1105 1

Internal Revenue Service Taxpayer Identification Number: 36-1115800

Agreement Number: C – 123897-5

EXHIBIT 1

METRO AND VALLEY LOGGING SOLUTION INTEGRATION

Motorola Solutions, Inc.
10680 Treena Street, #200
San Diego, CA 92131
U.S.A.

November 16, 2015

Maggie Goodrich
Chief Information Officer, LAPD
Commanding Officer, Information Technology Bureau
100 West 1st Street, #842
Los Angeles, CA 90012

Subject: Firm Offer for Sale for Metro and Valley Logging Solution Integration

Dear Ms. Goodrich,

Motorola Solutions, Inc. ("Motorola") is pleased to present LAPD with this proposal and firm offer for sale for the Metro and Valley Logging Solution Integration.

Per your request, we have provided a firm offer for sale at under $1.5M (including tax) that will meet your budgetary needs. This pricing will remain in effect until December 20, 2015 and can be confirmed with the issuance of a purchase order for equipment utilizing the Motorola Master Equipment Contract (59456) and amendment to the Motorola Services Contract that will cover associated services.

As the industry's premier supplier of radio communications solutions, Motorola possesses many unique capabilities. Our state-of-the-art technology and successful deployment history allow us to provide effective solutions to your complex business problems while contributing to your organizational productivity and effectiveness.

Questions or inquiries may be addressed to your Account Executive, Hugh ODonnell. We look forward to working with you on another successful radio deployment.

Sincerely,

Motorola Solutions, Inc.

HChercoe

Howard Chercoe

MSSSI Vice President

CITY OF LOS ANGELES POLICE DEPARTMENT NOVEMBER 16, 2015

METRO & VALLEY LOGGING SOLUTION INTEGRATION

MOTOROLA

TABLE OF CONTENTS

Section 1

SECTION 1

STATEMENT OF WORK

1.1 OVERVIEW

This Statement of Work (SOW) describes the deliverables to be furnished to the City of Los Angeles Police Department. The tasks described herein will be performed by Motorola, its subcontractors, and the City of Los Angeles Police Department (LAPD) to implement the solution described in the System Description. It describes the actual work involved in installation, identifies the installation standards to be followed, and clarifies the responsibilities for both Motorola and LAPD during the project implementation. Specifically, this SOW provides:

- A summary of the phases and tasks to be completed within the project lifecycle.
- A list of the deliverables associated with the project.
- A description of the responsibilities for both Motorola and LAPD.
- The qualifications and assumptions taken into consideration during the development of this project.

This SOW provides the most current understanding of the work required by both parties to ensure a successful project implementation. In particular, Motorola has made assumptions of the sites to be used for the new system. Should any of the sites change, a revision to the SOW and associated pricing will be required. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, Contract Design Review (CDR), and any other change orders that may occur during the execution of the project.

Motorola will provide a NICE Telephony Logging Recorder solution with seven years of online audio retrieval and will integrate it with the existing Radio IP Logging Recorder through NICE Inform Version 7. In addition, the solution will allow search and playback of audio from NicePerfom Legacy audio and NRX Audio from a single Inform workstation.

1.2 ASSUMPTIONS

Motorola has based the system design on information provided by the City of Los Angeles Police Department and an analysis of their system requirements. All assumptions have been listed below for review. Should Motorola's assumptions be deemed incorrect or not agreeable to LAPD, a revised proposal with the necessary changes and adjusted costs may be required. Changes to the equipment or scope of the project after contract may require a change order

- All work is to be performed during normal work hours, Monday through Friday 8:00 a.m. to 5:00 p.m.
- All existing sites or equipment locations will have sufficient space available for the system described.
  - This includes available spaces for proposed cabinets, cables, and cable entry ports.
- All existing sites or equipment locations will have adequate electrical power and site grounding suitable to support the requirements of the system described.
  - It is assumed that the LAPD will provide AC and/or DC power distribution units.

- LAPD is responsible for providing open conduit space for Motorola to route and install CAT6 and ground cables.

- Any site/location upgrades or modifications are the responsibility of LAPD.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment, are the responsibility of LAPD.
- All Fiber, T1, Ethernet and other necessary site connectivity will be provided by the LAPD.
- LAPD will terminate all Fiber, T1, and Ethernet connections at the location of the proposed equipment racks.
- Any required system interconnections not specifically outlined here will be provided by LAPD, including but not limited to dedicated phone circuits or microwave links.
- The LAPD Data Team is responsible for the required updates to the Los Angeles Police Department's (LAPD) customer network to support the NICE system. Motorola will provide the required supporting network information (i.e. protocols, ports, etc.) required to complete this task.
- The sites are assumed to have adequate power, HVAC, floor space and Ethernet capacity between the sites.
- LAPD will have all customer provided equipment correctly ordered and ready for installation per the project schedule. Should any of the required equipment be missing or incorrectly configured, this will be considered a delay to the project. Re-mobilization, etc., will be paid for by LAPD and documented through the change order process.

1.3 CONTRACT

1.3.1 Contract Award (Milestone)

- LAPD and Motorola execute the contract and both parties receive all the necessary documentation.

1.3.2 Contract Administration

Motorola Responsibilities:

- Assign a Project Manager, as the single point of contact with authority to make project decisions.
- Assign resources necessary for project implementation.
- Set up the project in the Motorola information system.
- Schedule the project kickoff meeting with LAPD.

LAPD Responsibilities:

- Assign a Project Manager, as the single point of contact responsible for LAPD-signed approvals.
- Assign other resources necessary to ensure completion of project tasks for which LAPD is responsible.

Completion Criteria:

- Motorola internal processes are set up for project management.
- Both Motorola and LAPD assign all required resources.
- Project kickoff meeting is scheduled.

1.3.3 Project Kickoff

Motorola Responsibilities:

- Conduct a project kickoff meeting during the CDR phase of the project.
- Ensure key project team participants attend the meeting.
- Introduce all project participants attending the meeting.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Review the overall project scope and objectives with LAPD.
- Review the resource and scheduling requirements with LAPD.
- Review the Project Schedule with LAPD to address upcoming milestones and/or events.
- Review the teams' interactions (Motorola and LAPD), meetings, reports, milestone acceptance, and LAPD's participation in particular phases.

LAPD Responsibilities:

- LAPD's key project team participants attend the meeting.
- Review Motorola and LAPD responsibilities.

Completion Criteria:

- Project kickoff meeting completed.
- Meeting notes identify the next action items.

1.4 CONTRACT DESIGN REVIEW

1.4.1 Review Contract Design

Motorola Responsibilities:

- Meet with the LAPD project team.
- Review the operational requirements and the impact of those requirements on various equipment configurations.
- Establish a defined baseline for the system design and identify any special product requirements and their impact on system implementation.
- Review the System Design, Statement of Work, Project Schedule, and Acceptance Test Plans, and update the contract documents accordingly.
- Discuss the proposed Cutover Plan and methods to document a detailed procedure.
- Submit design documents to LAPD for approval. These documents form the basis of the system which Motorola will manufacture, assemble, and install.
- Prepare equipment layout plans for the field.
- Provide minimum acceptable performance specifications for microwave, fiber, or copper links. Establish demarcation point (supplied by the Motorola system engineer) to define the connection point between the Motorola-supplied equipment and the LAPD-supplied link(s) and external interfaces (i.e. telephony audio, etc.). Finalize site acquisition and development plan.
  - Conduct site evaluations to capture site details of the system design and to determine site readiness.
  - Determine each site's ability to accommodate proposed equipment based upon physical capacity.
  - If applicable, test existing equipment with which Motorola equipment will interface.
- Prepare Site Evaluation Report that summarizes findings of above-described site evaluations.

Restrictions:

- Motorola is not responsible for issues outside of its immediate control. Such issues include, but are not restricted to, configuration of the LAPD customer network, incorrect servers and/or equipment provided by LAPD.
- If, for any reason, any of the proposed sites cannot be utilized due to reasons beyond Motorola's control, the costs associated with site changes or delays including, but not limited to, re-engineering, limited power, limited space availability, site permitting, schedule delays, site abnormalities, re-mobilization, etc., will be paid for by LAPD and documented through the change order process.

LAPD Responsibilities:

- LAPD's key project team participants attend the meeting.
- Make timely decisions, according to the Project Schedule.

Completion Criteria:

- Complete Design Documentation, which may include updated System Description, Equipment List, system drawings, or other documents applicable to the project.
- Incorporate any deviations from the proposed system into the contract documents accordingly.
- The system design is "frozen" in preparation for subsequent project phases such as Order Processing and Manufacturing.
- A Change Order is executed in accordance with all material changes resulting from the Design Review to the contract.

1.4.2 Design Approval (Milestone)

- LAPD executes a Design Approval milestone document.

1.5 ORDER PROCESSING

1.5.1 Process Equipment List

Motorola Responsibilities:

- Validate Equipment List by checking for valid model numbers, versions, compatible options to main equipment, and delivery data.
- Enter order into Motorola's Customer Order Fulfillment (COF) system.
- Create Ship Views, to confirm with LAPD the secure storage location(s) to which the equipment will ship. Ship Views are the mailing labels that carry complete equipment shipping information which direct the timing, method of shipment, and ship path for ultimate destination receipt.
- Create equipment orders.
- Reconcile the equipment list(s) to the Contract.
- Procure third-party equipment if applicable.

LAPD Responsibilities:

- Approve shipping location(s).

Completion Criteria:

- Verify that the Equipment List contains the correct model numbers, version, options, and delivery data.
- Trial validation completed.

- Bridge the equipment order to the manufacturing facility.

1.6 MANUFACTURING AND STAGING IN THE FIELD

1.6.1 Manufacture Non-Motorola Equipment

Motorola Responsibilities:

- Procure non-Motorola equipment necessary for the system based on equipment order.

LAPD Responsibilities:

- None.

Completion Criteria:

- Ship non-Motorola manufactured equipment to the field.

1.6.2 Ship to Customer Provided Location (Milestone)

- Ship all equipment needed to the customer facility.

1.6.3 Stage System

Motorola Responsibilities:

- Verify LAPD provided equipment is correct and present.
- Set up and rack the system equipment on a site-by-site basis in the field at each of the sites.
- Cut and label cables according to the approved CDR documentation.
- Label the cables with to/from information to specify interconnection for field installation and future servicing needs.
- Complete the cabling/connecting of the subsystems to each other ("connectorization" of the subsystems).
- Assemble required subsystems to assure system functionality.
- Power up, program, and test all installed equipment.
- Confirm system configuration and software compatibility to the existing Radio IP logging system.
- Load application parameters on all equipment according to input from Systems Engineering.
- Complete programming of the Fixed Network Equipment.
- Complete programming of the NICE Telephony Logger and NICE Inform.
- Inventory the equipment with serial numbers and installation references.
- Complete system documentation.
- Provide an Acceptance Test Plan.

LAPD Responsibilities:

- Provide LAPD supplied equipment according to CFEI list per the Project Schedule.
- Provide information on existing system interfaces as may be required.
- Provide information on room layouts or other information necessary for the assembly to meet field conditions.
- LAPD Data Team to configure LAPD network as required allowing the audio flow as required and defined by the Motorola Team.

Completion Criteria:

- System field staging completed.

1.7 CIVIL WORK FOR THE LAPD-PROVIDED FACILITIES

Motorola Responsibilities:

- Provide electrical requirements for each equipment rack to be installed in the LAPD-provided facilities.
- Provide heat load for each equipment rack to be installed in the LAPD-provided facilities.

LAPD Responsibilities:

- Extend LAPD provided electrical to equipment cabinets and terminate at the OP8 or Cabinet electric panel.
- If applicable and based on local jurisdictional authority, LAPD will be responsible for any installation or up-grades of the Critical Operation Power Systems in order to comply with NFPA 70, Article 708.
- Secure site lease/ownership, zoning, permits, regulatory approvals, easements, power, and Telco connections.
- Provide clear and stable access to the sites for transporting electronics and other materials. Sufficient site access must be available for trucks to deliver materials under their own power and for personnel to move materials to the facility without assistance from special equipment.
- Design and construct facilities for housing communications equipment such as shelters, generators, fuel tanks, fenced compounds, etc.
- Supply adequately sized electrical service, backup power (UPS, generator, batteries, etc.) including the installation of conduit, circuit breakers, outlets, etc., at each equipment location.
- Provide AC power to the demarcation point(s) indicated in the documentation, including the associated electrical service and wiring (conduit, circuit breakers, etc.).
- Provide adequate HVAC, grounding, lighting, cable routing, and surge protection (also, among existing and Motorola-provided equipment) based upon Motorola's Standards and Guidelines for Communication Sites (R56). Ceiling (minimum 9 feet) and cable tray heights (minimum 8 feet) in the equipment rooms in order to accommodate 7-foot, 6-inch equipment racks.
- Provide floor space and desk space for the System equipment at the LAPD-provided facilities. Each rack shall be provided a minimum of 24-inch x 24-inch footprint with 36-inch clearance in the front and back.
- Relocate existing equipment, if needed, to provide required space for the installation of Motorola-supplied equipment.
- Bring grounding system up to Motorola's R56 standards and supply a single point system ground of 5 ohms or less, to be used on all FNE supplied under the Contract. Supply grounding tie point within 10 feet from the Motorola-supplied equipment.
- Provide obstruction-free area for the cable run between the demarcation point and the logging solution equipment.
- Resolve any environmental issues including, but not limited to, asbestos, structural integrity (rooftop, water tank, tower, etc.) of the site, and any other building risks. (Resolve environmental or hazardous material issues).
- Supply all permits as contractually required.
- Supply interior building cable trays, raceways, conduits, and wire supports.
- Supply engineering and drafting as required for modifications to existing building drawings for site construction.

- Pay for usage costs of power and generator fueling, both during the construction and installation effort, and on an ongoing basis.
- Complete all LAPD deliverables in accordance within the approved project schedule.

Completion Criteria:

- All sites are ready for equipment installations in compliance with Motorola's R56 standards.

1.8 SYSTEM INSTALLATION

1.8.1 Install Fixed Network Equipment

Motorola Responsibilities:

- Motorola will be responsible for the installation of all fixed equipment contained in the equipment list and outlined in the System Description based upon the agreed to floor plans, at the sites where the physical facility improvement is complete and the site is ready for installation. All equipment will be properly secured to the floor and installed in a neat and professional manner, employing a standard of workmanship consistent with its own R-56 installation standards and in compliance with applicable National Electrical Code (NEC) and EIA.
- For installation of the fixed equipment at the various sites, Motorola will furnish all cables for power, audio, control, and audio transmission to connect the Motorola supplied equipment to the power panels or receptacles and the audio/control line connection point.
- During field installation of the equipment, any required changes to the installation will be noted and assembled with the final 'as-built' documentation of the system.
- Will not provide storage location for the Motorola-provided equipment. Receive and inventory all equipment.
- Bond the supplied equipment to the site ground system in accordance with Motorola's R56 standards.
- Will not interface with the following network connections:
  - Existing Ethernet, fiber and/or T1 interface connectivity.
  - Existing Audio Distribution Frame (Block Field) and Contact Closure (Block Field).
- Will remove existing NicePerfom Legacy and NRX equipment and rack.
- Will not remove any other existing equipment.
- Will not relocate existing equipment.
- Will dispose of existing NicePerfom Legacy and NRX equipment.
- Will not dispose of any other existing equipment.
- Will provide cabinets for the new backroom equipment.

LAPD Responsibilities:

- Provide secure storage for the Motorola-provided equipment, at a location central to the sites. Motorola coordinates the receipt of the equipment with LAPD's designated contact, and inventory all equipment.
- Provide access to the sites, as necessary.

Completion Criteria:

- Fixed Network Equipment installation completed and ready for optimization.

1.8.2 Fixed Network Equipment Installation Complete

- All fixed network equipment installed and accepted by LAPD.

1.8.3 System Installation Acceptance (Milestone)

- All equipment installations are completed and accepted by LAPD.

1.9 SYSTEM OPTIMIZATION

1.9.1 Optimize System FNE

Motorola Responsibilities:

- Motorola and its subcontractors optimize the subsystem.
- Verify that all equipment is operating properly.
- Verify that all audio and data levels are at factory settings.
- Verify communication interfaces between devices for proper operation.
- Test features and functionality are in accordance with manufacturers' specifications and that they comply with the final configuration established during the CDR/system field staging.

LAPD Responsibilities:

- Provide access/escort to the sites.
- Define the logging recorder Telephony Information to be logged. Users to continue operating on the existing telephony/Inform logging subsystem until cutover.

Completion Criteria:

- System FNE optimization is complete.

1.9.2 Link Verification

Motorola Responsibilities:

- Perform test to verify site link performance, prior to the interconnection of the Motorola-supplied equipment to the link equipment.
- Perform Network test to verify end to end communications between devices.

LAPD Responsibilities:

- Make available the required links which meet the specifications supplied by Motorola at the CDR.
- Make the required modifications to the existing network to meet the specifications/requirements supplied by Motorola at the CDR.

1.9.3 Completion Criteria:

- Link verification successfully completed.

1.9.4 Optimization Complete

- System optimization is completed. Motorola and the LAPD agree that the equipment is ready for acceptance testing.

1.10 TRAINING

1.10.1 Perform Training

Motorola Responsibilities:

- Finalize training schedules purchased as part of this project with the LAPD Project Manager.
- Conduct the training classes outlined in the Training Plan.

LAPD Responsibilities:

- Attend training classes.
- Comply with the prerequisites in the Training Plan.

Completion Criteria:

- All training classes completed.

1.10.2 Training Complete

- All training classes completed.

1.11 AUDIT AND ACCEPTANCE TESTING

1.11.1 Perform R56 Installation Audit

Motorola Responsibilities:

- Perform R56 site-installation quality audits, verifying proper physical installation and operational configurations.
- Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola's Standards and Guidelines for Communication Sites (R56).

LAPD Responsibilities:

- Provide access/escort to the sites.
- Witness tests. (if desired)

Completion Criteria:

- All R56 audits completed successfully.

1.11.2 Perform Equipment Testing

Motorola Responsibilities:

- Test individual components of the system to verify compliance to the equipment specifications.
- Repeat any failed test(s) once Motorola (or LAPD) has completed the corrective action(s).
- Prepare documentation of component tests to be delivered as part of the final documentation package.

LAPD Responsibilities:

- Witness tests if desired.

Completion Criteria:

- Successful completion of equipment testing.

1.11.3 Perform Functional Testing

Motorola Responsibilities:

- Verify the operational functionality and features of the individual subsystems and the system supplied by Motorola, as contracted.
- If any major task as contractually described fails, repeat that particular task after Motorola determines that corrective action has been taken.
- Document all issues that arise during the acceptance tests.
- Document the results of the acceptance tests and present to LAPD for review.
- Resolve any minor task failures before Final System Acceptance.

LAPD Responsibilities:

- Witness the functional testing.

Completion Criteria:

- Successful completion of the functional testing.
- LAPD approval of the functional testing.

1.11.4 System Acceptance Test Procedures (Milestone)

- LAPD approves the completion of all the required tests.

1.12 FINALIZE

1.12.1 Cutover

Motorola Responsibilities:

- Motorola and LAPD develop a mutually agreed upon cutover plan based upon discussions held during the CDR.
- During cutover, follow the written plan and implement the defined contingencies, as required.
- Conduct cutover meeting(s) with user group representatives to address both how to mitigate technical and communication problem impact to the users during cutover and during the general operation of the system.

LAPD Responsibilities:

- Attend cutover meetings and approve the cutover plan.
- Notify the user group(s) affected by the cutover (date and time).
- Conduct a roll call of all users working during the cutover, in an organized and methodical manner.
- Ensure that all Inform users are trained.
- Ensure that the Loggers and Inform are operating on new system prior to old system being removed.

Completion Criteria:

- Successful migration from the old system to the new system.

1.12.2 Resolve Punchlist

Motorola Responsibilities:

- Work with LAPD to resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.

LAPD Responsibilities:

- Assist Motorola with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist item(s).

Completion Criteria:

- All punchlist items resolved and approved by LAPD.

1.12.3 Transition to Service/Project Transition Certificate

Motorola Responsibilities:

- Review the items necessary for transitioning the project to warranty support and service.
- Provide a LAPD Support Plan detailing the warranty and post-warranty support, if applicable, associated with the Contract equipment.

LAPD Responsibilities:

- Participate in the Transition Service/Project Transition Certificate (PTC) process.
- Complete the NICE Remote Access Consent Form.
  - NICE Remote Access Consent Form provided below.

Completion Criteria:

- All service information has been delivered and approved by LAPD.

1.12.3.1 NICE Remote Access Consent Form.

MOTOROLA SOLUTIONS

NICE Remote Access Approval Form

Motorola Solutions, Inc. and NICE Systems currently support deployed NICE IP loggers and replay stations in Motorola ASTRO®25 radio networks. The NICE IP Loggers, Scenario Replay or Inform replay stations are an integrated solution comprised of NICE proprietary software running on a Motorola hardware platform.

Motorola's direct engagement of NICE Systems for support of the Loggers, Scenario Replay or Inform replay stations is essential due to the proprietary nature of the software. To efficiently and effectively manage the support of these devices, as well as future deployments, Motorola is requesting NICE Systems Support Center in Denver Colorado have remote access to these devices.

To enable NICE Systems to remotely diagnosis the NICE IP Loggers, Scenario Replay or Inform replay stations, Motorola requires network monitoring of your ASTRO®25 radio network which provides the network connection. Network monitoring is a service provided by Motorola's System Support Center.

Motorola has evaluated the safeguards, such as personnel and IT, that NICE Systems has in place regarding their support operation in Denver Colorado for access into the ASTRO®25 radio systems as well as the steps Motorola has put in place for the VPN connection that NICE Systems will use to access the Motorola System Support Center network. It is Motorola's judgment that NICE Systems meets or exceeds Motorola's security criteria and as such Motorola's recommendation is that you give your consent allowing NICE Systems to conduct remote connectivity support of the IP Loggers, Scenario Replay or Inform replay stations deployed on the ASTRO®25 radio systems.

By giving your consent NICE Systems can remotely diagnose the performance of the NICE Logging recorder, Scenario Replay or Inform replay stations providing your ASTRO®25 radio.

System Information:

Company Name_____

System ID_____

IP Address for:

MCC 7500 IP Logging Recorder(s)_____

Archiving Interface Server (AIS)_____

Playback Workstation_____

I give consent for NICE Systems to have remote access into Motorola ASTRO®25 radio system.

Printed Name_____

Authorized Signature _____

Date_____

I do not give consent for NICE Systems to have remote access into Motorola ASTRO® radio system.

Printed Name_____

Authorized Signature_____

Date_____

Motorola field representative.

Motorolan Printed Name_____

Motorolan authorized signature_____

Date_____

Check this box if you would like the Motorola System Support Center to change the MOTOSEC password account and have NICE create a local MOTOSEC admin password when accessing the logging system.

1.12.4 Finalize Documentation

Motorola Responsibilities:

- Provide an electronic as-built system manual on a Compact Disc (CD). The documentation will include the following:
  - System-Level Diagram
  - Site Floor Plans
  - Site Equipment Rack Configurations
  - Functional Acceptance Test Plan Test Sheets and Results
  - Equipment Inventory List
  - Maintenance Manuals (where applicable)
  - Technical Service Manuals (where applicable)

  Drawings are created utilizing AutoCAD design software and will be delivered in Adobe PDF format. All other system manual documents converted from native format to Adobe PDF format to be included on the System Manual CD.

LAPD Responsibilities:

- Receive and approve all documentation provided by Motorola.

Completion Criteria:

- All required documentation is provided and approved by LAPD.

1.12.5 Final Acceptance (Milestone)

- All deliverables completed, as contractually required.
- Final System Acceptance received from LAPD.

1.13 PROJECT ADMINISTRATION

1.13.1 Project Status Meetings

Motorola Responsibilities:

- Once a month or as agreed, Motorola Project Manager, or designee, will attend all project status meetings with LAPD, as determined during the CDR.
- Record the meeting minutes and supply the report.
- The agenda will include the following:
  - Overall project status compared to the Project Schedule.
  - Product or service related issues that may affect the Project Schedule.
  - Status of the action items and the responsibilities associated with them, in accordance with the Project Schedule.
  - Any miscellaneous concerns of either LAPD or Motorola.

LAPD Responsibilities:

- Attend meetings.
- Respond to issues in a timely manner.

Completion Criteria:

- Completion of the meetings and submission of meeting minutes.

1.13.2 Progress Milestone Submittal

Motorola Responsibilities:

- Submit progress (non-payment) milestone completion certificate/documentation.

LAPD Responsibilities:

- Approve milestone, which will signify confirmation of completion of the work associated with the scheduled task.

Completion Criteria:

- LAPD approval of the Milestone Completion document(s).

1.13.3 Change Order Process

- Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost, change in system configuration or adds time to the project's timeline required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

SECTION 2

PROJECT DESCRIPTION

2.1 PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide an overview of the customer requirements and a detailed review of the telephony recording system proposed to meet the requirements for the City of Los Angeles Police Department (LAPD). The document will include basic information pertaining to the implementation of the NICE Recording logger technology supported by a detailed Implementation Plan that will accompany this document.

2.2 LAPD REQUIREMENTS OVERVIEW

Due to current product End of Support and End of Life dates, the LAPD has requested a proposal to replace the current NiceLog Perform system with current audio recording technology with a secondary goal of replacing all Windows 2003 Server based systems with Windows 2012 Server based systems.

The main goals as identified by LAPD are:

- NICE Systems to partner with Motorola for the sale and implementation of the updated logger platform
- Update recorders to current technology.
- Provide recording systems compatible with Windows 2008 as a minimum.
- Record all of the primary 96 channels using analog interface with contact closure.
- Provide redundancy of the audio channels, audio archives and call records databases.
- Upgrade Inform to Version 7 to allow compatibility with both Motorola radio loggers and new telephony loggers.
- Allow search and playback of audio from NicePerfom Legacy audio and NRX Audio from a single Inform workstation.
- Provide a system to allow for the monitoring of system alarms for NICE hardware and software excluding P25 systems.
- Retain legacy audio for minimum of 7 years for online retrieval.
- Retain all new audio for 7 years for online retrieval.
- Complete "As Built" drawings and documentation for support purposes.
- Complete the installation by the end of February of 2016.

2.3 THE CITY OF LOS ANGELES POLICE DEPARTMENT

The City of Los Angeles Police Department (LAPD) is the third largest municipal police department in the United States with a population of just over 3.7 million people.

The LAPD utilizes two dispatch centers, Metro and Valley, located at two geographically separated sites within the City. These sites both answer calls for service from citizens based on loading and location. The audio is not duplicated from site to site; they are independent dispatch centers with their own unique audio.

Each 911 center has eighty (80) single step call taker/dispatch positions. The call takers answer the 911 call and are responsible for the dispatch of police services from the same position. There are a number of other positions at each location such as supervisors, SMO and training. The LAPD utilizes Airbus Vesta 911 consoles with ACUs for analog audio and contact closure.

2.4 CURRENT LAPD RECORDING SYSTEM

The recording systems for Metro and Valley are located in secure equipment rooms at two physically separate sites. Today, there are two recording systems installed in these equipment rooms. First, a legacy WordNet system is installed in two sections of a 2 post rack. The recording system hardware is powered down and not operational. The archives for the WordNet are still available on servers installed in a 4 post cabinet.

The entire WordNet system has been earmarked for removal from service once the LAPD communications team advises the Project group that the audio will no longer be available for review.

The current NicePerform recording system at the Metro site consists of the following components:

- 96 Channel NiceLog x 2.
- 72 Channel NiceLog x 1.
- CLS Server x 10.
- Audio Archive Server x 2.
- Domain Controller x 2.
- Primary Inform Server x 1.
- Resilient Inform Server x 1.

The current NicePerform recording system at the Valley site consists of the following components:

- 96 Channel NiceLog x 2.
- 72 Channel NiceLog x 1.
- CLS Server x 10.
- Audio Archive Server x 2.
- Domain Controller x 2.
- Resilient Inform Server x 2.

All of the NiceLog recorders are configured with analog channels and contact closure for recording triggers. Each NiceLog has multiple CLS servers associated with it to allow for the archiving of audio to multiple destinations as required by the product design.

The 96 channel NiceLog recorders are configured in parallel to provide hardware and audio capture redundancy. The audio recorded at the Metro site is archived at the local site and across the LAPD network to the Valley site. This same scenario is duplicated at the Valley site.

The 72 channel loggers are currently not online however there is legacy audio associated to these from the past.

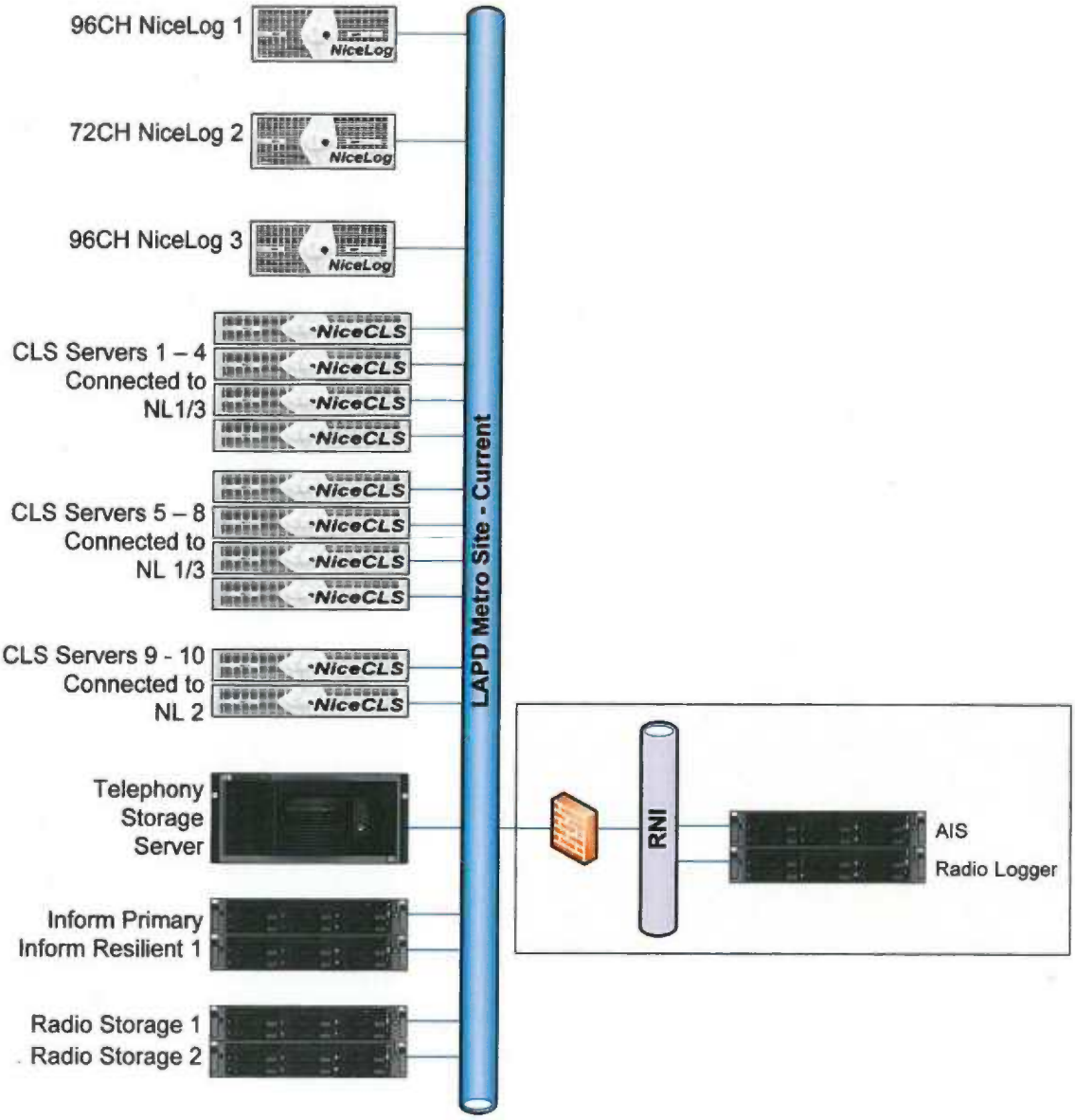


Figure 2-1: Current NiceLog Implementation

2.5 LAPD LOGGER DESIGN SUMMARY

NICE Systems has been tasked with upgrading the telephony loggers at both the Metro and Valley sites following the stated requirements by LAPD.

The following summary highlights general areas which meet the system design related to LAPD's stated requirements.

- Provide a NICE Recording (NRX) telephone logging solution to replace the current NicePerform system at Metro and Valley sites
- Provide a new long-term archiving solution at Metro and Valley sites
- Remove system domain controllers and implement NRX using a local Windows Workgroup
- Motorola to implement a local CEN0 at Metro and Valley Sites that is connected to the RNI via a Firewall allowing for radio and telephony audio to be searched from the Inform workstations within the LAPD network
- Upgrade existing Inform Application and User Licenses from Inform R3.2 to Inform R7.0
- Add Inform Reporter module to Inform
- Add User Registration Application to allow for the collection of Windows User Names in the call record database
- Collect ANI/ALI data on all NRX recorders at both Metro and Valley sites
- Include CastleRock SNMP system alert monitoring application on the customer networks at Metro and Valley Sites
- Retain current recording strategy, user access and archiving configuration with the new solution
- Retain access to existing audio and call record database from the NiceLog logging system converting all SQL 2005 to SQL 2012 and transitioning the new host servers to Windows 2012 Server
- Decommission all NicePerform systems specific to Windows 2003 operating systems components once migration of data and audio to new hosts is complete
- Solution to be software only, allowing LAPD to provide and support the system hardware and cabinets
- Implement a solution using methodologies which will minimize or eliminate system downtime

Special Note: In addition to the telephony audio, NICE currently records Motorola radio audio using Motorola IP recorders at the Metro and Valley locations. This audio is captured and archived to NICE Storage Center servers.

The telephony logger replacement project being outlined in this document will place loggers compatible with the Motorola loggers and co-exist in the same recording enterprise. Once Inform is upgraded, all loggers in the recording enterprise will be searchable from a single Inform user workstation.

2.6 LAPD NRX LOGGER DESIGN DETAIL

2.6.1 Basic System Overview

NICE has designed a telephony voice logging system to meet the requirements of the LAPD as outline above.

NRX Logging Recorder

At the core of the design is the NICE Recording Express (NRX) logging system.

The NRX platform is a reliable and future-proofed recording solution ideal for any size of enterprise to capture, store, retrieve and play back voice communications. It can be used in traditional TDM or IP telephony environments to deliver high quality voice recordings for all applications including verification, dispute resolution, training and quality monitoring. The industry leading technology from NICE built into NICE Recording Express is used by the world's leading Public Safety, financial, and government organizations. By taking advantage of commercial off-the-shelf (COTS) hardware and customer provided network storage devices, this award-winning voice recording solution provides unsurpassed functionality while reducing a PSAPs total cost of ownership. This flexible product delivers high quality voice recordings of traditional TDM or VoIP telephony audio sources.

A primary NRX will be configured with 96 analog channels which will use contact closure for record triggering. The contact closure activation will be interfaced to the Airbus Vesta ACU which provides both the analog audio output and the relay closure for on and off hook record triggers.

In addition to the primary logger, there will be two (2) additional NRX's with 96 analog channels and contact closure. All three NRX systems will be connected to the audio in parallel resulting in the capture of three (3) copies of the same audio and call record data within both the Metro and Valley sites.

ANI/ALI

The LAPD currently utilizes the Airbus Vesta 911 system for both the Metro and Valley dispatch centers. This system provides an ANI/ALI output that will be used to provide data to each of the loggers at the Metro and Valley to allow the search of audio based on caller ANI/ALI information.

Each site has a single serial ANI/ALI feed that comes into the center. It needs to be shared between the CAD system and the voice loggers. A RS232 serial feed is technically not able to be physically split. To accomplish this, external hardware is recommended that has a single serial input, electronically buffers the data, and then sends the same data to a number of output ports simultaneously. This provides an effective RS232 signal for all output ports and can serve a number of devices.

The Metro and Valley sites will each require a single serial data buffer to accomplish the collection of ANI/ALI data from the supplied port and output the data to the three NRX loggers. The additional ports can be used for other systems within the 911 center as needed, such as CAD.

Audio and Data Archives

Archive servers for audio and data will be located at both the Metro and Valley sites. Audio and data from the Metro site will archive to a local server as well as audio and data from the Valley site. Audio and data from the Valley site will archive to its local server as well as to the secondary Metro archive server to provide geographic redundancy of the audio and data.

From a redundancy perspective, the end result is:

- 3 Loggers at the Metro Site for Redundant Physical Recording Hardware.
- 3 Loggers at the Valley Site for Redundant Physical Recording Hardware.
- 3 Copies of All Recorded Audio at the Metro Site.
- 3 Copies of All Recorded Audio from Metro at the Valley Site for Geographic Redundancy.
- 3 Copies of All Recorded Audio at the Valley Site.
- 3 Copies of All Recorded Audio from Valley at the Metro Site for Geographic Redundancy.
- 3 Copies of the Metro Call Record Database at the Metro Site.
- 3 Copies of the Metro Call Record Database at the Valley Site for Geographic Redundancy.
- 3 Copies of the Valley Call Record Database at the Valley Site.
- 3 Copies of the Valley Call Record Database at the Metro Site for Geographic Redundancy.

Audio Search and Playback

Playback of all audio will be from LAPD workstations that have access to the Inform servers at either Metro or Valley through the LAPD network. Users must be set up within Inform and will be authenticated first through the LAPD network, then will require a login to the NICE Inform server in which they are connected to.

Once a user logs into their Windows workstation with a unique username, that username will be captured in the call records database using the NICE User Registration Application and made available when searching for telephony calls recorded for the phone associated to the workstation at that position.

Legacy Audio

A critical part of the system design is the ability for LAPD to be able to remove all Windows 2003 Server based hardware from their networks. The remaining items with Windows 2003 are the current CLS Databases and audio storage servers.

Moving to the new logger design will allow the LAPD to move the existing contents to Windows 2012 based Servers and then decommission the current Windows 2003 Server based servers. Once the data migration is complete, the new Windows 2012 Server based hardware will reside on the NRX VLAN and the legacy audio and data will be made available for searches well into the future.

An overview of the Legacy data migration is provided later in this document. A detailed plan is provided in the enclosed LAPD Implementation Plan document.

Note: It is important to note that while the database conversion and transition to new servers is taking place, the current databases will remain online and available for searching all legacy audio. There will be no need to take the old databases off line until the system is ready for decommissioning.

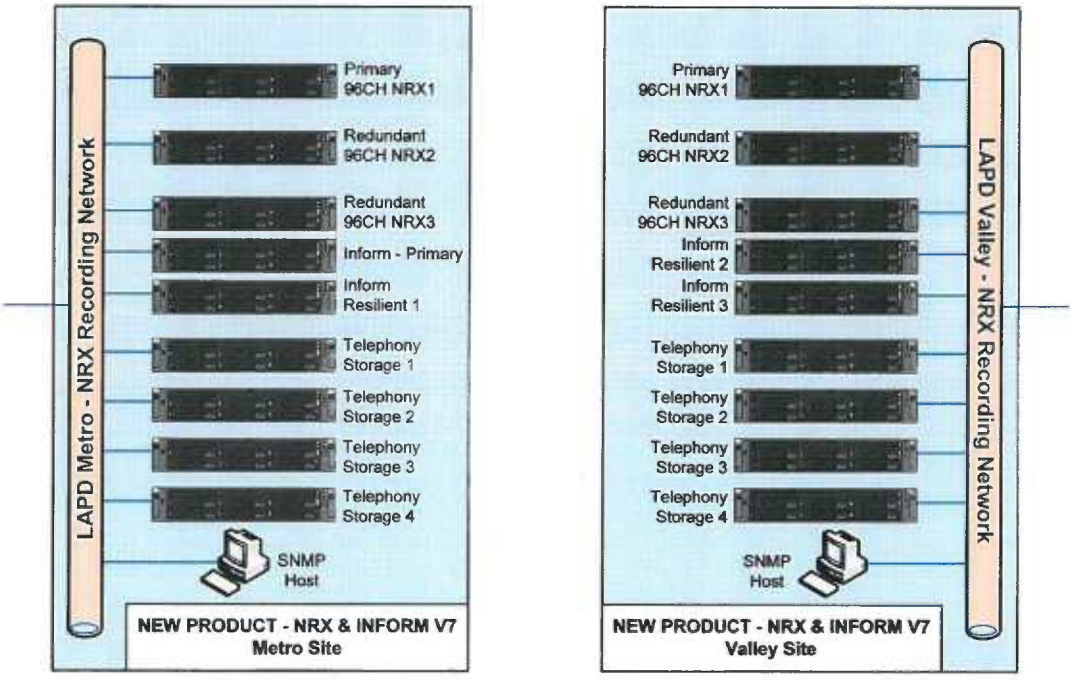


Figure 2-2: NRX Recording Solution

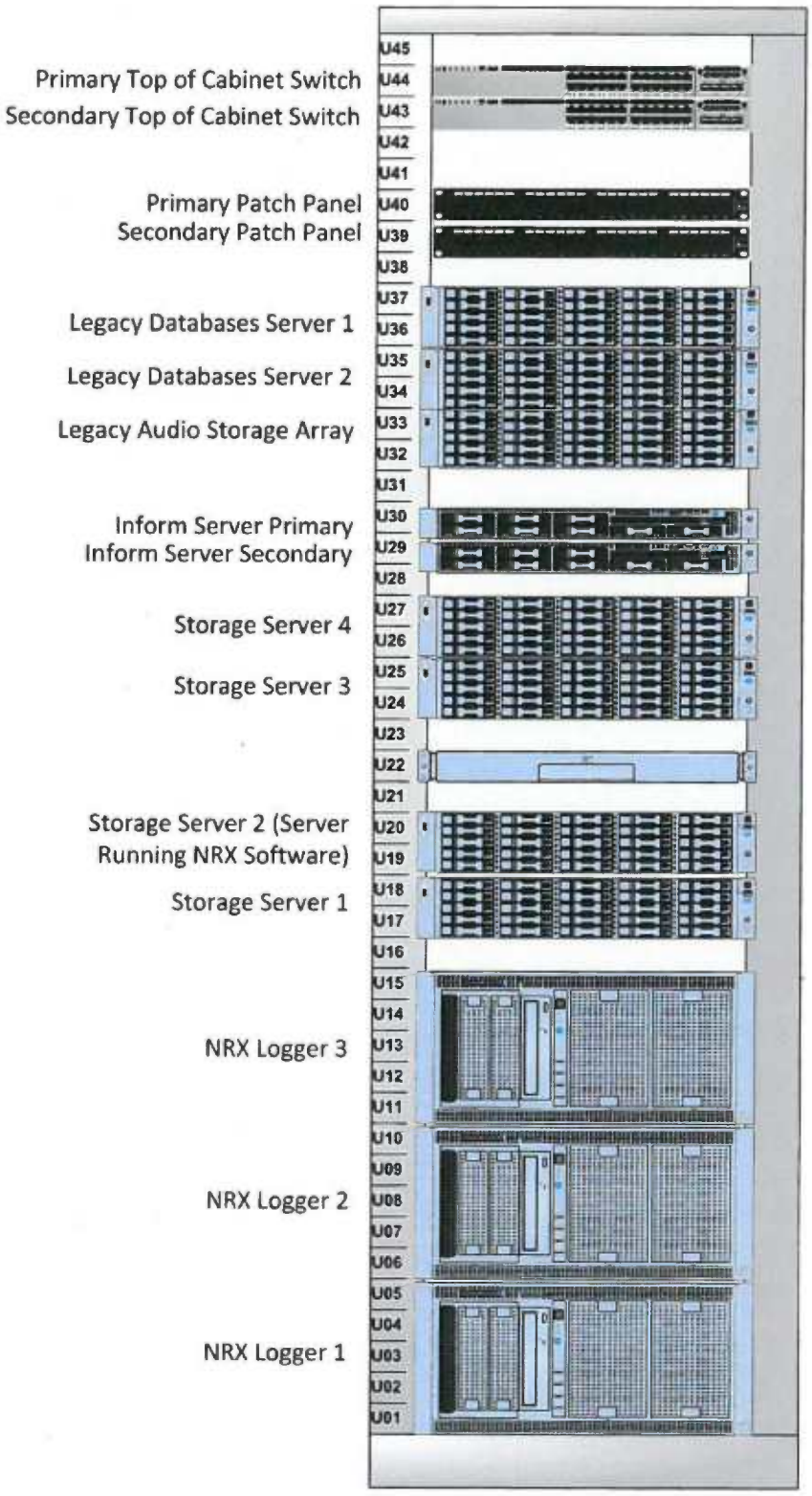


Figure 2-3: Rack Layout for NICE Recorders

2.6.2 Additional Redundancy - Network

In addition to the logger hardware and software redundancy, it is possible to further enhance the overall redundancy of the recording system design through the enhancement of the physical network. This is beyond the scope of NICE Systems as we don't supply or configure the network devices directly, but the steps can easily be completed by the LAPD networking group.

NRX NIC Teaming

The NRX loggers support NIC teaming. Using this feature, the network can be configured to allow dual connections to the recorders through dual network switches eliminating the single point of failure of the network card or data switch.ck switches would be installed in the cabinets with patch panels to make the cross connects between the systems.

If the LAPD would like to utilize this feature, it is necessary to identify this point to NICE during initial project meetings prior to the installation so that the details can be added to the task list for the NICE install team.

The teamed NIC wiring consists of a Cat 6 cable being connected from the 1st NIC (primary) to the designated port on the Primary Patch Panel (front of patch panel and depicted by blue Cat6). The patch panels are through panels and on the back is a corresponding Cat 6 port. From that port (back of primary patch panel), another Cat6 needs to be run to the designated port on the Primary Cisco switch (front of Cisco switch and depicted by the yellow Cat 6. The 2nd NIC (secondary) is connected in a similar manner using the secondary patch panel and secondary Cisco switch (purple and green wires).

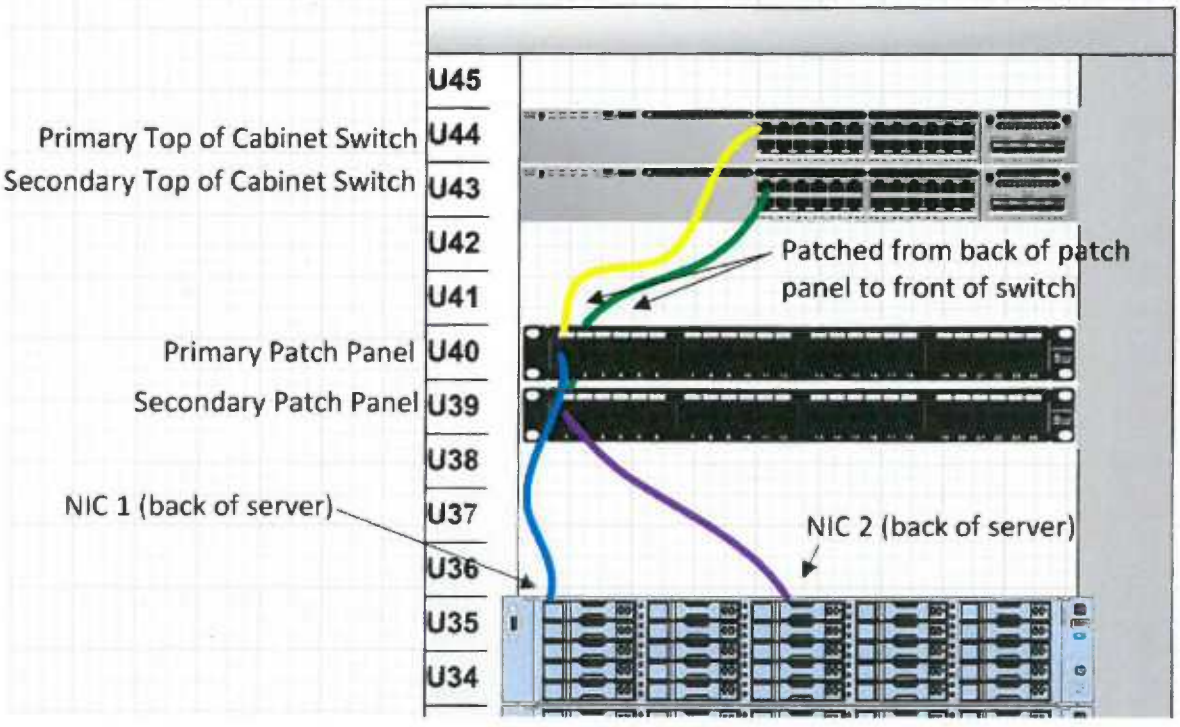


Figure 2-4: Teaming NRX NICs

2.6.3 NRX Server Design Details

Each NRX server has been designed specifically for the needs of LAPD. Using information collected from the site, the NRX server hardware has been designed to meet the long term needs of the LAPD. The table below details the design criteria for each of the NRX loggers at both Metro and Valley. The values were calculated using a call rate of 20 calls per agent per hour with an average 3 minute call length.

It is recommended that a RAID1 configuration is used for the Operating System and NRX application drive. The approximate storage requirement is only 450GB so 1TB drives in the RAID1 configuration would provide the required space with enough additional space to maintain a healthy drive performance specification. RAID1 or RAID5 can be used for the data drives, with the need for approximately 1.2TB of space. Using RAID5, three 6TB drives would offer more than enough storage space to provide in excess of 90 days of internal audio storage on the NRX.

Note: The call rate of 20 calls per agent per hour and length of 3 minutes was selected as it is the maximum possible call rate per hour for the amount of time per call. The time per call is an average of many PSAPs in North America.

Table 2-1: LAPD Site Design Specifications for Each NRX Recorder

Description	Value
Audio Recording Requirements per NRX	
Compression Rate to Disk	GSM 13.2 kbps
Concurrent Channels	96
Average Number of Calls per User per Hour	20
Average Duration of Call	3 Minutes
Business Operations Schedule per Site	
Working Days	7
Operating Hours per Day	24
Retention Requirements per Site	
Days to Keep Call Records in Database on Core	2645 Days (7 years plus 2 months)
Days to Keep Audio Records on Core	90 Days
Days to Keep Audio on Archive Device	2645 Days
NRX Core Server Requirements per NRX	
Approximate Number of Call Records in Database on Core	121,881,600
Suggested Amount of RAM in Core Server	64GB
MySQL Database Size on Core	250GB
Approximate Local Core Audio Storage	1.2TB
Operating System, NRX Software and Page File Size on Core	200GB
Archive and Backup Storage Requirements per NRX	
Archive Storage Contents	35TB per NRX
Calls Recorded per Day	46,080
Recorded Hours per Day	2304
Total Recorded Hours	6,094,080

2.6.4 Audio Archive Server Design Details

Included as part of the overall logger design, a long term network based archive is required. LAPD has advised that the archive period for the logger implementation will be seven (7) years. Using the call data outlined above, NICE has determined that the archive server requires a storage capacity of 35TB to meet the 7 year requirement.

Redundancy of the audio archive requires that two servers be installed at each site. The first will store the local archives for audio. The second will store the backup archives from the second site. Using this system, each site will have local audio and audio from the second 911 center and vice versa.

Table 2-2: LAPD Audio and Data Retention Specifications

Retention Requirements per Site	
Days to Keep Call Records in Database on Core	2645 Days (7 years plus 2 months)
Days to Keep Audio Records on Core	90 Days
Days to Keep Audio on Archive Device	2645 Days

Table 2-3: LAPD Audio and Data Archive Specifications

Archive and Backup Storage Requirements per NRX	
Archive Storage Contents	35TB (NRX) x 3 = 105TB (Site)
Calls Recorded per Day	46,080
Recorded Hours per Day	2304
Total Recorded Hours	6,094,080

Note: The call rate and call times used were based on assumptions and approximations from data obtained at the LAPD centers. It is important to note that depending on actual system usage, the amount of storage required may change either up or down. If more storage is required, it can be added to the network and dynamically added to the NRX archive system at any point in the future.

The diagram below shows the archiving process for both the Metro and Valley sites. The steps that will be configured for the scheduled archiving of audio include:

- Daily schedules to automatically create a local archive of audio from each NRX at Metro.
- Daily schedules to automatically create a local archive of audio from each NRX at Valley.
- Audio from the Primary NRX at Metro will be archived at a pre-set interval to the local Archive Server at Metro.
- Audio from the Primary NRX at Metro will be archived at a pre-set interval to the remote Archive Server at Valley.
- Audio from each backup NRX at Metro will be archived at pre-set internal to the local Archive Server at Metro.
- Audio from each backup NRX at Metro will be archived at pre-set internal to the remote Archive Server at Valley.
- Audio from the Primary NRX at Valley will be archived at a pre-set interval to the local Archive Server at Valley.
- Audio from the Primary NRX at Valley will be archived at a pre-set interval to the remote Archive Server at Metro.
- Audio from each backup NRX at Valley will be archived at pre-set internal to the local Archive Server at Valley.
- Audio from each backup NRX at Valley will be archived at pre-set internal to the remote Archive Server at Metro.

All of these archive processes will take place either on the local LAN or across the existing LAPD WAN.

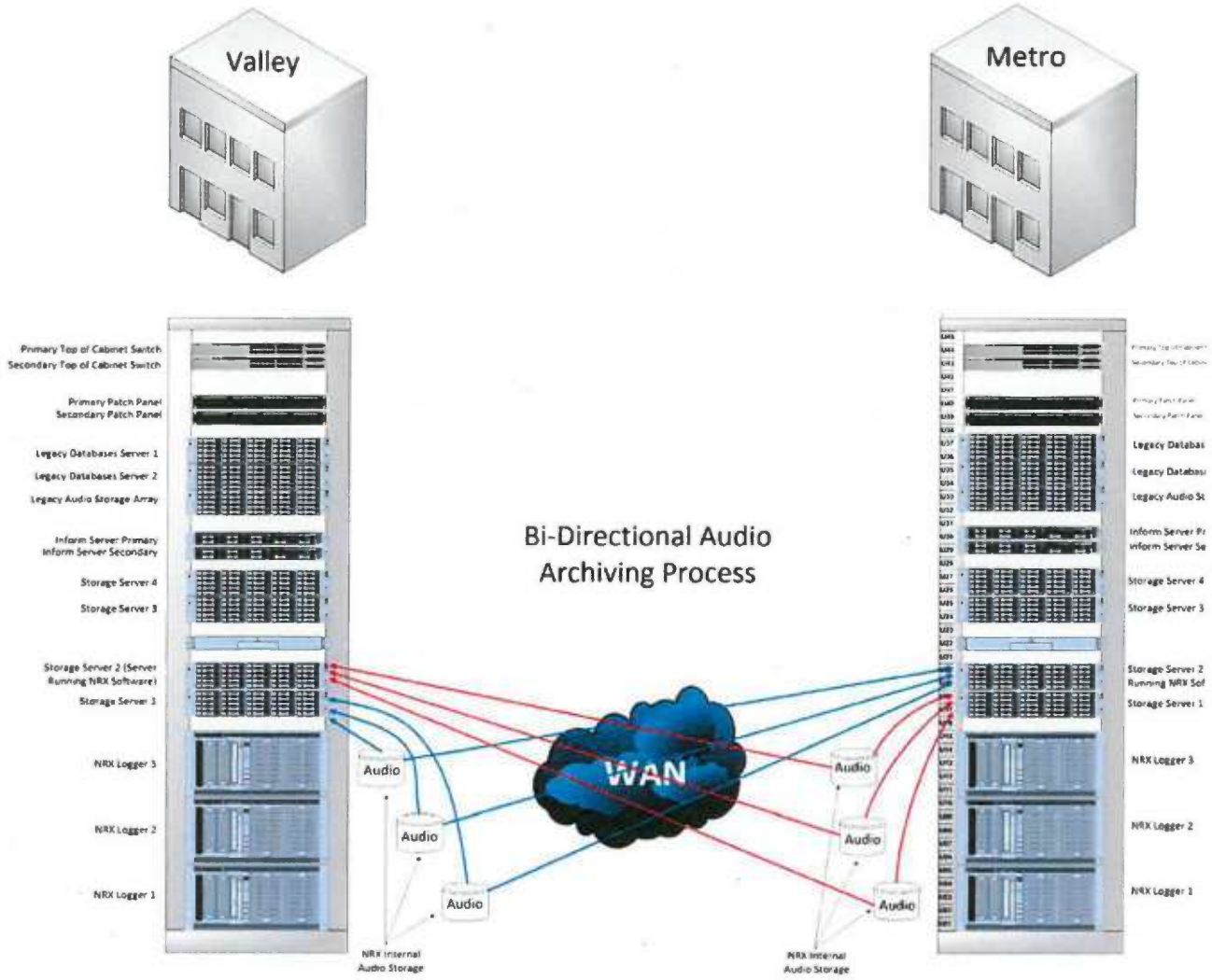


Figure 2-5: Audio Archiving Process

2.6.5 Call Record Database Archiving Details

Call record metadata is initially collected on the hard drive within the Core NRX server for each audio segment.

Simultaneously, the same call record data is inserted in a call record database on a Storage Server across the WAN. This process creates a call record database that is an exact duplicate of the master call record database in real time. This process eliminates the task of creating database backups at one site and copying them across the network to the storage server. It offers high availability of call records in case of a hardware or site failure and significantly reduces the amount of network traffic between the sites.

The call record database created across the WAN is immediately available to Inform and channel names are prefixed with information to clearly identify them as the backup data. This new NRX feature eliminates the risk of trying to create database backups and then restoring them in case they are needed for audio playback in case of a system failure. In essence, a hot standby recorder is running at all times for each site. The LAPD design will have the call record databases from each of the three (3) NRX's at each site duplicated in the remote Storage Server.

The NRX call record database is capable of storing up to ten (10) years of call record data in the standard release of the NRX product. Using the information as outlined in Table 2 earlier in this document, the call record database could grow to approximately 250GB during LAPD's defined seven (7) year retention period.

With three loggers recording in parallel at each site, each recorded call will not only create three audio files, it will also create an entry in three separate call record databases, one per NRX logger. This call record creation takes place as the call is taking place and is completed when the recording is finished.

On a daily basis, an internal NRX application will automatically backup the call record database to the local archive drives in one of the Storage Servers located on the LAN.

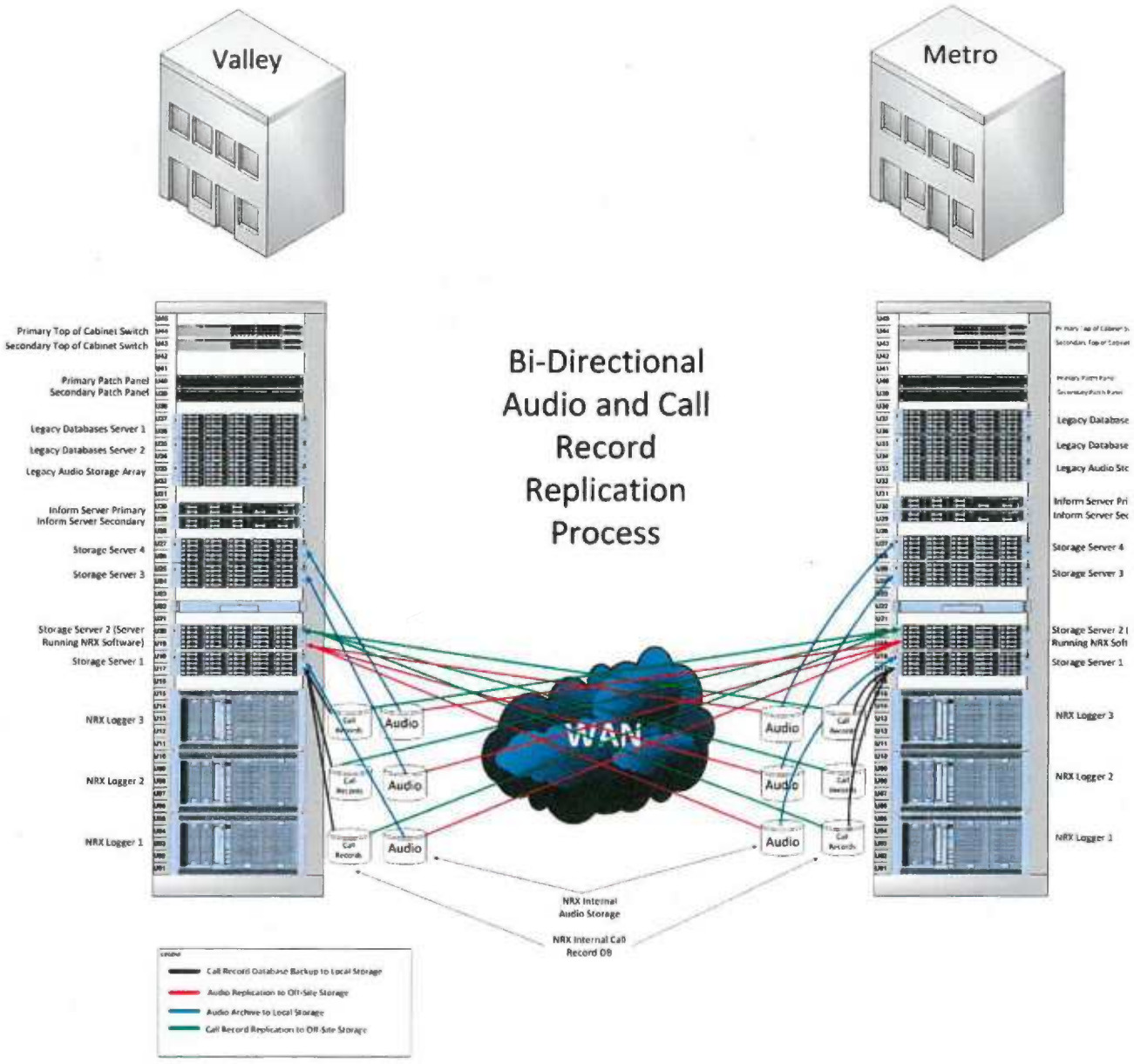


Figure 2-6: Call Record Database Replication Process

2.6.6 Legacy Audio Migration Details

As mentioned earlier, NICE understands that LAPD must have quick and easy access to the Legacy Audio that has been recorded by the NiceLog systems over the last five (5) years or so. In addition, the servers that are currently managing that audio and data must be decommissioned as they are currently running the Windows 2003 Server operating system.

The process NICE has developed for LAPD is extensive with the end result being that the Legacy Audio will be available to search for as easily as any other audio through the Inform user applications. The databases will be taken out of production in the end and searches for old audio will be as simply as entering the time and date for the past audio into the Inform applications.

The current telephony audio recording system at Valley and Metro contains audio and the associated call records data for the past 5 years. There are 10 call records database servers with millions of entries at each location and the audio archive associated to them. The proposed solution includes two (2) dedicated servers for the legacy call record databases and one (1) server for legacy audio itself (see diagram below showing both proposed and legacy infrastructure) at each of the Metro and Valley sites.

Note that each of the new call record database servers will contain 5 of the legacy databases. The legacy audio from the existing audio archive server will be moved to the new audio archive server. This process will move the data and associated audio off of the legacy platform (OS 2003 and SQL 2005) to servers running (OS 2012 and SQL 2012). In addition, the Inform application will be configured to access the 12 new databases (6 at Metro and 6 at Valley) in order to facilitate search and replay of production audio.

Please note the following:

- Each of the call records contains various information (time, date, channel, etc.), including the path name of the associated audio.
- The call record databases are segmented into 1 table per month. NICE will run scripts that process the calls records (server by server, month by month) in an orderly fashion. Once the legacy audio is moved to the new server, the associated call record path details are updated to show the new destination.
- NICE will be able to monitor the progress of the data migration process. In addition, NICE will spot check (before and after) various audio at logical points during the data migration to ensure the process is moving ahead accurately.

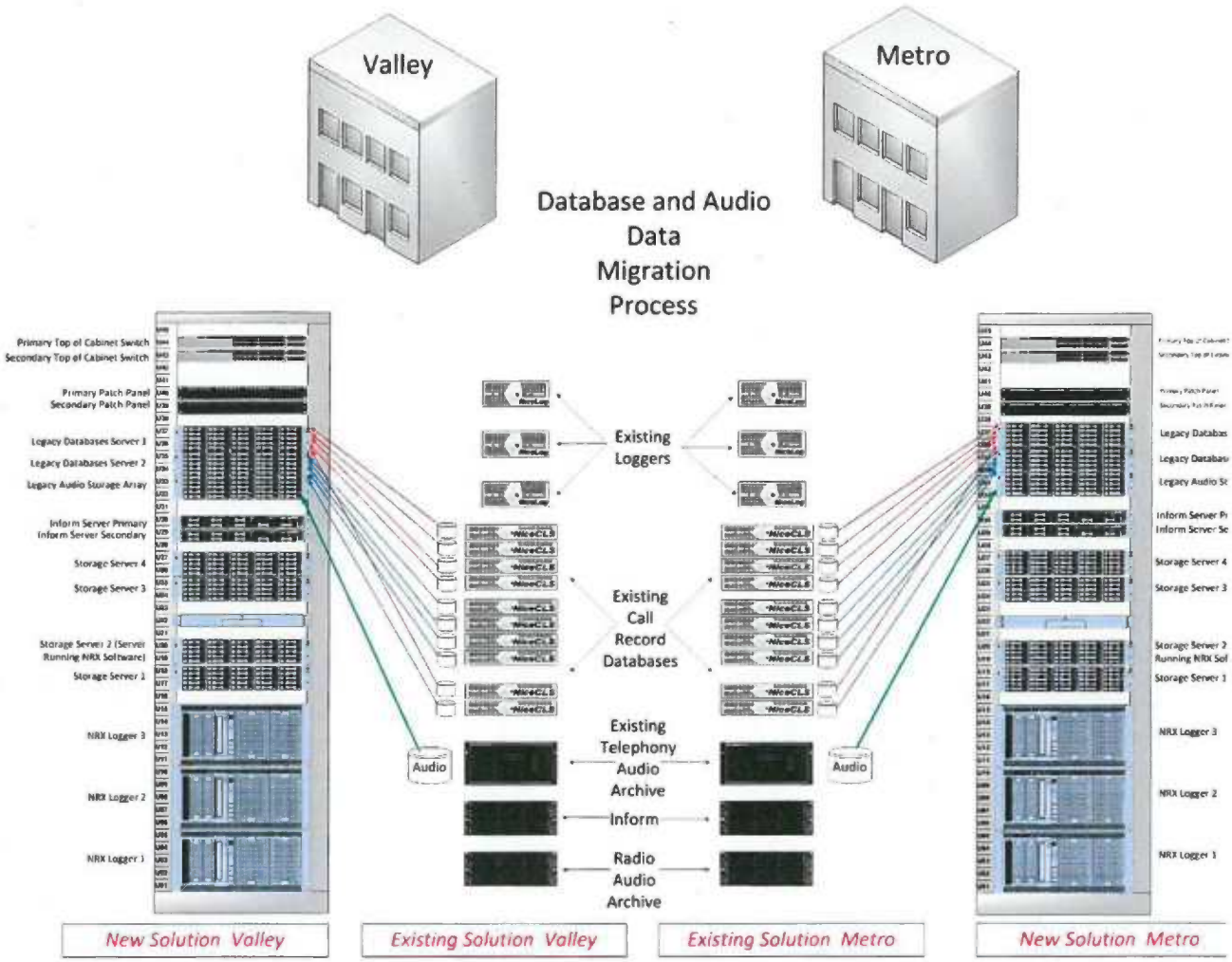


Figure 2-7: Legacy Audio and Data Migration

2.6.7 Physical Installation for Transition

During the initial implementation phase, it will be necessary to consider the following details at Metro and Valley sites:

- Rack space for new loggers to be installed and run in parallel.
- Audio and contact closure wiring in parallel to the current recording system. To accomplish this, all current audio and contact closure wiring will need parallel wiring to be installed and ready to go prior to the implementation of the NRX recording systems as proposed. Consideration should be made to allow an easy disconnect of the old recording platform once the testing phase has been completed. This will require utilizing new wiring blocks added to the existing field wiring;
- Power must be available for current and proposed loggers as outlined in this document;
- Network cabling and data switches / routers must allow for the extra hardware as required.

Please Note: LAPD is responsible for all field wiring to the back of the recorder servers for audio, contact closure and networks. NICE Systems Installation Engineers will be available to discuss wiring questions / options if needed.

2.6.8 Final Combined System

The end result of implementing the new NRX design and completing the legacy audio and data migration is a recording enterprise that will allow the LAPD to search audio recorded back to day one of the NiceLog systems up to and including all new audio on the NRX systems from a single Inform user application.

Once Inform is upgraded, the Motorola IP radio recorders will also become part of the recording enterprise and users will be able to search radio and telephony audio together as they were prior to the radio upgrades taking place earlier this year.

The flexibility of Inform allows old and new NICE platforms to come together as a homogenous recording environment. In the future, as recording needs change again, maybe moving to an IP based 911 system, NICE can provide NRX recording with VoIP capabilities and simply add those to the existing recording infrastructure for use with Inform as well.

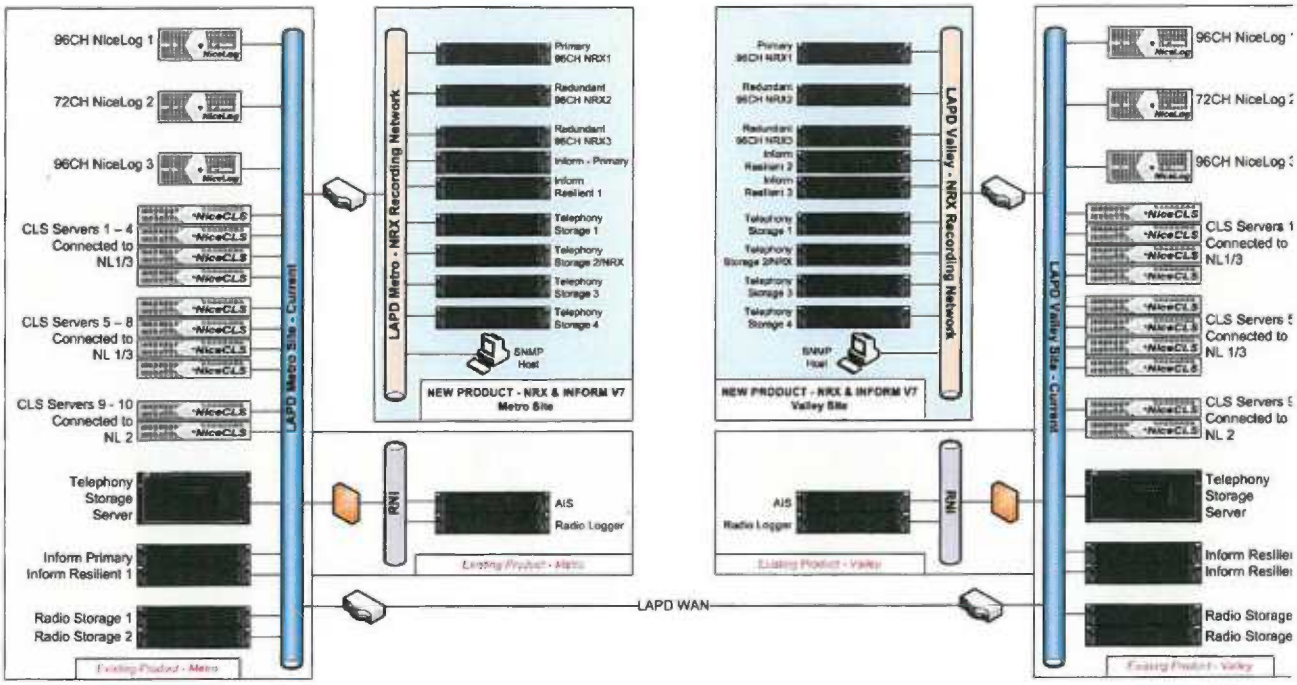


Figure 2-8: LAPD Combined System Overview

2.6.9 Server Count

The Metro and Valley sites will each require 96 channels of analog recording with contact closure, archiving, Inform, Legacy support and SNMP. The servers needed at each site are as shown in the tables below.

Table 2-4: Metro Site Server Descriptions

Metro Site Server Function	Quantity
NICE Recorder (NRX) - HP ML350 G9 Typical	3
Telephony Archive Server - HP DL380 G9 Typical (130TB Storage)	4
Inform Primary Server - HP DL360 G9 Typical (Already Purchased)	-
Inform Resilient Server - HP DL360 G9 Typical (Already Purchased)	-
Legacy Database Host Server - HP DL380 G9 Typical	2
Legacy Audio Host Server - HP DL380 G9 Typical	1
SNMP Host Workstation - HP ML310 Typical	1
TOTAL SERVER COUNT - METRO	11

Table 2-5: Valley Site Server Descriptions

Valley Site Server Function	Quantity
NICE Recorder (NRX) - HP ML350 G9 Typical	3
Telephony Archive Server - HP DL380 G9 Typical (130TB Storage)	4
Inform Resilient Server - HP DL360 G9 Typical (Already Purchased)	-
Legacy Database Host Server - HP DL380 G9 Typical	2
Legacy Audio Host Server - HP DL380 G9 Typical	1
SNMP Host Workstation - HP ML310 Typical	1
TOTAL SERVER COUNT – VALLEY	11

2.6.10 Server Specifications

As this proposal is configured as "Software Only", servers will need to be provided by the LAPD. The tables below contain the specification for each server and workstation roles within the design. These are recommended specifications, and will provide the level of performance required for the defined roles.

NOTE: All servers must be ordered with the HP Hardware and Software Reactive Support package (HP Foundation Care CTR Service). This plan must be purchased (per server) for a period of 5 years.

Table 2-6: Server Specifications

Server Role	Model Number	Server Specifications
NRX Recording Server 3 Required per Site	HP ML350 G9	HP ProLiant ML350 G9 5U Tower Server 8LFF Processor (2) Intel® Xeon® E5-2609 v3 Hexa-core (6 core) 1.9GHz/15MB/85W HP 64GB Network Controller HP Embedded 1Gb Ethernet 4-port 331i Adapter Storage Controller HP Smart Array P440ar/2G Controller Hard Drives (2) HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) OS Hard Drives (3) HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) OS Optical Drive HP 9.5mm SATA DVD ROM Jb Kit 5U Tower with 9 PCIe Slots Power Supply (2) HP 500W Flex Slot Platinum Power Supply iLO Standard Management HP ML350 Gen9 Tower to Rack Conversion Kit HP 320 GB RDX Technology Internal Media Drive Windows 2012 Server Operating System SQL2012
Telephony Audio Archive Server 4 Required per Site	HP DL380 G9	HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2620 v3 Hexa-core (6 Core) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 16GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 -inch) External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System

Server Role	Model Number	Server Specifications
Legacy Database Host Server 2 Required per Site	HP DL380 G9	HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2630v3 FIO Kit (2 x 8 Core Procs) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 64GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 -inch) 54TB RAID5 External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System SQL2012
Legacy Audio Host Server 1 Required per Site		HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2620 v3 Hexa-core (6 Core) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 16GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 -inch) External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System
SNMP Host Workstation 1 Required per Site	HP ML310	Intel® Xeon® E3-1200v3 product family; Intel® Core™ i3; Intel® Pentium® HP 16GB RAM Network controller 1Gb 332i Ethernet Adapter 2 Ports Requires 100GB Free Disk Space Requires Windows 2012, 8, 7, or 2008R2 Operating System

2.6.11 Server Rack Elevation Diagrams

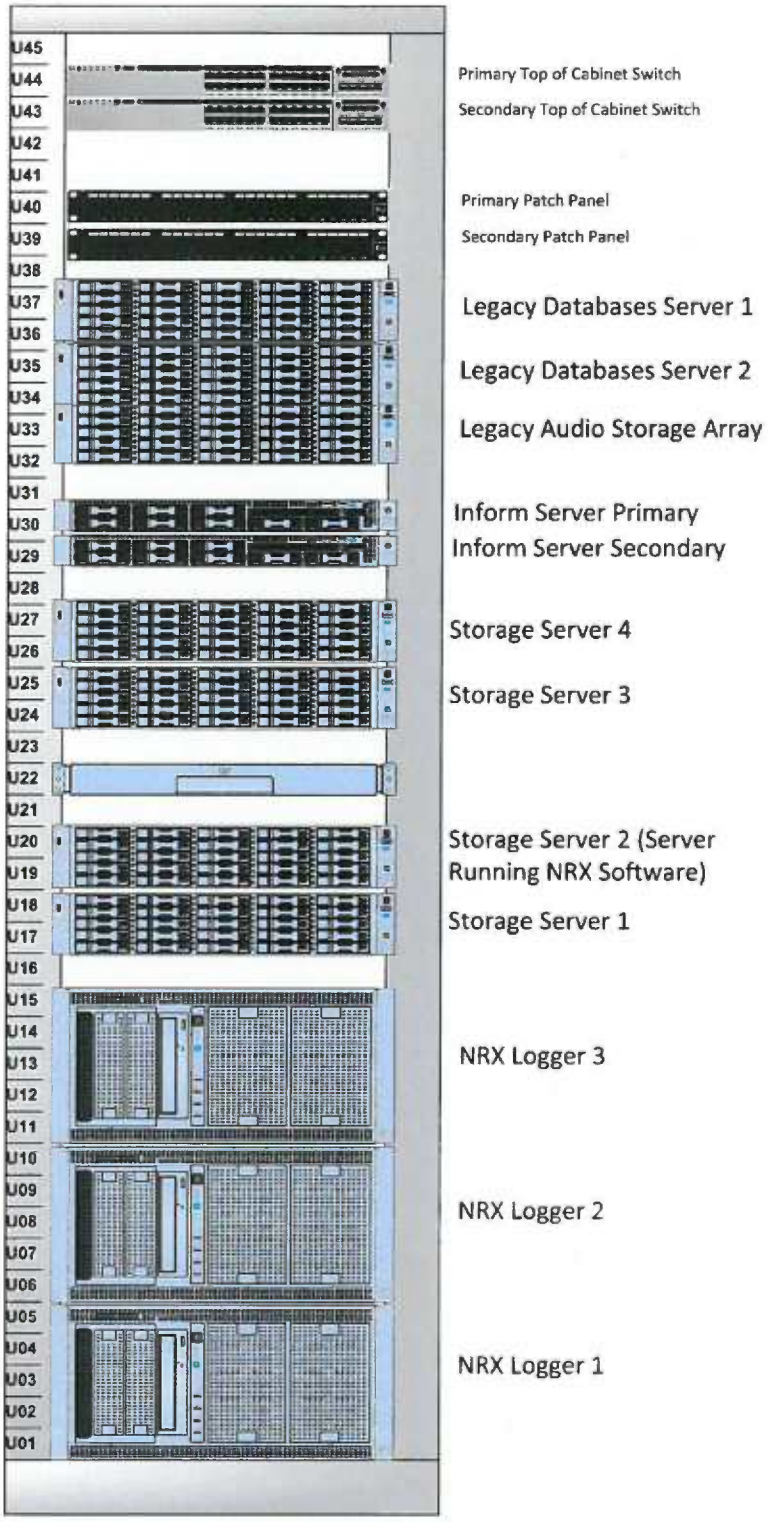


Figure 2-9: *LAPD Metro Rack Elevation*

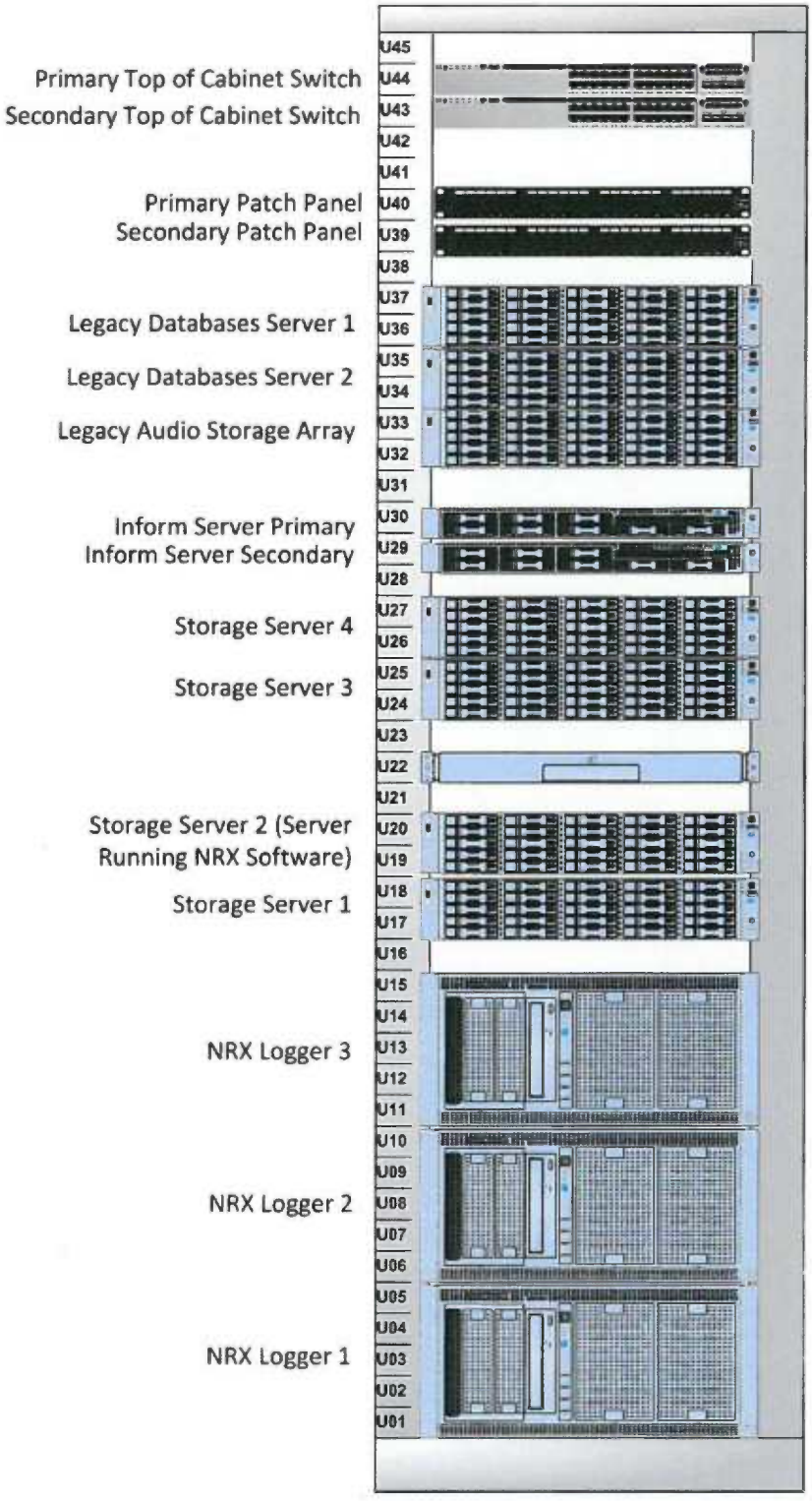


Figure 2-10: ***LAPD Valley Rack Elevation***

2.6.12 Power Requirements

(Metro) - Rackable Equipment List

Item	Component	Weight (lbs)	Height (in)	Width (in)	Depth (in)	Height Units (U)	Watts	kVA	Circuit 208 Draw (Amps)	BTU/hr	Outlets	Static IP Address	CAT6A LAN Ports
1	Cisco 3850 24 port switch	5.00	1.75	19.0	7.0	1.0	350	0.3500	1.68	1194	2	1	0
2	Cisco 3850 24 port switch	5.00	1.75	19.0	7.0	1.0	350	0.3500	1.68	1194	2	1	0
3	Cat 6 Inline Patch Panel	3.00	1.75	19.0	7.0	1.0	0	0.0000	0.00	0	0	0	0
4	Cat 6 Inline Patch Panel	3.00	1.75	19.0	7.0	1.0	0	0.0000	0.00	0	0	0	0
5	CLS Legacy Server 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
6	CLS Legacy Server 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
7	Storage Legacy	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
8	Inform Primary	42.30	1.75	17.1	27.5	1.0	500	0.5000	2.40	1706	2	1	2
9	Inform Secondary	42.30	1.75	17.1	27.5	1.0	500	0.5000	2.40	1706	2	1	2
10	Keyboard, video and mouse 07	17.60	3.50	17.0	25.9	2.0	130	0.1300	0.63	444	3	1	1
11	Production Storage Primary 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
12	Production Storage Secondary 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
13	Production Storage Primary 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
14	Production Storage Secondary 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
15	NRX 3	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
16	NRX 2	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
17	NRX 1	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
		876			29	37	9830		47	33,541	31	15	25

Figure 2-11: LAPD Metro Site Power and Rack Requirements

(Valley) - Rackable Equipment List

Item	Component	Weight (lbs)	Height (in)	Width (in)	Depth (in)	Height Units (U)	Watts	kVA	Circuit 208 Draw (Amps)	BTU/hr	Outlets	Static IP Address	CAT6 LAN Port
1	Cisco 3850 24 port switch	5.00	1.75	19.0	7.0	1.0	350	0.3500	1.68	1194	2	1	0
2	Cisco 3850 24 port switch	5.00	1.75	19.0	7.0	1.0	350	0.3500	1.68	1194	2	1	0
3	Cat 6 Inline Patch Panel	3.00	1.75	19.0	7.0	1.0	0	0.0000	0.00	0	0	0	0
4	Cat 6 Inline Patch Panel	3.00	1.75	19.0	7.0	1.0	0	0.0000	0.00	0	0	0	0
5	CLS Legacy Server 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
6	CLS Legacy Server 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
7	Storage Legacy	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
8	Inform Secondary 1	42.30	1.75	17.1	27.5	1.0	500	0.5000	2.40	1706	2	1	2
9	Inform Secondary 2	42.30	1.75	17.1	27.5	1.0	500	0.5000	2.40	1706	2	1	2
10	Keyboard, video and mouse 07	17.60	3.50	17.0	25.9	2.0	130	0.1300	0.63	444	3	1	1
11	Production Storage Primary 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
12	Production Storage Secondary 1	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
13	Production Storage Primary 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
14	Production Storage Secondary 2	61.00	3.50	17.5	27.5	2.0	800	0.8000	3.85	2730	2	1	2
15	NRX 3	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
16	NRX 2	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
17	NRX 1	110.36	8.75	19.0	28.8	5.0	800	0.8000	3.85	2730	2	1	2
		876			29	37	9830		47	33,541	31	15	25

Figure 2-12: LAPD Valley Site Power and Rack Requirements

LAPD SNMP Workstation - Non-Rackable Equipment List														
									Circuit 110					
Item	Component	Weight (lbs)	Height (in)	Width (in)	Depth (in)	Height Units (U)	Watts	kVA	Draw (Amps)	BTU/hr	Outlets	Static IP Address	CAT6A LAN Ports	Fiber LAN Ports
1	HP Workstation (Metro)	34.20	17.50	6.8	18.3	n/a	800	0.8000	7.27	2730	3	0	2	0
2	HP Workstation (Valley)	34.20	17.50	6.8	18.3	n/a	800	0.8000	7.27	2730	3	0	2	0
		68			18	0	1600		15	5,459	6	0	4	0

Figure 2-13: LAPD Valley & Metro SNMP Host Requirements

2.7 IMPLEMENTATION HIGHLIGHTS

The documentation being provided as part of this proposal includes a detailed Implementation Plan for both sites at LAPD. The following is a highlight of some of the critical pieces that will be part of the installation.

- Provide NICE Systems newest audio recording solution, NICE Recording (NRX) at both the Metro and Valley locations. The NRX software and analog cards with cables are provided to be installed in customer provided servers. Please see the section "NICE Server Hardware Specifications" for details on the hardware to be implemented for each category of the recording enterprise.
  - Metro and Valley sites to have a single Primary 96 channel analog NRX
  - Metro and Valley sites to have two additional 96 channel analog NRXs that are redundant to the Primary, and recording in parallel
  - All channels to be triggered using contact closure
  - LAPD to provide all wiring for audio and contact closure to the demarcation at the rear of the loggers
  - NICE Systems to provide NRX software, Windows O/S and SQL
    - LAPD to provide all server hardware.
    - LAPD to provide wiring, network switches and 4 post cabinets.
- The current Motorola radio logging implementation utilizes a firewall to protect the radio network (RNI) from unauthorized external access. As part of the NRX installation, Motorola is to implement a new LAN segment (CEN0) to which the following NICE components will be added:
  - NICE Inform Servers (2)
  - NICE Storage Center Server for Radio Audio Archiving (2)
  - New NRX Recorder Servers (3)
  - Telephony Archiving Servers (4)
  - Legacy Database Host Servers (2)
  - Legacy Audio Host Server (1)
  - SNMP Host Workstation (1)

Motorola is to provide the programming and configuration of the Firewall and border routers to allow communication between the RNI and the NICE devices on the CEN as required for audio archiving, searches and playback. This is required at both the Metro and Valley sites.

The CEN is to be firewalled from the rest of the LAPD network infrastructure by LAPD. The supply and configuration of any firewalls and routers for the CEN is the responsibility of the LAPD. Use of the Inform system will require routing from outside the CEN to the Inform servers on the CEN. This is required at both the Metro and Valley sites.

- Inform V3.x to Inform V7.x upgrade

Current Configuration and High Level Inform Upgrade Plan: The current configuration is a hybrid solution consisting of Inform V5.x in the RNI (dedicated to IP radio audio search and replay) and Inform 3.x on the CEN (dedicated to telephony audio search and replay). The new system includes 4 new Inform servers running version 7.x. One of these servers will be designated the master Inform server and the others will be standby. It should be noted that the users will be directed to site specific Inform servers (including standby servers) to maximize throughput and reduce cross wan traffic. Upon installation of the new Inform servers, NICE will configure the Inform database with the newly installed channels (NRX loggers), the channels associated with the Legacy loggers (NiceLog) and the MCC 7500 loggers. This will allow LAPD (once clients are migrated to Inform V7.x) to gain access to every channel in the recording complex from a workstation. Note: Firewall/Switch/Router configurations will need to be in place to facilitate access to the IP Radio Logger (MCC 7500 recording server contains call record databases necessary for search and replay). See high level diagram of current LAPD Inform configuration.

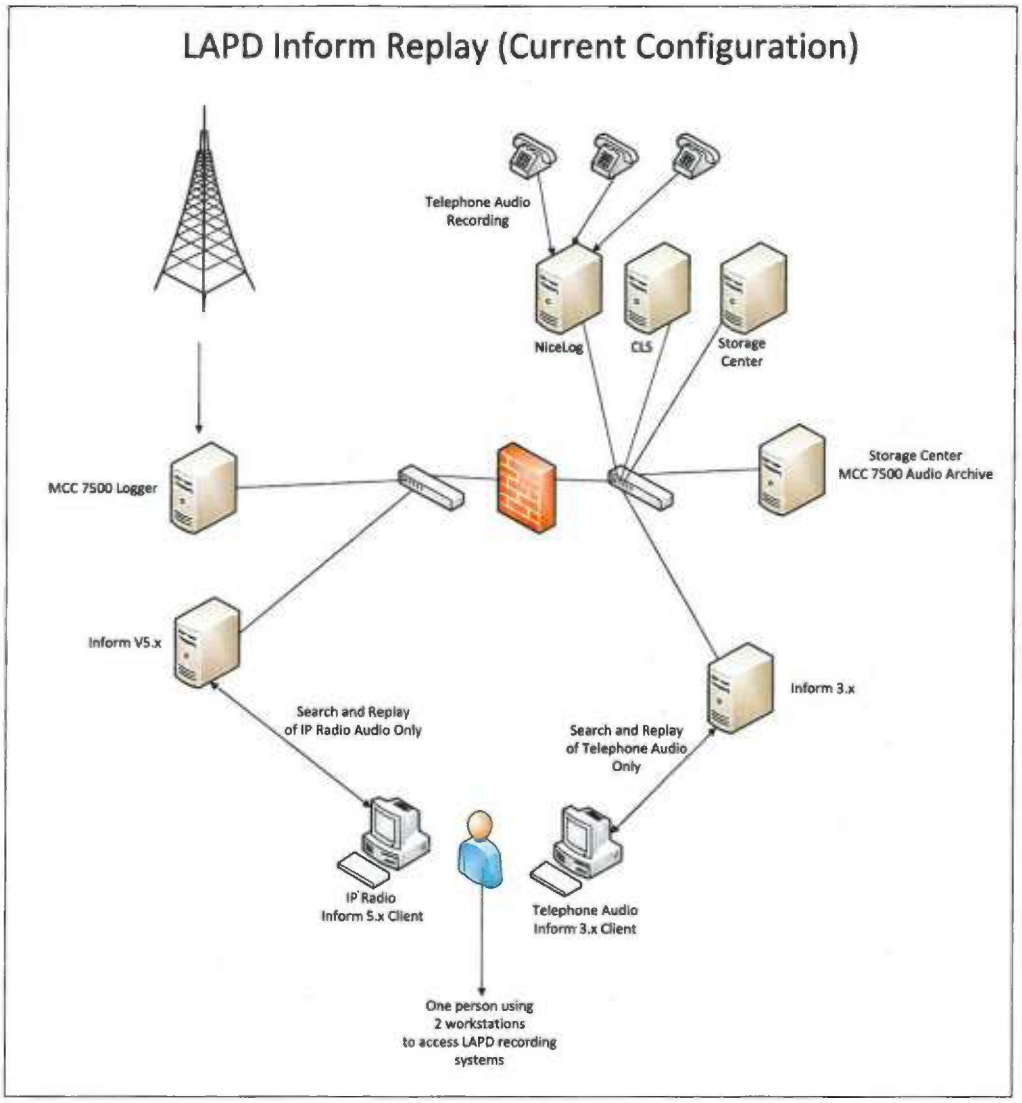


Figure 2-14: LAPD Inform Replay (Current Configuration)

Transition to Inform V7.x: The various workstations (both IP radio and telephony) will be upgraded to V7.x in coordination with LAPD operations as to minimize any operational impact. The search and replay workstations currently being used to replay IP radio will need to be connected to the CEN if LAPD wants to use them to replay both IP and telephony audio. Once complete all workstations will log on to one of the 4 new Inform servers running V7.x and be able to access the new recording channels, the IP recording channels and the current telephony recording channels. This configuration will facilitate access to the current system (via the current storage servers and databases) until the data (audio and call records) are migrated to the new solution. See diagrams showing Inform Search/Replay during transition and after data migration.

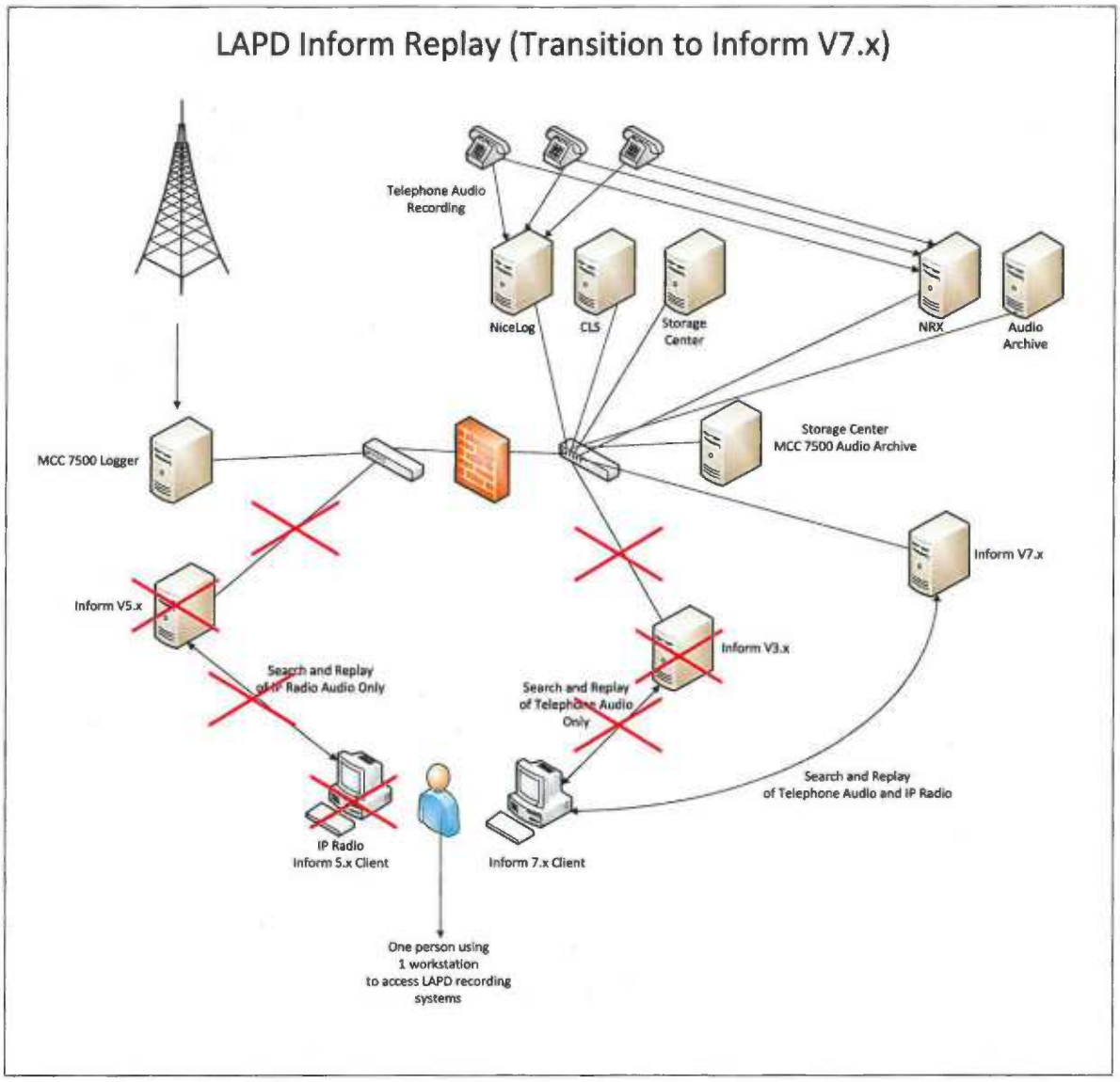


Figure 2-15: ***LAPD Replay – Transition for Inform V7.x***

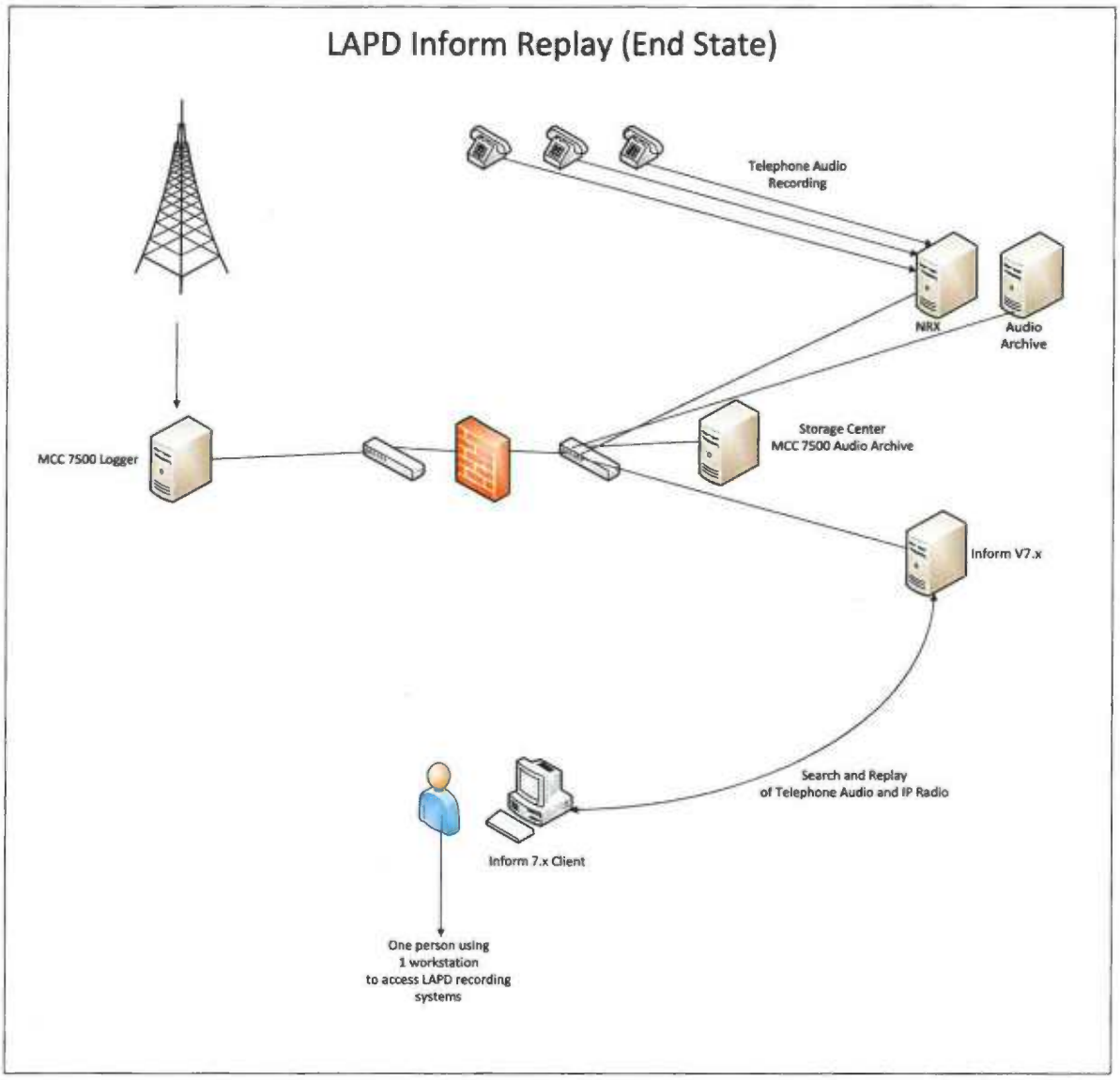


Figure 2-16: LAPD Inform Search and Replay End State

- The Inform upgrade process will result in the following licenses being available to LAPD for use with the application:
  - Inform Master Server = 1
  - Inform Resilient Servers = 3
  - Inform Primary Voice Channels = 420
  - Inform Resilient Voice Channels = 420
  - Inform Reconstruction = 50
  - Inform Organizer = 20
  - Inform Monitor = 20
  - Inform Verify = 35
  - Inform Media Player = 1
- The purchase of the proposed NRX recorders will automatically include the additional Inform voice licenses as needed for the additional recorders.

- Add Inform Reporter R7.0 to the solution to allow for the reporting of basic system statistics. See last section for details.
- Add NICE User Registration Application Licenses to Inform. Each call taker/dispatch position workstation will have a small application loaded, along with the Inform server. The application will add the user's Windows login name to each call record on the recording channel assigned to the workstation. The user login name is then available to Inform users when searching for audio in the archive.
- Four (4) new redundant archive servers will be deployed at the Metro site and the Valley site. Audio from all three NRX recorders at Metro will archive audio to one archive server at Metro and one at Valley. Audio from all three NRX recorders at Valley will archive audio to one archive server at Valley and one at Metro. This will provide both local and geographic redundancy of the audio archive for both the Metro and Valley locations.
  - NICE Systems will provide Windows 2012 Server Operating System
    - LAPD to provide server hardware
- Incorporate the NiceLog (now referred to as the "Legacy" recording system) recording storage solution into Inform R7.0 so that LAPD users can seamlessly and simultaneously search audio archives from both the new NRX recording solution and the Legacy recording system archives.
  - NICE Systems will provide Windows 2012 Server 64-bit Operating System CPU licenses for the archive servers (audio files and SQL DB)
    - LAPD to provide the server hardware
  - NICE Systems will provide SQL2012R2 CPU licenses
- Remove two (2) Domain Controllers. The new servers will all be set up with a local Windows Workgroup instead of joining a domain. This eliminates the cost of the Domain Controller servers and the administration required. Any user workstation that has a network route to the Inform server on the CENs will allow an authorized user to connect to and log into the NICE Inform application.
- Decommissioning and Legacy Hardware. NICE will remove all legacy servers (to include NiceLogs, CLS servers, Inform Servers, Storage Center Servers, Domain Controllers, Storage Arrays) no longer is use. This activity is planned several months after the new system and the Inform 7.x upgrade are in full production. LAPD will provide NICE with an area to place these servers. It should be noted that NICE will only decommission the ***servers*** associated with the legacy recording systems and will not remove wiring, cabling, IT equipment (i.e. network switches, patch panels, etc.,), cabinets or associated infrastructure (grounding bars, KVM, PDU's, etc.).
- Motorola is to create a CEN0 at the Metro and Valley sites connected to the local RNIs through a firewall. The Inform servers, Storage Center server (radio audio), NRX Servers, archive servers (telephony audio) and SNMP workstation will then be installed on the CEN0 at each site.
  - Motorola and LAPD are responsible for all networking hardware and configurations
- Fault Monitoring – Castle Rock SNMP (2) to be installed at Metro and Valley sites to monitor events on the NICE hardware and software installed on the CEN. No monitoring is done on the RNI as this is accomplished with Motorola's UEM product. The SNMP workstations are to be located within an operational area of the LAPD
    - LAPD to provide the SNMP host workstation hardware
- On-site Inform R7 user training with a focus on Inform Organizer to allow the expansion of this module for better utilization of the application.
  - Two (2) sessions of two (2) days each

2.8 PROFESSIONAL SERVICES OVERVIEW

NICE Systems has installed solutions at over 1,000 Public Safety and Emergency Services Organizations in the US, including 9 of the 10 largest cities. Our Project Managers, Installers and Trainers are dedicated to implementing Public Safety Recording solutions. The experience and dedication that NICE Systems brings to every project cannot be matched by any other recording system supplier in the industry.

The NICE Systems Project Manager will be both remote and present on-site during the LAPD project as the NICE PM assists the Motorola PM and LAPD PM prepare for the implementation. The NICE PM will then be on-site at all important/critical junctures of the project.

NICE Systems will also provide on-site user training utilizing a NICE Systems Professional Trainer (Public Safety Division). Two sessions of two days each are provided. Up to 6 participants can be accommodated in each two-day session. The training will provide instruction on all Inform modules that LAPD uses, including the new Reporter module.

A full description of the implementation can be found in the LAPD Implementation Plan document attached. A project timeline will be finalized by the NICE Project Manager, working in conjunction with the Motorola Solutions PM and LAPD PM. The basics of the timeline are in place now as seen in Section 8 of this document based on major milestones that have already been identified by the team.

2.9 TEAM MEMBERS

The successful implementation of this project relies on a team of people from NICE, Motorola and LAPD working together to meet the goals of the project. Each member of the team has a number of responsibilities that will contribute to the overall success of the project.

The following are the NICE team members that will be involved to ensure a successful design and implementation of the project.

2.9.1 Sales Manager

- Main point of contact during the initial sales process to ensure all site details are collected to permit the development of a complete and accurate proposal to LAPD.
- Continued point of contact for all customer relationship and product introductions.

2.9.2 Solutions Engineer

- Responsible for collecting site data to allow for the creation of pricing proposals
- Create Solution Overview Document.
- Liaison with Solution Architect to assist with Creation of Implementation Plan.

2.9.3 Project Manager

Manage all phases of services, including:

- Create and Manage Project Plan (schedule).
- Manage NICE resources dedicated to all Phases.
- Main point of contact for LAPD, Motorola and other LAPD vendors.
- Provide regular status updates to LAPD and Motorola.

- Represent NICE in meetings as required.
- Responsible for all aspects of solution (Site Specific) documentation.
- Work with Implementation Engineer and Solution Architect to ensure documentation is accurate.

2.9.4 Implementation Engineer

Responsible for the technical aspects of the NICE solution deployment, including:

- Component assembly and cabling.
- Software installation (OS, SQL, Server Specific Applications, etc.).
- System configuration.
- System testing.
- System monitoring.

2.9.5 Advanced Systems Group DBA – Solution Architect

Responsible for the conversion of the legacy database from the current 8.9 system to a format compatible with Inform V7 and Windows SQL2012 running on a Windows 2012 operating system based server, including:

- Move current audio archive to new Windows 2012 based host server.
- Backup of databases from current Windows 2003 based CLS servers.
- Restore databases to new Windows 2012 based host servers.
- Modification of file pointers in database to new paths on archive server.

2.10 LAPD WAN BANDWIDTH ANALYSIS

The L&R solution is designed to guard audio recordings and associated metadata against both localized and geographic disaster. To guard against a localized failure (i.e. catastrophic server failure), the system is configured in a tertiary manner with three loggers and three call record databases. In addition to the tertiary recording architecture, the loggers and associated servers have significant built in buffering to withstand lengthy WAN and/or archive outages. In order to guard against a more significant geographic disaster, the audio and associated metadata is replicated to offsite storage and dedicated call record database targets. The sections below describe the anticipated data. Also addressed is the necessary bandwidth to support the recording complex.

Network Bandwidth Analysis Calculations - LAPD

The LAPD recording complex consists of 2 physical locations (Valley and Metro). Each of these locations contain dedicated recording infrastructure (servers, storage, loggers, IT equipment and ancillary equipment). The majority of projected WAN bandwidth to support the LAPD recording complex is consumed by a combination of audio and call record replication. WAN bandwidth is also consumed, to a lesser degree, by search and replay (Inform™ Reconstruction) and incident management (Inform™ Organizer), Inform database replication, SNMP and administrative functions. In order to properly calculate required bandwidth between Valley and Metro, NICE first estimated the inbound audio traffic generated by LAPD. Aggregate calculations were then used to make bandwidth recommendations.

Basic Assumptions

- Tertiary Recording (3 loggers).
- 96 Channels Per Logger.

- GSM Compression (13.2 Kbit/sec).
- Number of calls per hour per channel max = 20.
- Average Call Duration = 3 minutes.

The following bandwidth calculations are based on a 35% duty cycle.

- 20 calls per hour * 24 hours *.35 = 168 calls per day per channel.
- 96 channels * 168 = 16128 per site.

Call Record Replication

Each of the LAPD loggers at Valley and Metro creates a call record for each recording which is stored in an internal database within the logger. The Call Record process is as follows:

- NRX logger: Each NRX contains a MySQL call record database. Once the call is complete, a call record is inserted into the local database. A secondary process inserts a copy of the call record into a call record database (dedicated server) located at the alternate site.

Table 2-7: LAPD Call Record Replication Traffic

Site	Recordings Per Day (Primary)	WAN Traffic (Bytes) (Per Day Primary + Secondary + Tertiary)
Valley	16,128	290,304,000
Metro	16,128	290,304,000
Totals:	**32,256**	**580,608,000**

LAPD Audio WAN Traffic

The LAPD recording complex consists of 3 NRX loggers per location (Valley and Metro). The audio is stored on the NRX and a subsequent process copies the audio to local long term storage. In addition to the local archive the audio is also replicated to a designated target at the alternate site (Valley to Metro and Metro to Valley). The aggregate audio traffic from Valley to Metro and Metro to Valley is 18.68 GB per day/per site. The table below lists the anticipated aggregate data traffic associated with cross site (WAN) audio replication.

Table 2-8: LAPD Audio Replication WAN Traffic

Site	Recordings Per Day (Primary)	Average Duration in seconds	Usage Minutes (per day)	Data GB (per day) 99,000 bytes/min NRX	Total Daily Volume (GB)
Valley	16128	180	48384	4.79	6.23
Metro	16128	180	48384	4.79	6.23
Aggregate Total: (3 loggers per site):					**37.38**

Bandwidth Requirements

The table below highlights the salient bandwidth analysis data to support bandwidth recommendations. The recommended bandwidth is based on the following:

- Aggregate data traffic (audio and call record) between Valley and Metro.
- WAN Overhead: Based on industry experience, the baseline bandwidth calculations are derived using a value of 45% overhead.

- Catch-Up Ratio: 7:1 catch up ratio. Example: If a site experienced a WAN outage of 7 hours, the audio and call record replication process would be current within one hour once the WAN was brought back online.

Recommendations: Based on the projected ingest and replication rates, NICE recommends a dedicated 45 megabit/sec WAN link between Valley and Metro.

Table 2-9: LAPD Bandwidth Requirements

Data Source	Data Destination	Data Type	Daily Aggregate (GB per day)
Valley	Metro	Call Record Replication	.29
Metro	Valley	Call Record Replication	.29
Valley	Metro	Audio Replication	18.68
Metro	Valley	Audio Replication	18.68
Totals:			**37.94**
Recommended Aggregate Bandwidth of 45 megabit/second			
		Aggregate Bandwidth (megabit/sec)	45000000
		Bytes Per Day (no overhead)	486000000000
		Bytes Per Day (45% overhead)	267300000000
		Utilization at 130.07GB per day	14.29%
		Catch Up Ratio	7.04
Based on a 7:1 catch up rate.			
Based on 45% overhead on WAN link.			

2.11 LAPD MCC 7500 RECORDING SOLUTION (HIGH LEVEL DESCRIPTION)

The Archive Interface Server is the Motorola system component used to connect the NICE IP VoIP Logger to the MCC 7500 Digital Radio System. The AIS is configured to pass selected IP voice traffic and call state information to the NICE MCC 7500 Logger. Each site (Valley and Metro) is equipped with one AIS server, and one MCC 7500 Logger. The LAPD radio system is configured to duplicate all radio traffic to and from Valley and Metro. This parallel recording configuration protects the data (call record and audio) against localized (component) failures. Figure 2-17.shows a high-level conceptual diagram of the LAPD MCC 7500 recording solution.

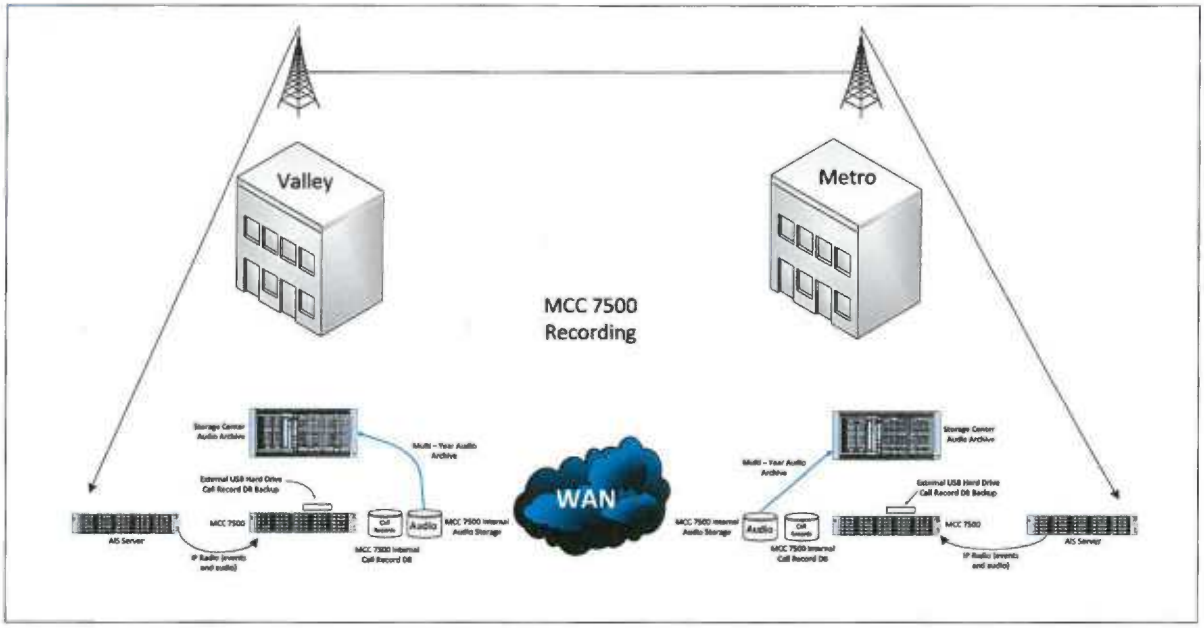


Figure 2-17: MCC 7500 Recording

2.12 IMPLEMENTATION OVERVIEW AND TIMELINE

Please see the document titled "LAPD Implementation Plan" for details on the actual installation at the Metro and Valley sites. It provides a comprehensive plan for the installation and commissioning of the voice logging system as described in this document.

The projected timeline (see table) is based on a Notice to Proceed (order received by NICE) date of Nov 20, 2015. Note the following:

- The 2015, 2016 schedule takes the Contractor's Holiday schedule into consideration; New Year's Day, Civil Rights Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving (2 days) and Christmas Day.

Table 2-10: Project Timeline

Phase Description	Duration (Business Days)	Projected Dates
Procurement – NICE Equipment Shipped to Site	35	11/20/2015 – 1/13/2015
LAPD Servers and IT equipment delivered to site (Valley and Metro)	NA	1/13/2016
Deployment Preparation (Site Readiness, Hardware Inventory and Validation)	5	1/14/2016 – 1/21/2016
Site Readiness Remediation (if necessary)	10	1/22/2016 – 2/4/2016
Solution Deployment	25	2/5/2016 – 3/11/2016
Installation Testing (Dry Run and Formal Test)	5	3/14/2016 – 3/18/2016
End User Training (Metro)	2	3/7/2016 – 3/8/2016
End User Training (Valley)	2	3/9/2016 – 3/10/2016
Month (30 calendar days) in between end of installation and data migration.	21	3/21/2016 – 4/18/2016
Data Migration (Legacy Recording Data)	15	4/19/2016 – 5/9/2016
Post Install Document Generation	15	4/19/2016 – 5/9/2016
Post Installation System Monitoring	25	5/10/2016 – 6/7/2016
Legacy System Decommissioning	5	6/8/2016 – 6/14/2016

LAPD Technology Refresh Timeline

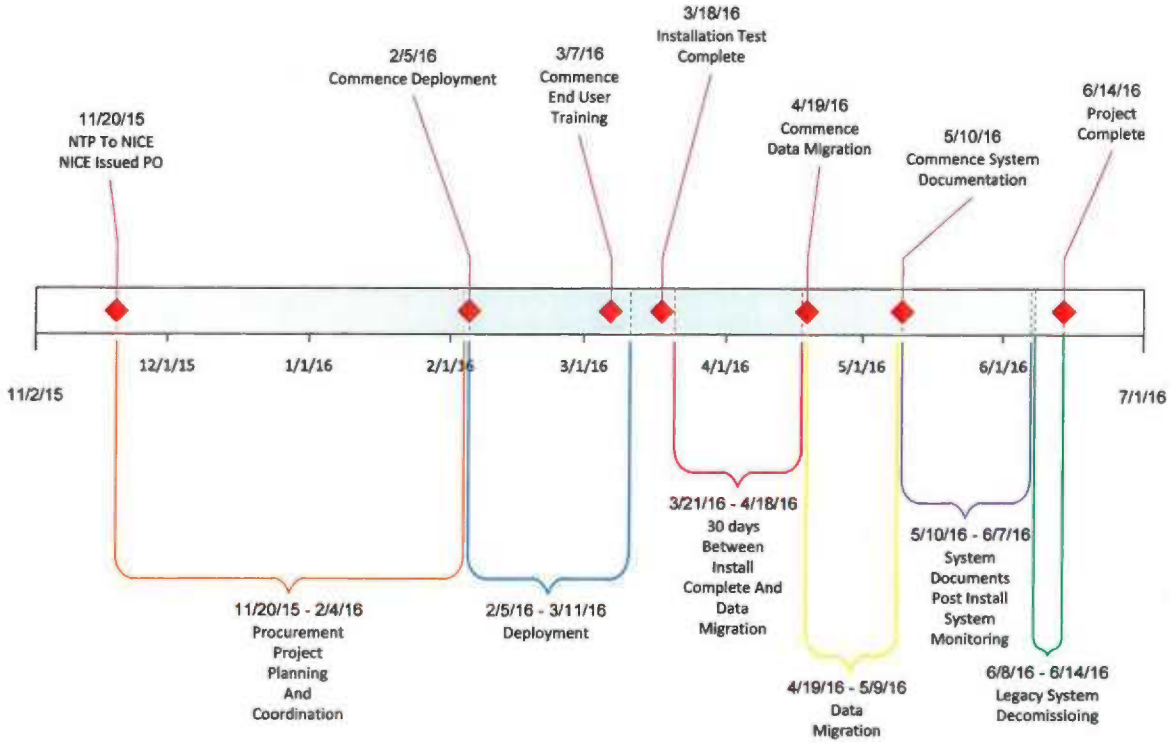


Figure 2-18: LAPD Technology Refresh Timeline

2.13 NICE PRODUCT DESCRIPTION OVERVIEW

2.13.1 The NRX Telephone Logger

The NRX is NICE Systems' current Logging platform and is NICE Systems go-forward platform for all current development plans. NRX is designed specifically with Public Safety and NG9-1-1 in mind. It supports a variety of VoIP interfaces – including SIP trunk logging and D-channel logging for enhanced call records data. Specific integrations to popular VoIP CPE technologies are also available, such as Intrado VIPER, Cisco, Avaya and more. Naturally, the NRX solution also supports traditional analog and digital phone systems.

NRX also supports streamlined configurations that allow for multiple applications, such as: ANI/ALI capture, Text-to-9-1-1 capture in the same server. NRX integrates into larger NICE Inform solutions that can include ASTRO IP Radio Recording.

2.13.2 Inform User Applications R7.0

Inform R7.0 was released by NICE Systems earlier in 2015. It is NICE Systems newest user Interface application. Inform R7 comes with updated support for new Windows Operating Systems and Virtual Server Applications.

Inform R7.0 supports a variety of new Inform modules features that are not available on Inform R3.2. These include:

- Inform Evaluator (Quality Monitoring with on-line evaluation forms).
- Inform Reporter (see below).
- Text-to-911 Capture.
- Mapping PTT transmission locations (interface to Motorola UNS server required).
- Audio Analytics (searching recordings by spoken words and phrases).
- Screen Capture (requires dedicated server).

While all of these features (except Reporter) are outside the scope of this project, it is important for LAPD to be aware of the product roadmap that Inform R7 provides. All of the above applications are modules that can be added to the solution at any time (with additional investment).

2.13.3 Inform Reporter

As mentioned above, the upgrade from Inform R3.2 to R7.0 incorporates all of LAPD's existing user modules. One new module that is being added to LAPD's Inform solution is Reporter. The Reporter module enables users to create and display report charts displaying both call volume and QA evaluation data, based on pre-defined templates (Inform Evaluator Module is required for generating QA evaluation data).

The user can select their most frequently used reports to appear on a Dashboard view within the Reporter application. All reports can also be displayed individually in the application. Reports are generated from data in the Inform Data-warehouse the first time each report is displayed following user login. The reports can also be printed, e-mailed and saved in multiple formats including .csv, enabling the raw data on which they are based to be exported from the system.

Figure 2-19: View of NICE Inform Reporter

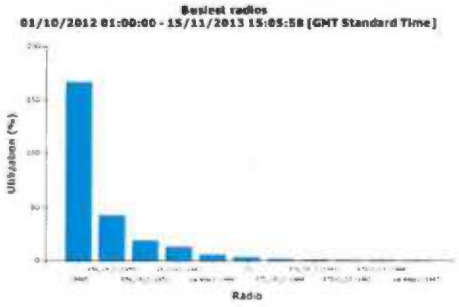
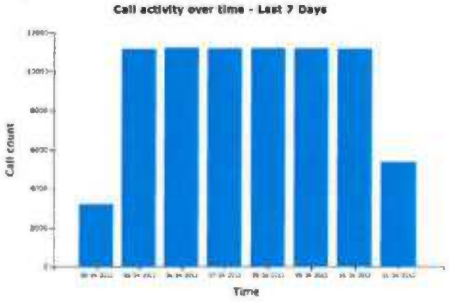
Call volume reports are defined by specifying the template (which determines the chart type) time range and resources to be reported on. Users defining a report can only create reports on the resources and users etc. that have been assigned to them to access.

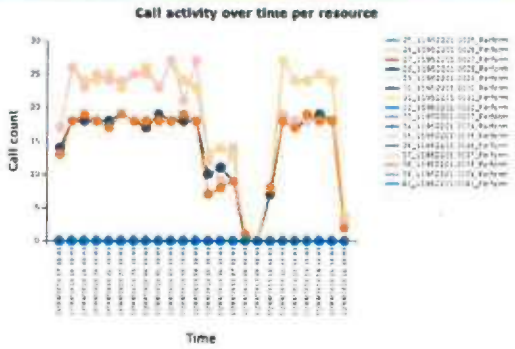
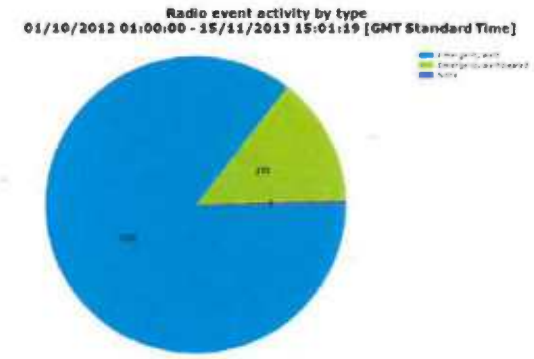
Reports can be private, in which case they are only available to the user that created them, or public, in which case they are available to any user with access to the Reporter application. Users reviewing a public report created by another user will be able to see the full report, even if they do not have access to the resources or users etc. being reported on.

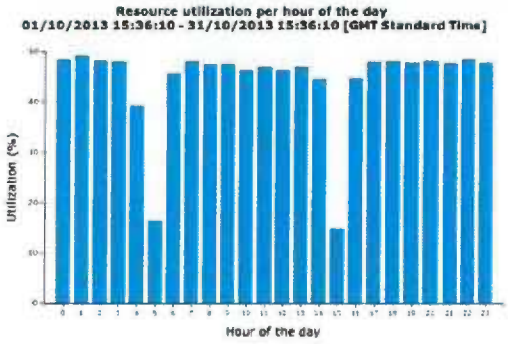
All reports are displayed in reference to a single system-wide reference time zone which must be configured before reports can be generated. This ensures that all clients see the same data when reviewing the same report, even where the workstations they run on are configured to different time zones.

See the next page for an overview of the Call Volume Report Templates that are available.

Table 2-11: Call Volume Templates

Template Name	Description	Example (where available)
Average call duration per resource	The average call duration in seconds over the selected time period is displayed for each selected resource as a column chart.	
Busiest radios	The total transmission duration for the 10 busiest radios across the selected Talk-Group resources are displayed as a column chart.	
Busiest radios over time	The total duration usage for the 10 busiest radios against time across the selected Talk-Group resources are displayed as a line chart.	
Call activity over time	The call count against time, aggregated for all selected resources are displayed as a column chart.	
Call activity per resource	The call count for each selected resource is displayed as a column chart.	
Most rejected radios	The count of rejected recordings for the 10 radios with the most rejections from the selected Talk-Group resources, are displayed as a column chart.	
Radio call duration by type over time	The total call duration in seconds for the selected Talk-Group resources is displayed as a stacked column chart against time, each bar sub-divided by call type.	
Radio call activity by type over time	The total call count for the selected Talk-Group resources is displayed as a stacked column chart against time, each column sub-divided by call type.	

Template Name	Description	Example (where available)
Call activity over time per resource	The call count for each resource against time, displayed as a line chart.	
Radio event activity by type over time	The total event count for the selected Talk-Group resources displayed as a stacked column chart against time, each column sub-divided by event type.	
Call activity per hour of the day	The sum of call counts per hour of the day over the selected time period, displayed as a column chart.	
Radio call activity by type	The call count for each call type across the selected Talk-Group resources, displayed as a pie chart.	
Radio event activity by type	The event count for each event type across the selected Talk-Group resources, displayed as a pie chart.	
Resource utilization	The percentage utilization against resource (column chart)	

Template Name	Description	Example (where available)
Resource utilization per hour of the day	The percentage utilization averaged over all selected resources for each hour of the day over the selected time period, displayed as a column chart.	

2.13.4 CastleRock SNMP Management

The primary mechanism of alarming for the system on the LAPD network is via SNMP alerts. NICE Systems hardware and software components are SNMP compliant (each with a custom MIB file) and provide real-time system monitoring and alerting to the SNMP Manager(s) provided with the system. The benefits of SNMP monitoring and alerting across the system include:

- Industry standard.
- Enables multiple management clients to reside anywhere on the network.
- Relatively simple implementation.
- Relatively simple expandability and configuration.

SNMP alerts are generated for internal and external alarms and warning events, such as:

- Failure of a redundant power supply in a conventional NICE Recorder.
- Disk space low.
- Inform user automatically logged out by system after inactivity time-out.

SNMPc Management Console, a third party application by CastleRock, is provided by NICE as a flexible and powerful tool for monitoring and acting upon SNMP events. A typical screen shot is shown below:

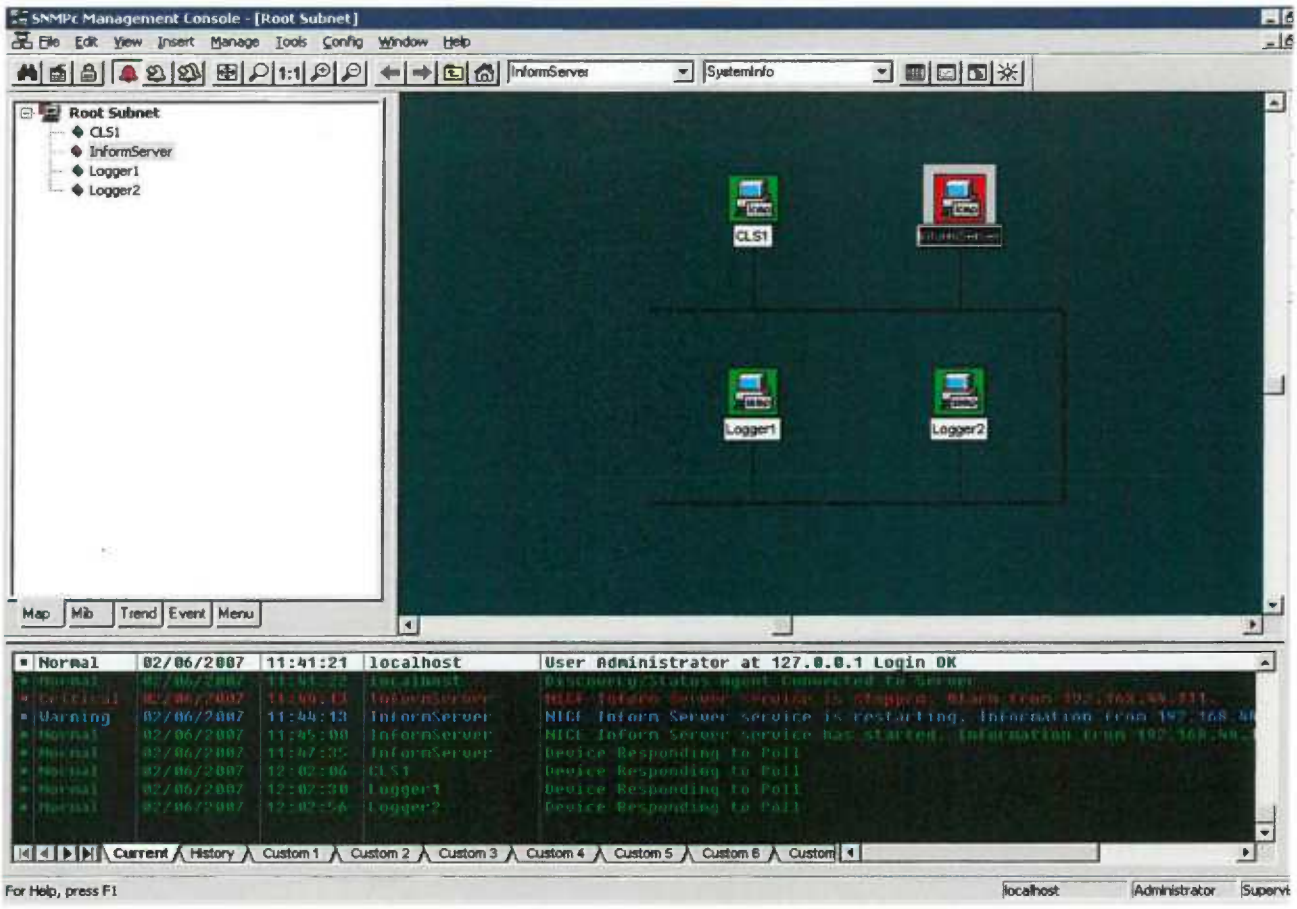


Figure 2-20: SNMPc Management Console

SECTION 3

CUSTOMER-FURNISHED EQUIPMENT AND INFORMATION (CFEI) LIST

3.1 LAPD HARDWARE/SOFTWARE/INFORMATION

20 Servers

NOTE: All servers must be ordered with the HP Hardware and Software Reactive Support package (HP Foundation Care CTR Service). This plan must be purchased (per server) for a period of 5 years. It should be noted that all servers must be ordered with the necessary rail kits to allow for rack mounting.

Server Role	Model Number	Quantity	Server Specifications
NRX Recording Server	HP ML350 G9	6 (3 per site)	HP ProLiant ML350 G9 5U Tower Server 8LFF Processor (2) Intel® Xeon® E5-2609 v3 Hexa-core (6 core) 1.9GHz/15MB/85W HP 64GB Network Controller HP Embedded 1Gb Ethernet 4-port 331i Adapter Storage Controller HP Smart Array P440ar/2G Controller Hard Drives (2) HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) OS Hard Drives (3) HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) OS Optical Drive HP 9.5mm SATA DVD ROM Jb Kit 5U Tower with 9 PCIe Slots Power Supply (2) HP 500W Flex Slot Platinum Power Supply iLO Standard Management HP ML350 Gen9 Tower to Rack Conversion Kit HP 320 GB RDX Technology Internal Media Drive Windows 2012 Server Operating System MySQL Database (Included in NRX License Release. No need to Source externally)

Server Role	Model Number	Quantity	Server Specifications
Telephony Audio Archive Server	HP DL380 G9	8 (4 per site)	HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2620 v3 Hexa-core (6 Core) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 16GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 - inch) External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System
Legacy Database Host Server	HP DL380 G9	4 (2 per site)	HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2630v3 FIO Kit (2 x 8 Core Procs) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 64GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 - inch) 54TB RAID5 External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System SQL2012

Server Role	Model Number	Quantity	Server Specifications
Legacy Audio Host Server		2 (1 per site)	HP ProLiant DL380 G9 2U Rack Server 12LFF Processor (2) Intel Xeon E5-2620 v3 Hexa-core (6 Core) 2.40 GHz - 15 MB Cache - 8 GT/s QPI - 5 GT/s HP 16GB RAM Network Controller HP Embedded 1Gb Ethernet 4 - port 331i Adapter Storage Controller HP Flexible Smart Array P840ar/4GB Hard Drives (12) HP 6TB 6G SAS 7.2K rpm LFF (3.5 - inch) External DVD Writer (3) PCIe Slots Power Supply (2) HP 800W Flex Slot Platinum iLO Standard Management Form Factor Rack 2U HP Easy Install Rails Windows 2012 Server Operating System

Two SNMP Management Workstations

NOTE: Recommended configuration (or equivalent)

Workstation Role	Model Number	Quantity	Server Specifications
SNMP Host Workstation	HP ML310	2 (1 per site)	Intel® Xeon® E3-1200v3 product family; Intel® Core™ i3; Intel® Pentium® HP 16GB RAM Network controller 1Gb 332i Ethernet Adapter 2 Ports Requires 100GB Free Disk Space Requires Windows 2012, 8, 7, or 2008R2 Operating System

Please note the following additional items that the LAPD are responsible for providing. The table splits requirements by site where applicable.

ITEM	QTY	Description	Site
1	1	Rack mount keyboards, monitor, mouse + KVM switch with cabling to accommodate 12 servers per cabinet.	Metro
2	1	Rack mount keyboards, monitor, mouse + KVM switch with cabling to accommodate 12 servers per cabinet.	Valley
3	1	4 Post 42u cabinets with mesh (lockable) front door.	Metro
4	1	4 Post 42u cabinets with mesh (lockable) front door.	Valley
5	2	PDU (per cabinet) to accommodate 12 servers per cabinet. (Note: Due to dual redundant power supplies per server). See power, dimension, BTU, connectivity matrix in 4.4.12 of the Solutions Overview Document (SOD).	Metro

ITEM	QTY	Description	Site
6	2	PDU (per cabinet) to accommodate 12 servers per cabinet. (Note: Due to dual redundant power supplies per server). See power, dimension, BTU, connectivity matrix in 4.4.12 of the SOD.	Valley
7	25	7' Cat 6 Patch Cables (2 per server + KVM)	Metro
8	25	7' Cat 6 Patch Cables (2 per server + KVM)	Valley
9	12	Power Cords (2 per server)	Metro
10	12	Power Cords (2 per server)	Valley
11	2	Network Switches Recommend - Cisco Catalyst 3850 24 port Ethernet switch with redundant power supplies and 4 copper (Cat 6) uplinks per switch.	Metro
12	2	Network Switches Recommend - Cisco Catalyst 3850 24 port Ethernet switch with redundant power supplies and 4 copper (Cat 6) uplinks per switch.	Valley
13	-	Define destination ports (LAPD core switches) for uplinks from top of rack switches	Metro
14	-	Define destination ports (LAPD core switches) for uplinks from top of rack switches	Valley
15	2	Network Patch Panel. Recommend (or equivalent) Blackbox Cat6A Shielded 24 port through patch panel.	Metro
16	2	Network Patch Panel. Recommend (or equivalent) Blackbox Cat6A Shielded 24 port through patch panel.	Valley
17	-	Firewall ports opened in LAN/WAN to facilitate server/workstation communication.	Metro
18	-	Firewall ports opened in LAN/WAN to facilitate server/workstation communication.	Valley
19	-	To provide Cat 6 cabling from wall jack to each of the dedicated SNMP Workstations.	Metro
20	-	To provide Cat 6 cabling from wall jack to each of the dedicated SNMP Workstations.	Valley
21	-	Supply the assigned physical location of the designated workstations. Note: Ensure that each position has adequate AC and Network connectivity.	Metro
22	-	Supply the assigned physical location of the designated workstations. Note: Ensure that each position has adequate AC and Network connectivity.	Valley
23	-	A secure storage location must be provided for on-site spares (one spares kit at Metro and one at Valley).	Metro
24	-	A secure storage location must be provided for on-site spares.	Valley
25	13	Provide 26 Static IP addresses (one for each server + 2 workstations).	Metro
26	13	Provide 26 Static IP addresses (one for each server + 2 workstations).	Valley
27	-	VLAN configuration is the responsibility of LAPD.	Metro

ITEM	QTY	Description	Site
28	-	VLAN configuration is the responsibility of LAPD.	Valley
29	-	LAPD to configure work groups/active directory infrastructure to allow authentication of 24 servers and 2 workstations.	Both
30	-	Once the NICE solution is delivered to the designated LAPD locations, LAPD is responsible for physical security.	Metro
31	-	Once the NICE solution is delivered to the designated LAPD locations, LAPD is responsible for physical security.	Valley
32	-	LAPD will provide a secure area for the storage of NICE Systems materials. Note: Spares to support the solution must be stored in a secure location.	Metro
33	-	LAPD will provide a secure area for the storage of NICE Systems materials. Note: Spares to support the solution must be stored in a secure location.	Valley
34	-	LAPD to provide audio channel names for upcoming installation.	Metro
35	-	LAPD to provide audio channel names for upcoming installation.	Valley
36	-	Provide list of personnel to attend end user training.	-
37	-	Identify facilities to accommodate the anticipated quantity of attendees. Room to be equipped with dedicated workstations (one for each attendee and instructor) with access to the NICE Solution. Room shall be equipped with a projector.	-
38	-	VPN access from NICE engineering to NICE solution at LAPD to support data migration process.	-

3.2 MOTOROLA HARDWARE/SOFTWARE/INFORMATION

ITEM	QTY	Description	Site
1	1	4 post cabinet installation. To include power, cabinet grounding, etc. Must meet California requirements for earthquake protection. Note: This includes any work necessary to disassemble legacy 2 post racks, blocks fields, etc., to make room for new 4 post cabinet.	Metro
2	1	4 post cabinet installation. To include power, cabinet grounding, etc. Must meet California requirements for earthquake protection. Note: This includes any work necessary to disassemble legacy 2 post racks, blocks fields, etc., to make room for new 4 post cabinet.	Valley
3	-	Server grounding as required. Supply rack mount ground bar and necessary wiring to connect server ground to ground lugs on rack mount ground bar.	Metro
4	-	Server grounding as required. Supply rack mount ground bar and necessary wiring to connect server ground to ground lugs on rack mount ground bar.	Valley
5	-	All relevant cables (i.e. amphenol for audio, contact closure, etc.) will be run by others and coiled in the existing ladder rack (or under the floor) with the appropriate slack, terminations/connectors and labeling.	Metro

ITEM	QTY	Description	Site
6	-	All relevant cables (i.e. amphenol for audio, contact closure, etc.) will be run by others and coiled in the existing ladder rack (or under the floor) with the appropriate slack, terminations/connectors and labeling.	Valley
7	8	Amphenol Cables - 4 for audio - 4 for contact closure; 50 conductor cables per logger **AUDIO CABLE:** One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger. Note: At the logger end of the Amphenol cable, the connector should be male as the analog line cards are female. The angle needs to be determined by the site team as entry from the floor or ladder rack typically dictates 90 degree and if the cables enter back of cabinet 180 degree is preferred. **CONTACT CLOSURE:** One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger. The logger ends of the cable need to be flying leads. Note: This activity may require removal of legacy 66 telco blocks, installation of new 66 telco blocks and cross connects (jumpers) to existing telco blocks at the distribution frame.	Metro
8	8	Amphenol Cables - 4 for audio - 4 for contact closure; 50 conductor cables per logger **AUDIO CABLE:** One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger. Note: At the logger end of the Amphenol cable, the connector should be male as the analog line cards are female. The angle needs to be determined by the site team as entry from the floor or ladder rack typically dictates 90 degree and if the cables enter back of cabinet 180 degree is preferred. **CONTACT CLOSURE:** One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger. The logger ends of the cable need to be flying leads. Note: This activity may require removal of legacy 66 telco blocks, installation of new 66 telco blocks and cross connects (jumpers) to existing telco blocks at the distribution frame.	Valley
9	4	ANI/ALI cables from Vesta output to Black Box Corp Serial Data Buffer. Cables from Black Box Corp Serial Data Buffer to Digi Corp Serial to IP devices (1 per logger). Part numbers for Black Box device can be found at: http://www.blackbox.com/Store/Detail.aspx/Standard-RS-232-Low-Noise-Cable-25-Conductors-8212-Pins-1-25-Male-Male-10-ft-3-0-m/ECM25T-0010-MM Cables from Digi device to NRX/Switch are provided with IP Converter.	Metro
10	4	ANI/ALI cables from Vesta output to Black Box Corp Serial Data Buffer.	Valley

ITEM	QTY	Description	Site
		Cables from Black Box Corp Serial Data Buffer to Digi Corp Serial to IP devices (1 per logger). Part numbers for Black Box device can be found at: http://www.blackbox.com/Store/Detail.aspx/Standard-RS-232-Low-Noise-Cable-25-Conductors-8212-Pins-1-25-Male-Male-10-ft-3-0-m/ECM25T-0010-MM Cables from Digi device to NRX/Switch are provided with IP Converter.	

SECTION 4

SOLUTION EQUIPMENT LIST

4.1 NEW NRX PRODUCT

Table 4-1: LAPD Metro Site NRX 96-Channel Recorder

LAPD Metro Site	
Motorola Part Number	**Description**
96 Channel Primary Logger - Software Only	
DQLAPDNRX32	32 Channel NRX Base Bundle
TT05764AA	Additional 8 Recording Licenses - Max of 20 - For New System
DDN1693A	Analog Audio Board - 24 ports
TT05771AA	Analog channel Flag
DDN1690A	ANI-ALI Driver
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
DDN2180A	Digi Box Serial to IP Converter
DQBLACKBOXCONNECT	Black Box TL160A-R2
96 Channel - Second Redundant Logger - Software Only	
TBD	ADD: 32 Channel Parallel (2nd) NRX Base Bundle
TT05768AA	Additional 8 Parallel Recording Licenses - Max of 20
DDN1693A	Analog Audio Board - 24 ports
TT05771AA	Analog channel Flag
DDN1690A	ANI-ALI Driver
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
DDN2180A	Digi Box Serial to IP Converter
Included in NRX Bundle	
Included in bundle	96 Simultaneous Recording Licenses (does not include audio boards for analog and digital) - See Above
Included in bundle	Support For Archiving to Network Storage Server

LAPD Metro Site	
Motorola Part Number	**Description**
Included in bundle	5m Cables
DATABASE REPLICATION SYSTEM	
TBD	NICE Inform Profession Additional NICE Recording Core Server and Connection to NICE Inform
TBD	Central Server Connection for Primary Recorder
TBD	Central Server Connection for Parallel Recorder
TBD	Redundant Channel Audio Recording License including Inform Professional Application Support
OPERATING SYSTEMS AND SQL	
TBD	Windows 2012 64 2 Processor license English
TBD	MS SQL2012 Standard Edition 64 bit - Server License Per 2 x Processor Cores
SPARES	
DDN1693A	Analog Audio Board - 24 ports
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
SNMP SOFTWARE	
DDN7532	CastleRock SNMP Management Application

Table 4-2: LAPD Valley Site

LAPD - VALLEY SITE	
Motorola Part Number	**Description**
96 Channel Primary Logger - Software Only	
DQLAPDNRX32	32 Channel NRX Base Bundle
TT05764AA	Additional 8 Recording Licenses - Max of 20 - For New System
DDN1693A	Analog Audio Board - 24 ports
TT05771AA	Analog channel Flag
DDN1690A	ANI-ALI Driver
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
DDN2180A	Digi Box Serial to IP Converter
DQBLACKBOXCONNECT	Black Box TL160A-R2
96 Channel - Second Redundant Logger - Software Only	
TBD	ADD: 32 Channel Parallel (2nd) NRX Base Bundle
TT05768AA	Additional 8 Parallel Recording Licenses - Max of 20
DDN1693A	Analog Audio Board - 24 ports
TT05771AA	Analog channel Flag
DDN1690A	ANI-ALI Driver
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
DDN2180A	Digi Box Serial to IP Converter
Included in NRX Bundle	
Included in bundle	96 Simultaneous Recording Licenses (does not include audio boards for analog and digital) - See Above
Included in bundle	Support For Archiving to Network Storage Server
Included in bundle	5m Cables
Services Include	Installation During Normal Business Hours

Motorola Part Number	Description
DATABASE REPLICATION SYSTEM	
TBD	NICE Inform Profession Additional NICE Recording Core Server and Connection to NICE Inform
TBD	Central Server Connection for Primary Recorder
TBD	Central Server Connection for Parallel Recorder
TBD	Redundant Channel Audio Recording License including Inform Professional Application Support
OPERATING SYSTEMS AND SQL	
TBD	Windows 2012 64 2 Processor license English
TBD	MS SQL2012 Standard Edition 64 bit - Server License Per 2 x Processor Cores
Inform® OPTIONS	
	Licenses
DDN1870A	NICE Inform Reporter one concurrent user license
SPARES	
DDN1693A	Analog Audio Board - 24 ports
DDN1691A	Activity detection by external trigger (squelch) (24 inputs) (Maximum 1)
DDN1692A	Additional 24 ports of activity detection by external trigger
SNMP SOFTWARE	
DDN7532	CastleRock SNMP Management Application
ADDITIONAL HARDWARE - MOTOROLA OR CUSTOMER SUPPLIED	
	Network Router or Switch
	Appropriate Rack/Cabinet Space
	Playback Workstation(s)
	19" LCD drawer with Keyboard and Mouse, KVM 16 ports, Cables
	Hardware not supplied by NICE is not supported by NICE
	Remote Access to the Motorola Radio Network
	Remote Access to the Customer Network
	See Assumptions and Dependencies Tab for More Details

NICE Part Number	Description
	USER TRAINING
MOTO-TRN-INFRM-2-DAY	Inform User Training - Two Days On-Site for up to 6 Participants
PS-TR-EP-NR01-PS	NRX Self-Paced System Admin Training - One Year - Per User

4.2 INFORM UPGRADES: SOFTWARE

Table 4-3: NICE INFORM Upgrades

ECAT Part Number	Description
DQLAPDINFUPMETRO3 **Inform License Counts:** Master Servers = 1 Resilient Servers = 1 Voice Licenses = 420 Resilient Licenses = 420 **User License Counts:** Reconstruction = 18 Organizer = 20 Media Player = 1 Monitor = 5 Verify = 35	LAPD INFORM UPGRADE FROM V3.2 TO V7.0 - METRO ONLY APC: 229 DQ Item Includes: - NICE Inform Professional Site/Server license upgrade from R3 to R7 - 1 Ch voice integration to NICE Inform license upgrade, price per voice chan per maj ver upgraded (V3 to 7 = 4 x 420 at Metro) - 1 Redundant Ch voice integration to NICE Inform license upgrade, price per voice chan per maj ver upgraded (V3 to 7 = 4 x 420 at Metro) - NICE Inform Reconstruction application upgrade, price per concurrent user license per major version upgraded (18 x 4 Major) - NICE Inform Organizer application upgrade, price per concurrent user license per major version upgraded (20 x 4 Major) - NICE Inform Media Player upgrade, price per system per major version upgraded (1 x 4 Major) - NICE Inform Monitor application upgrade, price per concurrent user license per major version upgraded (5 x 4 Major) - NICE Inform Verify application license upgrade, price per conc user license per major ver upgraded (35 x 4 Major) - NICE Inform site resilience license upgrade, price per additional Inform resilience server per major version upgraded (1 x 4 Major) - Media Pack Physical Software Delivery per Installed Site. - Windows 2012 64 2 Processor license English - MS SQL2012 Standard Edition 64 bit - Server License Per 2 x Processor Cores
DQLAPDINFUPVALLEY4 **Inform License Counts:** Resilient Servers = 2	LAPD INFORM UPGRADE FROM V3.2 TO V7.0 - VALLEY ONLY APC: 229 DQ Item Includes: - NICE Inform site resilience license upgrade, price per additional Inform resilience server per major version upgraded (2 x 4 Major) - Windows 2012 64 2 Processor license English - MS SQL2012 Standard Edition 64 bit - Server License Per 2 x Processor Cores

SECTION 5

IMPLEMENTATION PLAN

5.1 INTRODUCTION

This document describes the planned activity to support all phases of the LAPD implementation (see high level description below). The following sections define deliverables and milestones and also clearly delineate the responsibilities of Motorola and LAPD. It should be noted that assumptions are in three areas of the document. Notable assumptions are listed in section 1 and address the document and the overall program, assumptions specific to certain projects are included in relevant sections (2-4) and general assumptions are listed in section 7.

5.1.1 High Level Description of Phases 1 - 3

This project (NICE-LAPD solution) has been segmented into 3 major Phases.

1. Procurement.
2. Deployment.
3. Legacy Data Migration/Documentation/Legacy Server Decommissioning.

Notable Assumptions

- NICE Systems will implement the solution described in the approved design documents. Any changes shall be agreed and documented via change control and may result in a change in cost and/or schedule.
- Implementation for all phases will adhere to the approved NICE deployment schedule.
- Dates for phases/stages are noted in section 5. Any variation to dates may result in a change to cost and/or schedule.
- NICE Systems does not interface directly with other work streams. All required information, Customer Furnished Equipment and Information (CFEI) equipment/software, workstream coordination, etc., will be obtained through Motorola or LAPD. Delays in obtaining necessary coordination/information could cause schedule delays and/or costs outside the control of NICE Systems.
- It should be noted that the proposed schedule for Phase 1, 2 and 3 assumes no gaps in the planned implementation phases. If Motorola or LAPD requires NICE Systems to stop work, NICE Systems will require a reasonable period to create (hire and/or staff) a suitable replacement project team.
- Completion of Phase 3 delineates the end of the NICE Solution implementation at LAPD.

5.1.2 Phase 1 (Procurement)

NICE Systems will process the LAPD equipment/software order based on the approved bill of materials. Procurement will consist of all components necessary to support the LAPD deployment and subsequent data migration.

NICE Responsibilities

- Responsible for correlating approved bill of materials with internal order processing. This includes versions, model numbers, special options and connectivity.

- NICE Systems will execute order (procure equipment/software) in accordance with the Agreement (notice to proceed from Motorola)
- Equipment will be delivered to designated LAPD locations
- NICE Systems will officially receive and inventory equipment/software in accordance with Motorola and/or LAPD guidelines provided to NICE Systems by Motorola. If this process is undefined at time of shipment, NICE Systems will work with Motorola to establish a process to reconcile the materials against the approved bill of materials.
- NICE Systems is responsible for ordering and shipping equipment in a timely manner and without damage

Motorola Responsibilities

- Provide written authorization to commence Equipment/Software procurement.
- Motorola will work with the NICE Systems to develop a process to officially receive the materials and reconcile the equipment/software against the approved bill of materials
- Motorola will ensure all necessary CFEI equipment/software is received at the designated locations prior to the end of the Procurement stage.

LAPD Responsibilities

- Procure and deliver all servers to support telephony recording solution. Please note that all servers must be purchased with the HP Hardware and Software Reactive Support package (HP Foundation Care CTR Service). This plan must be purchased (per server) for a period of 5 years.
- Once the NICE solution is delivered to the designated LAPD locations, LAPD is responsible for physical security.
- LAPD will provide a secure area for the storage of NICE Systems materials. Note: Spares to support the solution must be stored in a secure location.
- LAPD to provide audio channel names for upcoming installation.

Procurement - Deliverables

- NICE Systems will provide report listing equipment/software items shipped to designated LAPD locations. This list may also include 3rd party equipment/software and any items necessary to support equipment installation at LAPD.

5.1.3 Phase 2 (Deployment)

NICE Systems has installed solutions at over 1,000 Public Safety and Emergency Services Organizations in the US, including 9 of the 10 largest cities. The NICE Project Managers, Implementation Engineers and Solution Architects are dedicated to implementing Public Safety Recording solutions. The NICE Systems Project Manager will be both remote and present on-site during the LAPD project as the NICE PM assists the Motorola PM and LAPD PM prepare for the implementation. The NICE PM will then be on-site at all important/critical junctures of the project. The Implementation Engineer will be on site for the duration and will be supported remotely by the Solution Architect (database subject matter expert supporting the data migration) during Phase 3.

5.1.3.1 Pre-installation Site Survey – Site Preparation

At or near time of NICE equipment/software arrival, NICE Systems will conduct an inspection of the designated installation areas at the Metro and Valley sites. To include:

- All CFEI is on site (connected and ready if necessary hardware).
- All NICE equipment is on site at the designated location.
- Rack Space.

- Power.
- Network Infrastructure and Connectivity.
- Static IP addresses.
- Grounding.
- Audio Cabling.

Note: If NICE Systems identifies gaps during the pre-installation inspection, Motorola/LAPD will remediate these issues in a timely manner to minimize the risk of a schedule delay.

5.1.3.2 Solution Build (Physical Server Installation)

NICE equipment/software receipt, processing (asset management if necessary) and staging will be conducted at the designated LAPD locations (one set of hardware/software at Valley and one set at Metro).

NICE Responsibilities

- NICE Systems will install the servers into the designated cabinet (customer supplied). This stage includes assembly, system build out (e.g. server installation and cabinet wiring, etc.). The cabinets, network connectivity (e.g. port assignments) and subsystem components (hardware and software) will be configured per the approved LAPD design/cabinet diagram.
- Receive, unpack and inventory all equipment and software.
- Populate and run intra-cabinet wiring (network connectivity (Cat6), connection to KVM switch, server installation, connectivity to ground bar (if required), etc.).
- Cable labeling per approved guidelines (supplied by Motorola/LAPD)

Motorola/LAPD Responsibilities

- Provide shipping instructions/logistics
- Provide NICE Systems with cable labeling guidelines (nomenclature, methodology, etc.).
- Provide production static IP addresses for all relevant NICE components
- Asset management report template, methodology, procedures, physical labels, specialized equipment, asset ID's, etc., must be supplied to NICE Systems by Motorola
- Provide list of personnel to attend end user training
- Identify facilities to accommodate the anticipated quantity of attendees. Room will be equipped with dedicated workstations (one for each attendee and instructor) with access to the NICE Solution. Room shall be equipped with a projector.
- LAPD will coordinate access to assure appropriate building personnel are on-site when needed to conduct Contractors work as defined in this document.
- Workstation power, keyboard, mice, network patch, and video cabling will be standard lengths.
- The dedicated SNMP workstation will consist of 1 PC, 1 Monitor, 1 Keyboard and 1 Mouse.
- All relevant cables (i.e. amphenol for audio, contact closure, etc.) will be run by others and coiled in the existing ladder rack (or under the floor) with the appropriate slack, terminations/connectors and labeling. Note: NICE Systems is not responsible for testing cables installed by others. Cables to include:
- 8 50 conductor cables per logger;
- One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger (audio). See example audio wiring below.
- One cable from blocks associated with channels 1-23, 24-47, 48-71 and 72-95 to each logger (contact closure). See example contact closure wiring below.

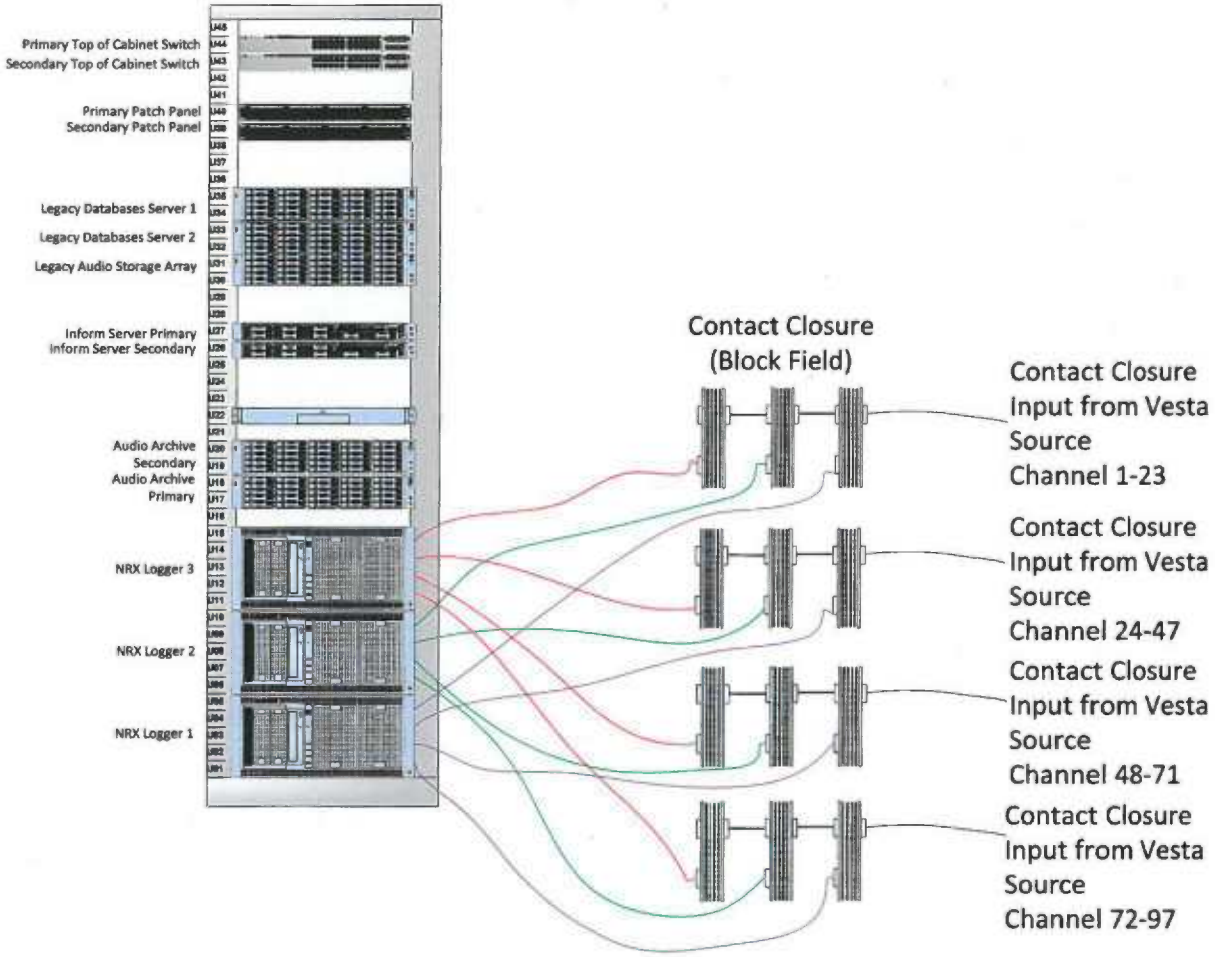


Figure 5-1: Contact closure example

General Assumptions

- All software versions (OS, VMware vSphere, SQL, MySQL, Server Specific, Client Specific, etc.,) loaded at staging, will be the consistent with the approved final design document. If the NICE Systems engineering department determines that an upgrade is necessary, NICE Systems will communicate this information to Motorola and LAPD.

System Build - Deliverables

- Test Procedure Document (for LAPD review).
- Report Showing Components and Part Numbers.
- Training Documents/Presentations/Agenda.

5.1.3.3 NICE Solution Installation (Metro and Valley)

The solution installation stage includes the configuration of software and hardware based on the approved design.

NICE Systems Responsibilities

- Server and Workstation OS installation and configuration.
- Load update packs, patches and drivers (RAID controller and other hardware).
- Assign Static IP address.
- Configure communication stacks (TCP/IP) and teaming NICs (if required).
- Configure and format RAID set(s).
- SQL installation and configuration.
- Configure Server specific applications.
- Assign channel number and channel alias names based on the approved design.
- Load and configure NICE specific applications.
- Configure Workstation with CastleRock SNMP (polling and trap destination setup).

LAPD Responsibilities

- The NICE solution is based on top of cabinet switches (supplied by LAPD). The LAPD network solution (access/distribution layer switches, WAN, etc.,) must be able to accommodate the necessary uplinks from the NICE cabinets.
- Provide and identify main (on site) point of contact for NICE issues during site installation.
- To provide Cat 6 cabling from wall jack to each of the dedicated NICE Workstations.
- Supply the assigned physical location of the designated workstations. Note: Ensure that each position has adequate AC and Network connectivity.
- Security access for all members of the NICE implementation team assuming background checks are complete. Note: This applies to both Metro and Valley.
- Reasonable access (8am to 5pm) to the NICE equipment during entire duration of the project. Note: This applies to both Metro and Valley.
- LAPD will provide dedicated bandwidth between Metro and Valley to facilitate off site archive.

General Assumptions

- The NICE solution installation will not be subject to the formal change management process until Phase 2 is complete.
- NICE Systems no longer maintains dedicated domain controllers and therefore requires authentication to LAPD provided DC's.
- The NICE solution does not support HIPS (host-based intrusion prevention software). Deployment and/or testing of HIPS on NICE servers or workstations is out of scope.
- All network infrastructure is in place and built to the specifications defined in the approved design prior to commencing the NICE Installation. This includes: Port assignments, VLAN configuration, Firewall ports, etc.

5.1.3.4 Training

NICE will provide on-site user training utilizing a NICE Systems Professional Trainer (Public Safety Division). Two sessions of two days each are provided. Up to 6 participants can be accommodated in each two-day session. The training will provide instruction on all Inform modules that LAPD uses, including the new Reporter module. The focus will be on Organizer for most of the session.

NICE Responsibilities

- Deliver end user training based on approved materials.
- In addition to the instructor, NICE Systems will also ensure that technical resources are in attendance to address any site specific questions.

LAPD Responsibilities

- Provide list of personnel to attend end user training session(s).

- Provide facilities to accommodate the anticipated quantity of attendees. Room will be equipped with dedicated workstations (one for each attendee and instructor) with access to the NICE solution. Room shall be equipped with a projector.

End User Training - Deliverables

- End User Training Materials.

5.1.3.5 NICE Installation Test

The tests will range from validating each recording channel to the more sophisticated failover scenarios. The testing typically requires collaboration as LAPD, or possibly other vendors, may be required to generate test audio.

NICE Systems Responsibilities

- Validate the readiness (entry criteria) of test execution. Note: This relates to the readiness of other work streams.
- NICE Systems will conduct a "dry run" of the entire test procedure prior to the formal test with LAPD and Motorola witnesses.
- Execute formal test (inspection, analysis and demonstration).
- If a test procedure fails, NICE Systems will remediate issue and re-run test.
- NICE Systems shall document all results of test for integration into final report.
- To provide other workstreams and/or LAPD with audio scripts (to facilitate audio input to support testing).

Motorola Responsibilities

- Witness test procedures.

LAPD Responsibilities

- Vendor management and coordination (audio input to support NICE testing).
- To ensure other workstreams generate audio in a timely manner (according to schedule).
- Witness test procedures.

Installation Test Stage - Deliverables

- Test Report certified (witnessed and signed) by LAPD and Motorola.

5.1.4 Phase 3 (Legacy Data Migration, Site Documents, Legacy Server Decommissioning)

Phase 3 is planned to address the migration of telephony audio and associated call record data from the existing LAPD recording solution to the new solution. The current audio (telephony) recording system (Valley and Metro) contains audio and associated call records for approximately the past 5 years. There are 10 call records database servers at each location and associated audio archive. The proposed solution includes 2 dedicated servers for the legacy call record databases and 1 server for legacy audio. Note that each of the new call record database servers will contain 5 of the legacy databases. The legacy audio from the existing audio archive server will be moved to the new audio archive server. This process will move the data and associated audio off of the legacy platform (OS 2003 and SQL 2005) to servers running OS 2012 and SQL 2012. In addition, the Inform application will be configured to access the 20 new databases (10 at Metro and 10 at Valley) in order to facilitate search and replay of legacy audio. In addition to the planned data migration activity, the site documentation will be generated and the legacy servers will be decommissioned during this project phase.

Decommissioning of legacy recording equipment will consist of the removal of all legacy servers (to include Wordnets, Nicelogs, CLS servers, Inform Servers, Storage Center Servers, Domain Controllers, Storage Arrays) no longer is use. This activity is planned several months after the new system and the Inform V7.x upgrade are in full production. The LAPD will provide NICE a designated area to place these servers. It should be noted that NICE will only decommission the servers associated with the legacy recording systems and will not remove wiring, cabling, IT equipment (i.e. network switches, patch panels, etc.,), cabinets or associated infrastructure (grounding bars, KVM, PDU's, etc.).

NICE Responsibilities

- NICE Systems Advanced Services Group will develop a granular implementation plan to specifically address the data migration.
- NICE Systems will regularly update LAPD and Motorola as the data if being moved from the legacy to the new solution.
- NICE Systems will provide reports showing the amount of data moved. In addition, NICE Systems will spot check audio/call records to ensure data integrity.
- NICE Systems to decommission all legacy servers and place them in designated area (provided by LAPD).

Motorola and LAPD Responsibilities

- Review and approval of documentation to support data migration.
- VPN access from NICE engineering to NICE solution at LAPD.
- Designated area to store legacy servers.

Data Migration/Documentation/Server Decommissioning - Deliverables

- Final report showing audio and data counts.
- NICE Solution As built Document and System Operations Guide.
- Report listing legacy server that were removed from the Cabinets and delivered to designated LAPD location.

5.2 PROJECT TIMELINE

The projected timeline (Table 5-1) is based on a Notice to Proceed date of November 20, 2015. Note the following:

- The 2015, 2016 schedule takes the Contractor's Holiday schedule into consideration; New Year's Day, Civil Rights Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving (2 days) and Christmas Day.

Table 5-1: Projected Timeline

Phase Description	Duration (Business Days)	Projected Dates
Procurement – NICE Equipment Shipped to Site	35	11/20/2015 – 1/13/2015
LAPD Servers and IT equipment delivered to site (Valley and Metro)	NA	1/13/2016
Deployment Preparation (Site Readiness, Hardware Inventory and Validation)	5	1/14/2016 – 1/21/2016
Site Readiness Remediation (if necessary)	10	1/22/2016 – 2/4/2016
Solution Deployment	25	2/5/2016 – 3/11/2016
Installation Testing (Dry Run and Formal Test)	5	3/14/2016 – 3/18/2016
End User Training (Metro)	2	3/7/2016 – 3/8/2016
End User Training (Valley)	2	3/9/2016 – 3/10/2016
Month (30 calendar days) in between end of installation and data migration.	21	3/21/2016 – 4/18/2016
Data Migration (Legacy Recording Data)	15	4/19/2016 – 5/9/2016
Post Install Document Generation	15	4/19/2016 – 5/9/2016
Post Installation System Monitoring	25	5/10/2016 – 6/7/2016
Legacy System Decommissioning	5	6/8/2016 – 6/14/2016

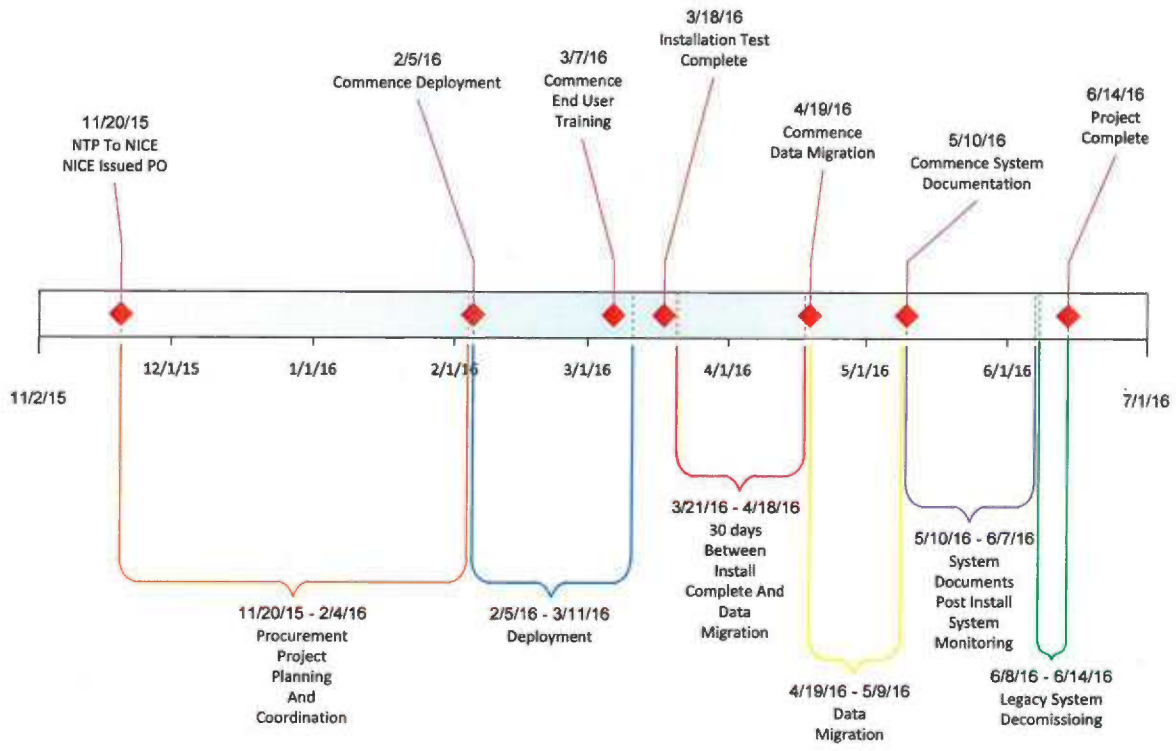


Figure 5-2: LAPD Technology Refresh Timeline

5.3 PROJECT PERSONNEL

Project Manager

Manage all phases of services, including:

- Create and Manage Project Plan (schedule).
- Manage NICE Systems resources dedicated to all Phases.
- Main point of contact for Motorola, LAPD and other LAPD vendors.
- Provide regular status updates to Motorola and LAPD.
- Represent NICE in meetings as required.
- Responsible for all aspects of solution (Site Specific) documentation.
- Work with implementation engineer and solution architect to ensure documentation is accurate.

Solution Architect (Database Administrator)

Responsible for the granular details associated with the audio and metadata migration from the legacy system, including:

- Any tools (Scripts) that need to be created to support the accurate movement of call records and audio from the legacy system to the new servers/storage.

- Creation of reports and or tests that need to executed to confirm the accuracy of the data migration.

Implementation Engineer

Responsible for the technical aspects of the NICE solution deployment, including:

- Component assembly and cabling.
- Software installation (OS, SQL, Server Specific Applications, etc.).
- System configuration.
- System testing/ System Monitoring.

5.4 PROJECT ASSUMPTIONS AND DEPENDENCIES

Facilities (Electrical, HVAC, Dimensions)

- LAPD will provide sufficient power (including circuit breakers with appropriate amperage and voltage, cabling, electrical connectors and outlets).
- LAPD will provide sufficient cooling based on total BTU output.
- LAPD will provide sufficient rack space for all NICE equipment.
- LAPD will ensure that equipment rooms will provide sufficient space and floor support to accommodate all provided equipment.
- The provided system is not certified for seismic activity and does not include any hardware or subsystems making it more or less susceptible to seismic activity.
- LAPD is responsible for providing Uninterruptible Power Supply (UPS) to system. If UPS facility not provided or purchased, customer is responsible for any and all system issues caused by uncontrolled shut-down due to power loss.

Demarcation

- LAPD will ensure the availability and proper function of all systems (example: Network).
- LAPD is responsible for all wiring up to and including the demarcation point to include audio signalling, network and power.
- LAPD will provide demarcation point including all audio signals to within 10 feet (line length) of the back of the recording system.
- All analog telephony feeds will be in two-wire format.
- LAPD will provide all telephony audio to a demarcation point within 10 feet of the recorder
- LAPD will provide all cross-connects (if necessary) from source audio to the Contractors designated 66-blocks including bridging clips.
- Telephone hand-sets must be within 1000 feet of the switch (lengths are "cable length" not "line of sight".

Labor

- Motorola/LAPD will ensure that all contracted union or other labor will NOT DELAY unloading, delivery, locating and affixing system cabinets and components in designated space.

Bandwidth

LAPD will provide sufficient bandwidth between Metro and Valley. Note: It is anticipated that the current bandwidth will be sufficient and additional bandwidth will not be required to support the proposed solution.

Interfaces

The Customer is responsible for providing ANI/ALI data to the rear (demarc) of the NICE recorder or capture device server.

Unless otherwise specifically addressed and priced in the quote, NICE makes no implicit or explicit commitment to interface to any third party software such as CAD, GIS, etc.

Network

- Motorola/LAPD is responsible for all data network infrastructure not purchased from NICE Systems including (but not limited to) switches, routers, firewalls and cabling.
- Motorola/LAPD will provide static IP addresses for all NICE Systems equipment.
- Motorola/LAPD will provide adequate network connections (Fiber/LC to LC connection, CAT6/RJ45 cable) for each system component requiring network access.
- Network utilizes the TCP/IP protocol stack.
- Network supports at minimum 100BaseT Ethernet.
- LAN/WAN latency is assumed to be less than 150 milliseconds.

General

- Customer to provide detailed schematic of infrastructure, including details of all routers/switches for the data network relating to the recorder system and the mapping of phone lines in the system.
- The Customer/Partner must notify NICE of any compulsory Site Safety induction required for site access. Non notification will result in project delays and incur additional services costs.
- The Customer/Partner must notify NICE of any compulsory server hardening policies.
- Customer is responsible for full-time system management subsequent to completion of implementation and training of Customer staff.

Implementation & Cutover

- Hours for implementation will be 8:00AM - 5:00PM Local Time Monday through Friday, excluding NICE Systems and LAPD holidays (designated for all employees in official company documentation)
- LAPD will supply cubicle(s), conference room, office, or other appropriate space to NICE Systems Implementation staff for duration of implementation and testing
- Motorola/LAPD will identify designated internal IT/Telephony/Network staff dedicated to the implementation of the purchased solution, in writing, prior to the commencement of the on-site implementation
- Motorola/LAPD is responsible for notifying the identified NICE Systems Point of Contact (POC) in writing at least 72 hours in advance of schedule change or cancellation of services
- LAPD will provide all required site clearances for NICE Systems staff in a timely manner to perform the necessary work activities
- Motorola/LAPD will designate an authorized representative to participate in system testing in its entirety. This representative will be identified prior to start of on-site implementation
- During the test phase, Motorola/LAPD and/or related workstreams are responsible for generating (if necessary) test calls

Project Completion, Site Access and Staff Availability

- Motorola/LAPD will ensure that all radio, dispatch, telephony and network systems are available and fully operational prior to commencement of the commissioning stage of the implementation.
- Motorola/LAPD will ensure availability of designated staff to assist in commissioning/implementation issues within 1/2 hour of notification by NICE Systems staff.

5.5 PROJECTED OPERATIONAL IMPACT

The installation of the new NICE solution will be conducted concurrent with live operations. Zero disruption to operations is always the goal. In the case where a disruption is unavoidable, the vendor will coordinate with Motorola and LAPD to minimize any potential disruption.

SECTION 6

PROJECT SCHEDULE

Please see the detailed project schedule, included below.

ID	Task Name	Duration	Start	Finish	Resource Names	Predecessors
1						
2	NTP to NICE (NICE Issued PO)	0 days	Fri 11/20/15	Fri 11/20/15		
3	Procurement + NICE Equipment/Software Shipped to Site	35 days	Fri 11/20/15	Wed 1/13/16	PM[50%]	2
4	LAPD Supplied Servers On Site (Metro and Valley)	0 days	Wed 1/13/16	Wed 1/13/16		3
5	Deployment Preparation (Site Readiness, Hardware Inventory and Validation)	5 days	Thu 1/14/16	Thu 1/21/16	PM	4
6	Remediation Period (if necessary)	10 days	Fri 1/22/16	Thu 2/4/16	PM[50%]	5
7	**Solution Deployment**	25 days	Fri 2/5/16	Fri 3/11/16	PM,IE1,IE2	6
8	**NRX Installation (Metro)**	**0.5 days**	**Fri 2/5/16**	**Fri 2/5/16**		**6**
9	Server rack and cabling (network and power)	0.5 days	Fri 2/5/16	Fri 2/5/16		6
10	**Inform Server Installation (Metro)**	**0.5 days**	**Fri 2/5/16**	**Fri 2/5/16**		**9**
11	Server rack and cabling (network and power)	0.5 days	Fri 2/5/16	Fri 2/5/16		9
12	**Storage Array Installation (Metro)**	**0.5 days**	**Mon 2/8/16**	**Mon 2/8/16**		**11**
13	Storage rack and cabling (network and power)	0.5 days	Mon 2/8/16	Mon 2/8/16		11
14	**Storage Array Installation (Legacy Audio) - Metro**	**0.5 days**	**Mon 2/8/16**	**Mon 2/8/16**		**31**
15	Storage rack and cabling (network and power)	0.5 days	Mon 2/8/16	Mon 2/8/16		31
16	**CLS Legacy Host (Metro)**	**0.5 days**	**Tue 2/9/16**	**Tue 2/9/16**		**51**
17	Server rack and cabling (network and power)	0.5 days	Tue 2/9/16	Tue 2/9/16		51
18	**CastleRock Workstation Installaton (Metro)**	**0.5 days**	**Tue 2/9/16**	**Tue 2/9/16**		**51**
19	CastleRock Workstation Installation (Power and Network Connectivity)	0.5 days	Tue 2/9/16	Tue 2/9/16		51
20	**NRX Installation (Valley)**	**0.5 days**	**Tue 2/9/16**	**Tue 2/9/16**		**91**
21	Server rack and cabling (network and power)	0.5 days	Tue 2/9/16	Tue 2/9/16		91
22	**Inform Server Installation (Valley)**	**0.5 days**	**Wed 2/10/16**	**Wed 2/10/16**		**12**
23	Server rack and cabling (network and power)	0.5 days	Wed 2/10/16	Wed 2/10/16		12
24	**Storage Array Installation (Valley)**	**0.5 days**	**Wed 2/10/16**	**Wed 2/10/16**		**32**
25	Storage rack and cabling (network and power)	0.5 days	Wed 2/10/16	Wed 2/10/16		32
26	**Storage Array Installation (Legacy Audio) - Valley**	**0.5 days**	**Thu 2/11/16**	**Thu 2/11/16**		**52**
27	Storage rack and cabling (network and power)	0.5 days	Thu 2/11/16	Thu 2/11/16		52
28	**CLS Legacy Host (Valley)**	**0.5 days**	**Thu 2/11/16**	**Thu 2/11/16**		**72**
29	Server rack and cabling (network and power)	0.5 days	Thu 2/11/16	Thu 2/11/16		72
30	**CastleRock Workstation Installaton (Valley)**	**0.5 days**	**Thu 2/11/16**	**Thu 2/11/16**		**72**
31	CastleRock Workstation Installation (Power and Network Connectivity)	0.5 days	Thu 2/11/16	Thu 2/11/16		72
32	**NRX Installation (Metro)**	**2.5 days**	**Fri 2/12/16**	**Wed 2/17/16**		**13**

13, '14 M T

Project: PSAC2 Project2
Date: Sun 9/27/15

Task	External Milestone	Manual Summary Rollup	
Split	Inactive Task	Manual Summary	
Milestone	Inactive Milestone	Start-only	
Summary	Inactive Summary	Finish-only	
Project Summary	Manual Task	Progress	
External Tasks	Duration-only	Deadline	

ID	Task Name	Duration	Start	Finish	Resource Names	Predecessors
33	OS Prep (i.e. Static IP address assignment)	0.5 days	Fri 2/12/16	Fri 2/12/16		13
34	Preinstallation Activity (i.e. OS Security Updates), Board Installation	0.5 days	Fri 2/12/16	Fri 2/12/16		33
35	NRX Software installation and configuration	1 day	Tue 2/16/16	Tue 2/16/16		43
36	Cabling (telecom/radio)	0.5 days	Wed 2/17/16	Wed 2/17/16		53
37	**Inform Server Installation (Metro)**	**2.5 days**	**Wed 2/17/16**	**Fri 2/19/16**		**63**
38	OS Prep (i.e. Static IP address assignment)	0.5 days	Wed 2/17/16	Wed 2/17/16		63
39	Preinstallation Activity (i.e. OS Security Updates)	0.5 days	Thu 2/18/16	Thu 2/18/16		83
40	SQL loading and configuration	0.5 days	Thu 2/18/16	Thu 2/18/16		93
41	Inform Server Software Configuration and Installation	1 day	Fri 2/19/16	Fri 2/19/16		04
42	**Storage Array Installation (Metro)**	**1 day**	**Mon 2/22/16**	**Mon 2/22/16**		**14**
43	Storage Array Configuration	1 day	Mon 2/22/16	Mon 2/22/16		14
44	**Storage Array Installation (Legacy Audio) - Metro**	**1 day**	**Tue 2/23/16**	**Tue 2/23/16**		**34**
45	Storage Array Configuration	1 day	Tue 2/23/16	Tue 2/23/16		34
46	**CLS Legacy Host (Metro)**	**0.5 days**	**Wed 2/24/16**	**Wed 2/24/16**		**54**
47	OS Prep (i.e. Static IP address assignment)	0.5 days	Wed 2/24/16	Wed 2/24/16		54
48	Preinstallation Activity (i.e. OS Security Updates)	0.5 days	Wed 2/24/16	Wed 2/24/16		54
49	SQL loading and configuration	0.5 days	Wed 2/24/16	Wed 2/24/16		54
50	**NRX Installation (Valley)**	**2.5 days**	**Wed 2/24/16**	**Fri 2/26/16**		
51	OS Prep (i.e. Static IP address assignment)	0.5 days	Wed 2/24/16	Wed 2/24/16		94
52	Preinstallation Activity (i.e. OS Security Updates), Board Installation	0.5 days	Thu 2/25/16	Thu 2/25/16		15
53	NRX Software installation and configuration	1 day	Thu 2/25/16	Fri 2/26/16		25
54	Cabling (telecom/radio)	0.5 days	Fri 2/26/16	Fri 2/26/16		35
55	**Inform Server Installation (Valley)**	**2.5 days**	**Mon 2/29/16**	**Wed 3/2/16**		**45**
56	OS Prep (i.e. Static IP address assignment)	0.5 days	Mon 2/29/16	Mon 2/29/16		45
57	Preinstallation Activity (i.e. OS Security Updates)	0.5 days	Mon 2/29/16	Mon 2/29/16		65
58	SQL loading and configuration	0.5 days	Tue 3/1/16	Tue 3/1/16		75
59	Inform Server Software Configuration and Installation	1 day	Tue 3/1/16	Wed 3/2/16		85
60	**Storage Array Installation (Valley)**	**1 day**	**Wed 3/2/16**	**Thu 3/3/16**		**95**
61	Storage Array Configuration	1 day	Wed 3/2/16	Thu 3/3/16		95
62	**Storage Array Installation (Legacy Audio) - Valley**	**1 day**	**Thu 3/3/16**	**Fri 3/4/16**		
63	Storage Array Configuration	1 day	Thu 3/3/16	Fri 3/4/16		16
64	**CLS Legacy Host (Valley)**	**0.5 days**	**Fri 3/4/16**	**Fri 3/4/16**		**36**

13, '14
M T

Project: PSAC2 Project2
Date: Sun 9/27/15

Task	External Milestone	Manual Summary Rollup	
Split	Inactive Task	Manual Summary	
Milestone	Inactive Milestone	Start-only	
Summary	Inactive Summary	Finish-only	
Project Summary	Manual Task	Progress	
External Tasks	Duration-only	Deadline	

ID	Task Name	Duration	Start	Finish	Resource Names	Predecessors	13, '14 M T
65	OS Prep (i.e. Static IP address assignment)	0.5 days	Fri 3/4/16	Fri 3/4/16		36	
66	Preinstallation Activity (i.e. OS Security Updates)	0.5 days	Fri 3/4/16	Fri 3/4/16		36	
67	SQL loading and configuration	0.5 days	Fri 3/4/16	Fri 3/4/16		36	
68	**Replay Workstation Installaton (Metro)**	**1 day**	**Mon 3/7/16**	**Mon 3/7/16**		**76**	
69	Installation of NICE Client software (i.e. CODEC)	1 day	Mon 3/7/16	Mon 3/7/16		76	
70	**CastleRock Workstation Installaton (Metro)**	**1.5 days**	**Tue 3/8/16**	**Wed 3/9/16**		**96**	
71	CastleRock Workstatiuon OS (Static IP, OS Security Updates, etc.)	0.5 days	Tue 3/8/16	Tue 3/8/16		96	
72	CastleRock Installation and Configuration	0.5 days	Tue 3/8/16	Tue 3/8/16		17	
73	Trap configuration (SNMP Polling and Destination)	0.5 days	Wed 3/9/16	Wed 3/9/16		27	
74	**Replay Workstation Installaton (Valley)**	**1 day**	**Wed 3/9/16**	**Thu 3/10/16**		**37**	
75	Installation of NICE Client software (i.e. CODEC)	1 day	Wed 3/9/16	Thu 3/10/16		37	
76	**CastleRock Workstation Installaton (Valley)**	**1.5 days**	**Thu 3/10/16**	**Fri 3/11/16**		**57**	
77	CastleRock Workstatiuon OS (Static IP, OS Security Updates, etc.)	0.5 days	Thu 3/10/16	Thu 3/10/16		57	
78	CastleRock Installation and Configuration	0.5 days	Fri 3/11/16	Fri 3/11/16		77	
79	Trap configuration (SNMP Polling and Destination)	0.5 days	Fri 3/11/16	Fri 3/11/16		87	
80	**System Test**	**5 days**	**Mon 3/14/16**	**Fri 3/18/16**		**97**	
81	Installation Test Plan Dry Run	3 days	Mon 3/14/16	Wed 3/16/16	PM,IE1	97	
82	Formal Installation Test	2 days	Thu 3/17/16	Fri 3/18/16	PM,IE1	18	
83	Training (Metro)	2 days	Mon 3/7/16	Tue 3/8/16	TR		
84	Training (Valley)	2 days	Wed 3/9/16	Thu 3/10/16	TR	38	
85	30 Days of Monitoring before Data Migration	21 days	Mon 3/21/16	Mon 4/18/16	PM	28	
86	Data Migration (Legacy Recording Data)	15 days	Tue 4/19/16	Mon 5/9/16	SA1	58	
87	Post Install Document Generation (System As Builts, System Operations Guide)	15 days	Tue 4/19/16	Mon 5/9/16	PM	58	
88	Post Installation System Monitoring	20 days	Tue 5/10/16	Tue 6/7/16	PM[50%]	78	
89	Legacy System Decomissioning	5 days	Wed 6/8/16	Tue 6/14/16	PM[50%],IE1	88	

Project: PSAC2 Project2
Date: Sun 9/27/15

Task	External Milestone	Manual Summary Rollup	
Split	Inactive Task	Manual Summary	
Milestone	Inactive Milestone	Start-only	
Summary	Inactive Summary	Finish-only	
Project Summary	Manual Task	Progress	
External Tasks	Duration-only	Deadline	

SECTION 7

SUPPORT

Provided in Table 7-1 is a description of the Gold Support Package that NICE will provide to support LAPD. This package covers support for software and customer provided hardware. NICE requires that it supports the hardware and software to ensure timely resolution of issues and to be able to determine root cause analysis of issues.

Table 7-1: Service and Response Time by Priority

	Priority 1	Priority 2	Priority 3	Priority 4
Phone Availability	24x7	24x7	24x7	24x7
Support Coverage	24x7	24x7	24x7	24x7
Call Back Response Time	60 minutes	120 minutes	24 hours	24 hours
On Site Response Times	4 hours	24 hours	48 hours	48 hours

Priority Definitions

Priority 1 - Critical Failure – In a 100% recording environment, any failure of NICE software or communications to the NICE products which results in loss of recording channels or data, or if allowed to persist will result in such recording loss.

Priority 2 - Major Problem – Any problem resulting in loss of ability to retrieve calls or loss of replay functionality for two or more workstations.

Priority 3 - Product Anomaly - Any problem affecting software on one or more workstation(s) which does not result in a loss of recording or replay but nevertheless results in diminished Product response or performance (for example, if an administrator loses the ability to add or delete users).

Priority 4 - System Inquiry, Planned Intervention or Request for information.

Remote Support

Rapid response by Motorola and NICE and delivery of its services at the above levels requires that the LAPD provide immediate, remote access to the system via PCAnywhere or Virtual Private Network (VPN). LAPD should choose a VPN option that best suits its needs. Meeting some of the above service levels requires remote access. On-site support does not replace the requirement for remote access. Inadequate remote access will affect timeliness of response and issue resolution.

SECTION 8

PRICING

8.1 PRICING SUMMARY

PROPOSED SOLUTION TOTALS	Pricing
Services	$ 874,523.00
Equipment, Software, Licenses	$ 564,140.00
Sub Total	$1,438,663.00
Tax (9%)	$ 50,773.00
TOTAL	$1,489,436.00

SIXTH AMENDMENT TO CONTRACT NUMBER C-123897
BETWEEN
THE CITY OF LOS ANGELES
AND
MOTOROLA SOLUTIONS, INC.

This is the **SIXTH AMENDMENT** to Contract Number C-123897 between the City of Los Angeles, a Municipal Corporation, ("City"), acting by and through the Los Angeles Police Department, ("LAPD"), and Motorola Solutions, Inc., a Delaware Corporation, "Motorola" or "Contractor".

RECITALS

WHEREAS, on May 8, 2014, the City and the Contractor entered into Contract No. C-123897 ("Original Agreement") for services; and

WHEREAS, Section 2.4 of the Original Agreement allows other City departments, including the Information Technology Agency, ("ITA"), to use the Original Agreement to make purchases of services as an "Eligible Purchaser"; and

WHEREAS, the Original Agreement provides for amendments; and

WHEREAS, the First Amendment provided for an upgrade of the LAPD's Geofile system for the 9-1-1 Dispatch Center and added a contract ceiling amount of $60,000; and

WHEREAS, the Second Amendment provided for a part of the upgrade of LAPD's radio system utilizing general fund monies and increased the contract ceiling by $86,951.08 for a total of $146,951.08; and

WHEREAS, the Third Amendment provided for the balance of the upgrade of LAPD's radio system utilizing grant fund monies and increased the contract ceiling by $1,646,439.92 for a total of $1,793,391; and

WHEREAS, the Fourth Amendment provided for communications equipment to be installed at the new Northeast Area station and increased the contract ceiling by $261,515 for a total of $2,054,906 and also provided for a $6,000,000 Contingency fund for future projects related to Scope of Agreement of the Original Agreement, increasing the total contract ceiling to $8,054,906 ; and

WHEREAS, the Fifth Amendment provided for the purchase of logging equipment and services related to LAPD's communications system, utilizing $1,489,436 of the Contingency funds; and

WHEREAS, this Sixth Amendment is necessary to purchase services related to LAPD's Computer-Aided Dispatch system $1,382,422 of the Contingency funds.

NOW THEREFORE, the City and the Contractor agree that the Original Agreement be amended as follows:

1. Section 3.1 – Compensation, is hereby modified as follows:

   A. City shall pay to Contractor as compensation for complete and satisfactory performance of the terms of this Agreement, an amount not to exceed Eight Million Fifty-Four Thousand Nine Hundred Six Dollars ($8,054,906.00), including state and local taxes.

   B. Of the total amount of compensation included in Section 3.1 (A) above, the City will pay the Contractor for services to be performed, and tasks to be implemented as specified in this Agreement and the attached Exhibit 1 – PremierOne CAD/PMDC Project Statement of Work, and satisfactorily performed in accordance with the terms of this Agreement, an amount not to exceed One Million Three Hundred Eighty-Two Thousand Four Hundred Twenty-Two Dollars ($1,382,422.00), inclusive of taxes. The foregoing represents the total compensation to be paid to the Contractor for services to be performed, and tasks to be implemented as specified in this Agreement.

   C. Of the Eight Million Fifty-Four Thousand Nine Hundred Six Dollars ($8,054,906.00) not to exceed amount in Section 3.1 (A) above, Three Million Five Hundred Forty-Four Thousand Three Hundred Forty-Two Dollars ($3,544,342) represents the amounts already paid through the First, Second, Third, Fourth, and Fifth Amendments to this Agreement.

   D. The difference between the amounts specified in Section 3.1 (A) through Section 3.1 (C) above, Three Million One Hundred Twenty-Eight Thousand One Hundred Forty-Two Dollars ($3,128,142.00), is designated as Contingency monies to be dispersed at the sole discretion of the City in accordance with Section 5, Amendments and Change Requests, of this Agreement. The City will not be liable for payment of contingency monies unless the provisions in Section E herein are complied with.

   E. Limitation of City's Obligation to Make Payments to Contractor – Notwithstanding any other provision of this Agreement, including any exhibits or attachments incorporated therein, and in order for the City to comply with its governing legal requirements, the City shall have no obligation to make any payments to Contractor unless the City shall have first made an appropriation of funds equal to or in excess of its obligation to make any payments as provided in said Agreement. Contractor agrees that any services provided by Contractor, purchases made by Contractor or expenses incurred by Contractor in excess of said appropriation(s) shall be free and without charge to City and City shall have no obligation to pay for said services, purchases or expenses.

      As of the date of execution of this Sixth Amendment, funds have not yet been appropriated for the total amount of this Agreement. Contractor

shall not perform work under this Agreement until the City notifies Contractor in writing of the amount and duration of the appropriation or, if it does perform such work, it will do so at its own risk of non-appropriation of funds. Appropriations for work to be performed under this Agreement shall be announced in conjunction with the individual solicitations for proposals in the form of a work order or amendment issued by the Department to perform work under this Agreement.

F. Contractor must notify Department within fifteen (15) business days when eighty percent (80%) of the maximum compensation has been reached.

2. Ratification – Due to the need for the Contractor's services to be provided, should the Contractor provide services prior to the execution of this Sixth Amendment, to the extent that such services are satisfactorily performed, those services are hereby ratified.

3. In the event of an inconsistency between any of the provisions of this Sixth Amendment to Contract No. C-123897, or all prior or current attachments, the inconsistency shall be resolved by giving previous attachments and/or amendments precedence in the following order:

   1) Sixth Amendment through First Amendment to Contract No. C-123897, with the most current amendment having highest order of precedence;
   2) LAPD Contract No. C-123897, and
   3) Standard Provisions for City Contracts (Rev. 03/09).

Except as amended by this Sixth Amendment, all other terms and conditions of the Original Agreement, as amended by the First through Fifth Amendments, shall remain in full force and effect.

This Sixth Amendment includes four (4) pages and one (1) Exhibit and is executed in three (3) duplicate originals, each of which is deemed to be an original. The Original Agreement is hereby incorporated by reference, in its entirety, into this Sixth Amendment.

[Signatures are on the next page.]

IN WITNESS WHEREOF, the parties hereto have caused this Sixth Amendment to be executed by their respective duly authorized representatives.

THE CITY OF LOS ANGELES

By: _____
CHARLIE BECK
Chief of Police

Date: _____

MOTOROLA SOLUTIONS, INC.

By: _____
MARK SCHMIDL
Vice President

Date: _____

APPROVED AS TO FORM:
MICHAEL N. FEUER, City Attorney

By: _____
LAUREL L. LIGHTNER
Assistant City Attorney

Date: _____

ATTEST:

HOLLY L. WOLCOTT, City Clerk

By: _____
Deputy City Clerk

Date: _____

City Business License Numbers: 18 100-004820 1105 1
18 100-001958 1105 1
18 100-000547 1105 1

Internal Revenue Service Taxpayer Identification Number: 36-1115800

Agreement Number: C – 123897-6

EXHIBIT 1

PREMIERONE CAD/PMDS PROJECT
STATEMENT OF WORK

LAPD PREMIERONE CAD/PMDC PROJECT

PROPOSAL FOR CAD MIGRATION

MOTOROLA

15-PS-59678

TABLE OF CONTENTS

MOTOROLA SOLUTIONS

February 10, 2016

Ms. Maggie Goodrich
Los Angeles Police Department
100 West First Street
Los Angeles, CA 90012

Subject: LAPD PremierOne CAD/PMDC Project

Dear Ms. Goodrich,

Motorola Solutions, Inc. ("Motorola") is pleased to present the Los Angeles Police Department the following proposal for upgrade and replacement of your current Premier CAD and NG mobile platform with a PremierOne/PMDC solution. This proposal represents a firm fixed pricing with detailed documentation required by the City of Los Angeles and Motorola Solutions to execute a binding contract.

Motorola is pleased to offer LAPD the latest in public safety software for your dispatch operations. This project description is for a migration from the current Premier CAD system to PremierOne CAD. Motorola wishes to reassure you that we remain willing to provide maintenance and support of the existing CAD system as a subcontractor to Northrup Grumman for as long as those services are needed. Motorola has also offered to include a specifically requested feature enhancement for LAPD in the PremierOne software to be delivered in the first quarter of 2017 at no charge. This enhancement, currently available on LAPD's Premier CAD, will allow users to drag and drop units to the command line.

Motorola has also included PMDC mobile and Advanced Tactical Mobile Mapping applications at a significant discount when bundled with the CAD purchase. The solution offers new capabilities like Mobile Mapping for the officers to achieve enhanced situational awareness and officer safety.

This proposal is valid through March 31, 2016.

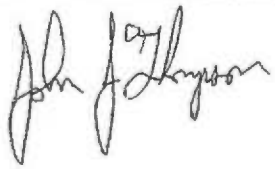
Motorola would also like to discuss a full lifecyle support program for the applications to enable the City of have flat expected opex spend going forward that includes GIS or System Administrator staff augmentation, hardware and software upgrades, training and user conferences.

As the industry's premier supplier of radio communications solutions and advanced public safety applications, Motorola possesses many unique capabilities. Our state-of-the-art technology and successful deployment history allow us to provide effective solutions to your complex business problems while contributing to your organizational productivity and effectiveness.

Motorola Solutions, Inc., Enterprise & Mobility Solutions
6450 Sequence Drive, San Diego CA 92121 U.S.A.

Questions or inquiries may be addressed to Hugh O'Donnell, your Motorola Los Angeles City Account Manager, at 760-333-8179. We look forward to your review and feedback regarding this document.

Sincerely,
Motorola Solutions, Inc.



John J. Thompson
MSSSI Vice President & Director
North America Integrated Command and Control

SECTION 1

TECHNICAL SOLUTION SUMMARY DOCUMENT

1.1 SOLUTION OVERVIEW

Motorola is pleased to present the following solution for you. We believe that no two public safety entities have the exact same needs and this solution has been crafted to address your specific requirements. By leveraging Commercial off the Shelf (COTS) technology, Motorola is presenting a complete technology package built on industry standards and best practices to fulfil your public safety needs. While the products included in this solution have a high degree of flexibility, Motorola has also included the expertise and services of our Project Managers, System Technologists, Solution Architects and Business Analysts to ensure a successful two phased deployment.

At the core of the solution is the Motorola PremierOne CAD application and platform. This powerful platform is based on an Esri GIS engine and is designed from the ground up to be Next Generation ready. Built on a highly available architecture, the failure of a single component does not affect the operation of the whole. Utilizing a services oriented architecture, PremierOne CAD is designed to accommodate interfaces that are deployed once and available to both CAD and Mobile users in order to provide greater information and situational awareness to dispatchers and first responders alike.

PremierOne CAD is a true multi-agency, multi-discipline system capable of providing the configuration necessary to accommodate closest unit response and the support of multiple agencies.

Motorola is also providing a fully redundant, geographically separate, disaster recovery system for deployment in Phase II of the project.

Premier MDC (PMDC) is being offered to meet the capabilities that are required to operate over both low and high bandwidth wireless networks that are available to the City. PMDC is a proven mobile data application that coupled with PremierOne CAD will meet the mobile data needs of the Los Angeles Police Department and any future additional agencies. PMDC will be deployed in a High Availability hardware configuration.

The following applications and services are included in this solution:

Phase I

- Motorola PremierOne
  - PremierOne CAD with Automatic Vehicle Location/Automatic Resource Location (AVL/ARL)
  - PMDC Mobile with Advanced Tactical Mobile Mapping (Server and 550 Clients)
    - High Availability hardware configuration
- Integration and interfaces as specified

Phase II

- Disaster Recovery Hardware and services for PremierOne CAD
- PMDC Mobile with Advanced Tactical Mobile Mapping (950 Clients)

Optional Components

- PremierOne Integrated NG9-1-1 Call Control
- PremierOne Hand Held

1.2 APPLICATION DESCRIPTIONS

The following sections provide brief description of the PremierOne applications and other proposed applications. For more information regarding the PremierOne features, please refer to the product Functional System Descriptions (FSDs), included as separate documents that accompany this response.

1.2.1 PremierOne CAD with AVL/ARL

Since efficient communications coordination is necessary for effective use of field resources, Motorola has designed the multimedia PremierOne CAD application to be the central convergence point for communications from multiple sources and systems, mission-critical information and resource management.

PremierOne CAD helps agencies improve response times, efficiently allocate resources and better inform first responders. PremierOne CAD, a dynamic and intuitive application, utilizes its common services platform to compile and display precise data specific to an agency's workflow.

PremierOne CAD is proven software to manage multiple communications centers, manage multiple agency types, and multiple agencies within agency types. Sophisticated security controls provide the ability to access and control necessary information and features without jeopardizing the integrity and protection of data.

The ability for users to perform functions using a variety of methods allows an easy transition from existing applications to PremierOne CAD. Users can perform commands and functions whether using a mouse, command lines, function keys, shortcuts, or user definable right click menus.

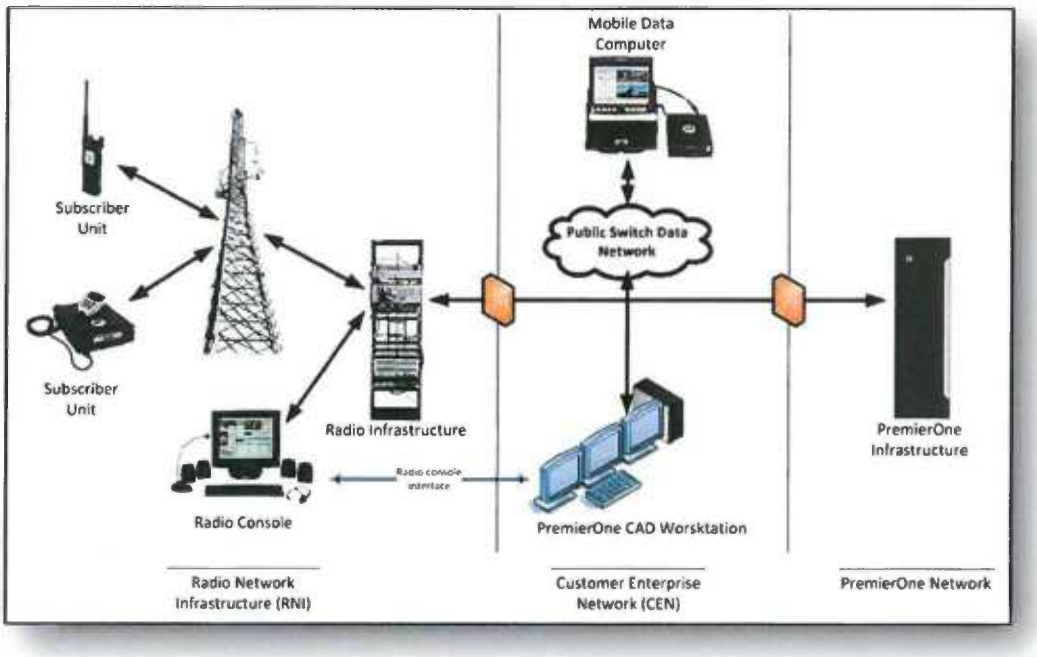
Its highly customizable user interface offers quick access to information via a true location-based, Esri standard GIS map. This powerful GPS-aided resource management tool displays the location and identity of GPS equipped vehicles and, if deploying PremierOne Responder Location, personnel through the use of GPS and data equipped radios enabling a more efficient and coordinated response while further supporting officer safety.

1.2.2 Motorola Radio Integration

PremierOne allows your Motorola ASTRO system to be integrated to CAD. The following sections describe that integration.

With MCC7500 console integration, Push-to-Talk (PTT) IDs to be passed to PremierOne CAD along with Emergency Button activations. Status button assignments allow for status changes, location changes, and/or the adding of disposition to an incident. Channel grouping feature is also accessible within CAD. From a window within the CAD client, the user can use predefined groups or create, manage and maintain their own talk groups. These groups can be activated as multi-selects on the radio console at the discretion of the user. When the group is utilized, the CAD client will show the

status and will allow the user to transmit on all the selected talkgroups. The user can make a priority transmission or may request the use of the talkgroups by alerting the other users with an audible notification. PremierOne CAD also can be provisioned to automatically load a particular channel group based on the geographical location of an incident.



CADICAD: Radio Proxy server

The PremierOne element providing the main radio infrastructure interface is the CADICAD server. This stand-alone Windows Server 2012 application utilizes SQL Server 2012 and provides proxy functions from the Radio Infrastructure to the CAD system. CADICAD can support ASTRO 25 Integrated Voice and Data (IV&D) Conventional as well as Trunking systems. There are three supported interface protocols from the ASTRO systems: CADI, ATIA, Flex ATIA and AIS. ATIA and CADI interfaces are also supported on ASTRO 25 Trunking systems. Motorola has proposed a Flexible ATIA interface for this proposal.

The CADICAD Server will provide 3 types of data from the Radio system to the CAD system. These include specific radio initiated events as follows:

- Non-PTT Events
- PTT Events
- Emergency status

Radio Emergency

The PremierOne CAD system supports notification and display of Radio/MDT Emergency status. An emergency situation can be triggered either by the Radio Emergency button or the Emergency icon on the PremierOne Mobile client. Once the emergency state is activated, an emergency notification will be posted to the units within the same geographic region (Area, Sector, Beat, and/or Zone) as the unit in emergency. All monitoring CAD Clients will also receive an emergency notification (pop-up window) of the event. The emergency event must be acknowledged by the CAD User before the

window will close. The Emergency will be listed in multiple places such as the CAD Client Info Panel, the Unit Status Monitor, the PTT Status Monitor, and the Reset Emergency Indicator (RE) command List on the CAD Client.

When Popup notifications are given for a Unit/Device emergency, they must be acknowledged in order to clear them.

- Clearing an Emergency (RE) for one source clears the emergency state for the whole unit.
- Notification Pop-up windows in the CAD Mobile and CAD Client show the Unit and Logged in User.
- The Unit Status Monitor includes last known location, shows EM status, and turns red.
- PTT Status Monitor shows the radio emergency in red.

PTT

Radio Channels that are to be monitored by CAD and have their status displayed on the PTT Status monitor must be selected by the CAD User using the CT command. This allows for a dispatcher to select only those channels that need to be monitored and may be associated with a dispatcher's coverage area.

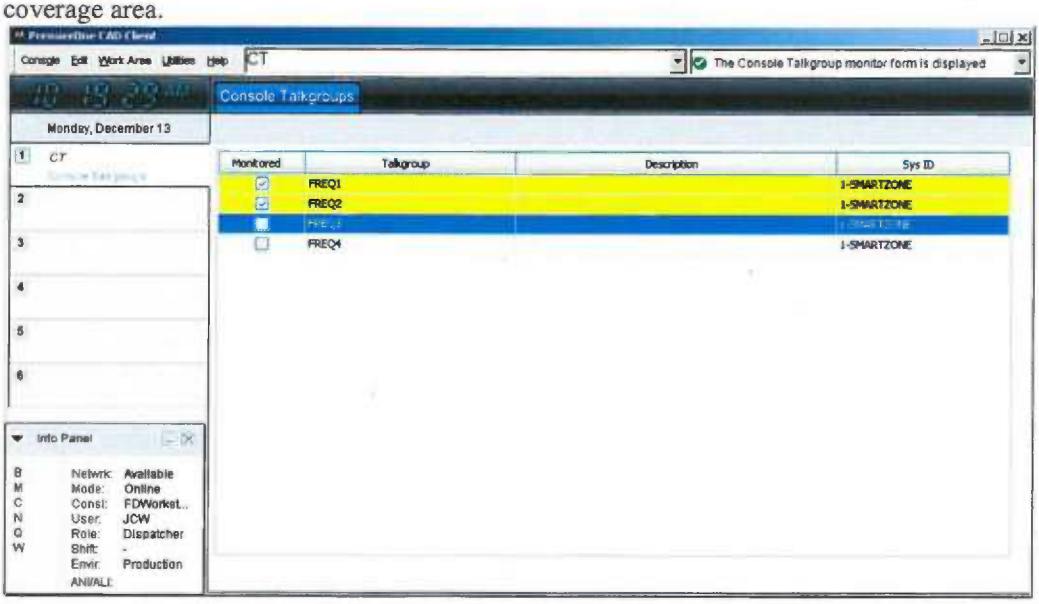


Figure 1-1: CT FORM

Once the channels are selected, enabling the PTT Status Monitor will ensure that all radio traffic on that channel is monitored and displayed.

The "CALLER" listed in the PTT Status Monitor is the highest level identification of the radio sender. This means that if the radio is assigned to a Unit, the Unit ID will be displayed; if the radio is assigned to a Person, the Person will be assigned; if no higher level assignment is made, the Radio Name (alias) will be displayed for the CALLER.

1.2.3 PMDC

Motorola's PMDC software application is a Commercial off the Shelf (COTS), fully configurable system designed for low-bandwidth networks. PMDC is designed on the principles of open architecture for maximum interoperability with PremierOne Common Services. When integrated with

Motorola PremierOne Common Services, it improves dispatch capabilities and facilitates more distribution to users in the field.

Motorola's PMDC solution gives users unprecedented access quickly and securely to information about people, property, and vehicles all from their mobile workstation. Users can receive electronic dispatches, indicate their current status, complete unit-to-unit messaging, and view in-vehicle maps.

1.2.4 Optional Components

1.2.5 PremierOne NG911 Call Control Solution

NG9-1-1 Call Control simplifies incident management in an increasingly complex environment. Today, call takers often must swivel between numerous screens, keyboards and systems to gather all relevant details pertaining to a call. Motorola's PremierOne NG9-1-1 Call Control Solution streamlines and simplifies workflows by integrating call taking functionality with PremierOne CAD. Built from the ground up the application handles voice calls and as an option citizen texts simultaneously. With it, the most common call control functions can be accessed from the NG9-1-1 Call Control interface or PremierOne CAD command line. The integrated solution minimizes keystrokes, reduces errors and speeds response. Now answering a call, creating an incident, dispatching and releasing a call can be accomplished in as few as four keystrokes. With full integration of previously disparate data sources, call takers and dispatchers maintain critical focus by accessing 9-1-1 and CAD controls from one application using a single keyboard and mouse.

The specific benefits that the Optional integrated client solution would provide LAPD are as follows:

- CAD client incident workflow integration

- Client solution supporting NG9-1-1 call taking & CAD that is controlled by a single keyboard and mouse at each call-taking and/or dispatch position

- Increased productivity achieved through streamlined keystroke usage (Single command set and F-keys to control application functionality)

- Enhanced Call Taker/Dispatcher focus at the call-taking/dispatch position(s) to provide increased productivity and reduction in data entry errors

- Single password/log-on for the PremierOne suite (includes call taking and dispatch functionality)

- Combined Call Taking and CAD report generation

- Reduced client training – Single PremierOne framework; Call Control functionality is an increment to PremierOne base training

- Single service provider (MSI) across ICC core applications, e.g. 9-1-1, CAD, radio console delivering a consistent/high quality level of service for the Command/Dispatch Center applications

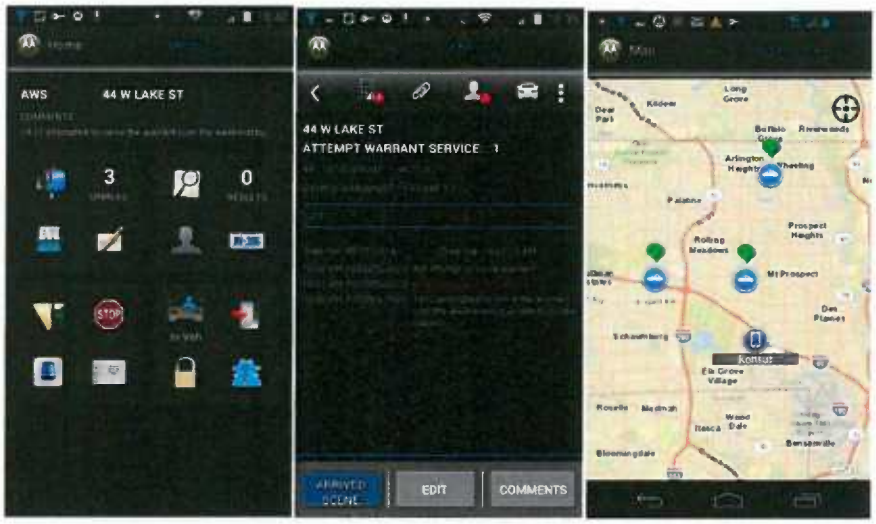
1.2.5.1 Optional Text-to-9-1-1 Capability

The ability to respond to citizen texts to 9-1-1 is a growing expectation that PSAPs will need to address in the near future. With support of the FCC, NENA, APCO and the nation's leading carriers, text-to-9-1-1 capability has moved from a future possibility to a critical capability. In many cases, it is the most reliable way to communicate in a major emergency/disaster or the safest way to call for help

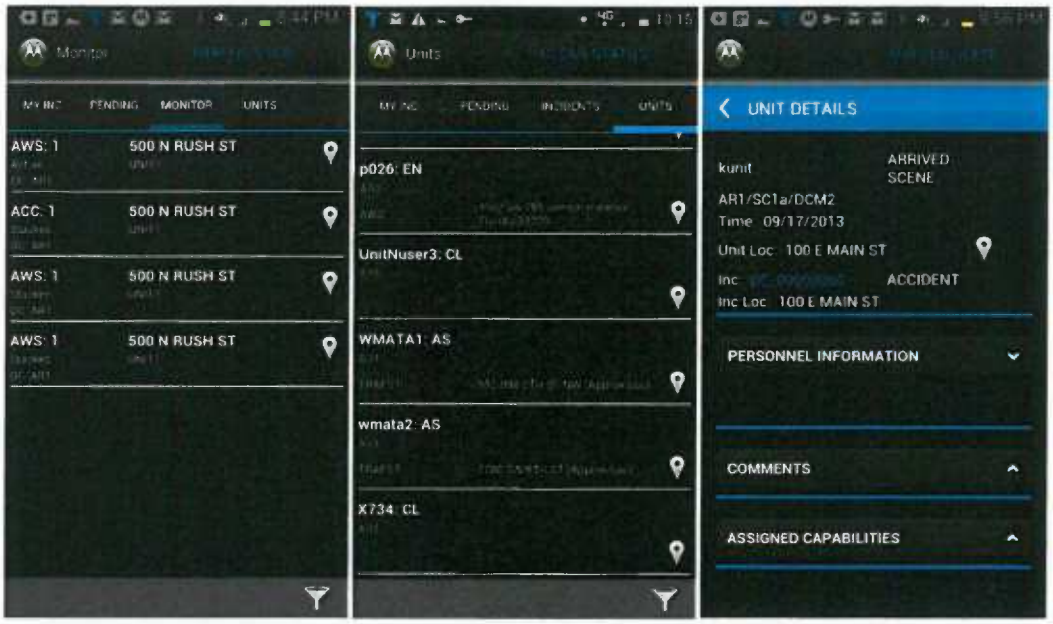
when silent communication is required. Motorola's optional citizen text capability provides a solution for PSAPs to comply with emerging standards and meet the needs of the public by seamlessly integrating text-to-9-1-1 capabilities into their PremierOne NG9-1-1 Call Control and Dispatch solutions.

1.2.6 PremierOne Handheld with Mapping

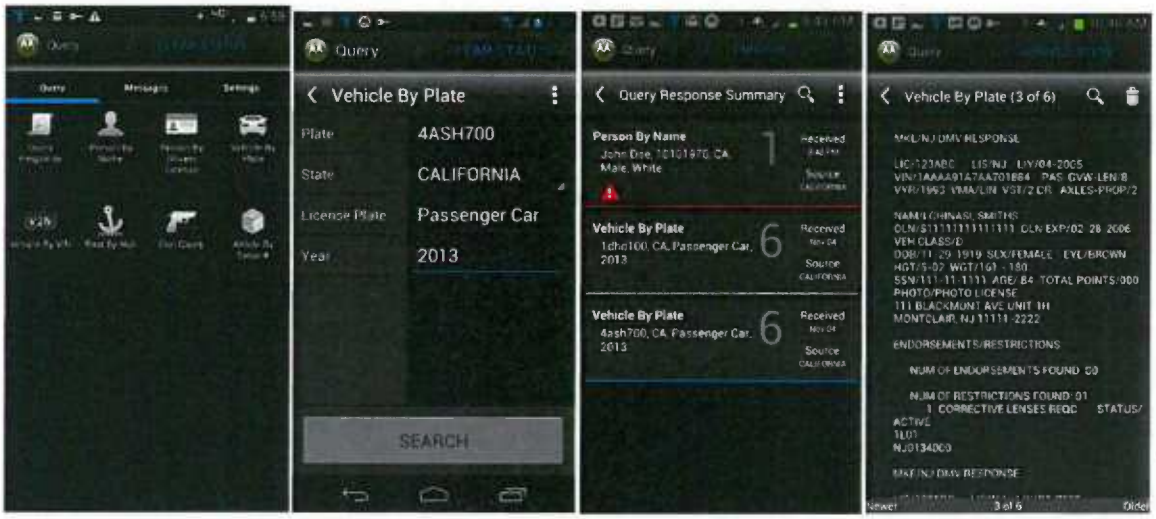
PremierOne Handheld expands the PremierOne Suite to the Android platform including embedded functionality with PremierOne CAD, Mapping and Provisioning. The integrated client is a mobility solution offering the first responder: database look-up/query, messaging, mapping, status updates, status monitoring, and dispatch capabilities on Smartphone and Tablet devices.



PremierOne Handheld's five (5) status monitors allow the Command Staff to have a constant view to active incidents, pending incidents and unit activities in their jurisdiction and beyond. This enables Sergeants, Lieutenants, and Chiefs to keep a pulse on their staff to monitor the operations of the department even when they are away from the office or their vehicles.



PremierOne Handheld offers seven (7) standard queries including the ability to scan a driver's license barcode to submit a person query, plus the ability to cascade queries allowing the officer to enter a plate to get both the vehicle returns and information on the registered owner of the vehicle. PremierOne Handheld also support the CJIS Security Requirements for FIPS 140-2 encryption, two-factor authentication, audit logs, device swipes, and inactivity locks.



PremierOne Handheld delivers a true connected officer solution providing officers situational awareness such as previous incidents, premise and hazard information, location of other officers, Geofencing, and critical incident updates in the palm of their hand.

- Android 4.0.3 or higher smartphone or tablet devices
- Data Network with 4G coverage
- Static IP address

- CJIS Requirements call for a Mobile Device Management (MDM) Tool. SOTI MobiControl is included in our proposals. Alternative MDM tools may be used if desired, but require certification testing with PremierOne Handheld.
- RSA can be sold as an option if needed for two-factor authentication
- Motorola is supplying 20 licenses of PremierOne Handheld to LAPD. LAPD can then evaluate PremierOne Handheld against the Motorola Pilot Demo Servers and determine how they will be operationally deployed within the department. Optional pricing has been provided for 100 PremierOne Handheld licenses and costs for deployment configuration and training.

1.3 SYSTEM ARCHITECTURE

PremierOne is architected around a hardware agnostic enterprise level virtualized server configuration. Motorola supports Microsoft Server 2012 R2 Hyper-V and VMware vSphere 5.1 (or later) for the hypervisor.

Virtualization as implemented in the PremierOne solution lowers the total cost of ownership by simplifying the overall system administration. Server virtualization allows you to maximize the use of your hardware while also providing application isolation. Application isolation is the ability to isolate specific services for ease of diagnostics and hardware resource management.

Motorola's PremierOne suite of applications is built with the principles of Service Oriented Architecture (SOA) allowing separation of servers and services to modular components. This separation provides for:

- Faster performance
- Secured connectivity
- Increased service availability and uptime

PremierOne features integrated security throughout, as access and connectivity is provided only when needed. All CAD call data communicated between the client and server is encrypted to FIPS 140-2 compliance.

Due to its redundant components PremierOne has no single point of failure. Moreover, the PremierOne software design is also redundant, as database replication occurs across multiple servers. The entire solution is built on proven industry standard components from Microsoft .NET architecture using Microsoft Windows and Microsoft SQL Server.

PremierOne's tiered approach allows for scalability as your needs grow. The system can be expanded through the allocation of additional physical or logical resources, with additional application, database, and operations management servers. Plus, with the additional site-to-site replication, a multi-site architecture with disaster recovery has been included.

PremierOne's leveraging of SOA and virtualization simplifies your deployment and maintenance, while enhancing PremierOne's reliability, scalability and reducing Total Cost of Ownership.

1.3.1 PremierOne High Availability

Motorola has engineered PremierOne's logical architecture to be highly available. This high availability is independent of a geographically redundant disaster recovery solution. Software fault tolerance has been built into the core of PremierOne. PremierOne's active monitoring identifies problems and failures before they occur. For example, low disk space or high processor utilization will trigger an alert to be sent, to notify the recipient of a possible problems or future failure before it

affects the system. During deployment, notifications are configured to be sent using your mail or mail relay server.

Application and database failovers operate independent of one another within PremierOne. This means that an application server failover does not require a database server failover. Likewise, a database server failover does not require an application server failover. In the event of a service or component failure, PremierOne will stop using the failed service or component instance. PremierOne will then automatically shift over to the secondary service or component instance without impacting operations.

The table below depicts the fault tolerant software components of the system and the type of fault tolerance within each data center.

Table 1-1. Fault Tolerant Software Components

Software Component	Type
Windows Server 2012 network load balancing (NLB) services to provide load balanced network traffic to the application services. • Proactive Component PremierOne monitors active services and restarts them as necessary. • Reactive Component In the case of a server failure, the node is disabled transferring the load to the remaining servers in the NLB cluster.	Reactive and Proactive
Replicated databases across database services on different servers. Servers are replicated in a cluster set. • Reactive Component In the case of the active database server's failure, the system transitions the inactive server to an active status without interruption.	Reactive
NIC teaming on the servers to provide fault tolerance across multiple network adapters. • Proactive Component If the Operating System detects unexpected behavior, such as the loss of heartbeat or loss of link, in one NIC, it will send all packets out the teamed NIC. • Reactive Component If a NIC fails, the Operating System will send all packets out the teamed NIC.	Reactive and Proactive
SQL Server 2012 R2 Always On to provide automatic fail-over. • Reactive Component In the case of a database server failure, there is no user intervention required. The clustered database becomes the active database without administrator intervention and continues processing transactions within the data center	Reactive

Software Component	Type
Redundant operations servers in a fault tolerant configuration. • Reactive Component Servers are configured in a NLB cluster. If one server fails, the load is transferred to the remaining servers in the NLB cluster within the data center.	Reactive
PremierOne System Manager monitoring: • CAD application • Interfaces • Network Load Balanced (NLB) cluster • Application failover • Database failover	Reactive and Proactive

The backup service (tape library and tape backup software), the Report Data Warehouse (ad hoc reporting services), and the Test/Training environments are not considered critical and are therefore not designed to meet the same high availability requirements as the production application and database servers.

1.3.2 Disaster Recovery (DR) – Phase II

1.3.2.1 DR / Failover solution

Motorola's solution includes a redundant, geographically diverse, disaster recovery/failover solution, including hardware, in an active/active "Hot Standby" configuration. Under normal operation, the primary data center is actively operating while the disaster recovery data center is in standby but, is being constantly updated. Upon the need to transition operations to the disaster recovery data center, the primary data center is placed in standby while the disaster recovery data center becomes active. The transition or failover of services between the primary and disaster recovery data centers is managed by the system administrator.

1.3.2.2 Process

PremierOne Systems Management software will monitor the health of the primary data center. The system management console will raise appropriate alerts when an error condition occurs. The system administrator will review the alert and determine if initiating a site failover to a backup location/server is necessary. Most alerts will be resolved without a need for a site failover.

If the severity of the fault warrants a failover, the administrator or supervisor (with appropriate rights) can initiate a site failover from the system management console without end user intervention; except for logging off and logging back into the application. The failover script includes the steps necessary to activate the standby site for use as the active site. A step-by-step disaster recovery process and user guide is provided with other system documentation during deployment. Please note that the System Management console addresses the failover of the PremierOne solution and any network infrastructure modifications, such as DNS pointer updates, are performed outside of the PremierOne System Management console.

The failover to the backup location/server includes the execution of the following actions:

- Disaster Recovery data center will assume the identity of the failed primary data center.

the PremierOne system, you must configure the City's DNS servers to forward PremierOne name resolution requests to PremierOne DNS servers. This will allow devices on the City network to find systems within the PremierOne environment.

For tighter integration in the other direction, your system administrator, working with Motorola, must configure the DNS servers to allow name resolution requests from within the PremierOne systems to be processed.

1.3.4 PremierOne Common Services

PremierOne Common Services is the foundation of Motorola's Service Oriented Architecture (SOA) providing the PremierOne system and system administrators the flexibility to manage internal services throughout the platform from a single point. PremierOne Common Services include GIS, System Security, Reporting, and the system tools for provisioning.

1.3.4.1 Geographic Information System (GIS)

- PremierOne uses the power of GIS for display, location validation, and unit recommendation. Through PremierOne tools made available for ArcToolbox, you can load local data manually or through an automated model, making sure that the most up-to-date data is available to the entire PremierOne Suite.
- The PremierOne Response Boundary query is an example of how PremierOne CAD ensures high performance. Deployments that support multiple jurisdictions typically maintain response boundaries in multiple layers. The PremierOne Response Boundary Data Import Tool imports and aggregates these features into a single spatial table within the PremierOne Geodatabase. This allows the system to perform a single spatial intersect query instead of multiple spatial queries against each individual response layer. Not only does this save time in terms of command execution, it allows the user to determine all possible response boundaries for an incident's location after verifying the call location and before entering the incident. Once an incident type is entered, the CAD Client simply iterates through the collection of agency/beat information returned during the background request to find the response of an agency associated with the incident type.
- GIS data is a key component of a PremierOne deployment and one that is required for PremierOne CAD. GIS provides the mechanism for location validation and recommendation for response. A well constructed and geographically accurate Geofile is required for the proper operation of PremierOne. It is your responsibility to provide a complete and accurate Geofile for use in PremierOne. If desired, Motorola can provide Geofile build and/or Geofile preparation services.
- It is important to note that proper Geofile data must exist in all areas for which incidents will be created. Each agency being added to PremierOne must have their geographic coverage included in the Geofile imported into PremierOne.
- The GIS data requirements for PremierOne are identified in Section 6: PremierOne Geographic Information Systems (GIS) Requirements.

1.3.4.2 System Security

- The PremierOne Suite is deployed within its own Microsoft Active Directory (AD) domain in its own local area network. Active Direction Domain Controllers authenticate and authorize users to perform actions within the domain making sure authorized users have appropriate access to data and services. The PremierOne user provisioning environment can be setup to query your AD

environment (using LDAP) allowing for a single point of user and password management across all applications.

- The PremierOne network contains multiple virtual local area networks that are used to secure and segment traffic for purposes of user access as well as data storage and replication. In this way, traffic is protected and dedicated to provide network efficiency and security.
- Further, the PremierOne Suite architecture resides behind dual redundant firewalls to protect the PremierOne network from unauthorized intrusion and security threats. These firewalls are provisioned in a high availability configuration so if either of the two fails, traffic and security will remain intact across the other.

1.3.4.3 Microsoft Reporting Services

PremierOne uses Microsoft SQL Server 2012 Reporting Services (SSRS) for reporting purposes. SQL Server 2012 Reporting Services is a server-based reporting platform that is used to create and manage tabular, matrix, graphical, dashboards, and free-form reports that contain data from relational and multidimensional data sources. The reports can be viewed and managed over a World Wide Web-based connection. Reporting Services include the following core components:

- A complete set of tools that can be used to create, manage, and view reports.
- A Report Server component that hosts and processes reports in a variety of formats. Output formats include HTML, PDF, TIFF, Excel, and CSV. The Report Server also supports the ability to generate graphical reports including dashboard components.
- Report scheduling with email delivery.

Visually and functionally, the reports that may be built in Reporting Services surpass traditional reporting by including interactive and Web-based features. Some examples of these features include drill-down reports that enable navigation through layers of data; parameterized reports that support content filtering at run time; free-form reports that support content in vertical, nested, and side-by-side layouts; links to Web-based content or resources; and secure, centralized access to reports over remote or local Web connections.

Some of the other advantages of leveraging this technology within PremierOne include the following:

- Central Manageability - Report management, processing, and delivery are handled from one central location, providing increased consistency and improved performance throughout the reporting process
- Scalable, Enterprise-Wide Delivery - On-demand report delivery may be enabled and event-based report distribution may be deployed. The automation of effective delivery of real-time information helps drive better decisions for users across the entire suite.

1.4 TECHNICAL ASSUMPTIONS AND DESIGN REQUIREMENTS

1. Motorola's solution is for the PremierOne server hardware, PremierOne server networking hardware, PremierOne application software, PremierOne client software, PMDC licensing, message switch hardware and interfaces.
2. The Customer will supply Windows Server 2012 R2 Client Access Licenses (CALs) for all CAD, Mobile, client devices accessing PremierOne CAD.
3. The Customer will supply Mobile Device Management (MDM) software for Handheld devices.

- Clients access the PremierOne application servers by host name. In order to transition clients from the primary data center architecture to the disaster recovery data center architecture, the City will need to update DNS service pointer records to reflect the IP address of the disaster recovery data center. Alternatively, a script can be run on the clients to update the hosts file to point to the disaster recovery data center architecture.
- The PremierOne database servers at the disaster recovery data center will be made primary and will start processing the client requests. This process may take up to 15 minutes.
- The PremierOne application servers at the disaster recovery data center will be made active and will start accepting the client requests.
- The PremierOne application services are in a stopped state at the disaster recovery site during normal operation. These services are started using the Disaster Recovery failover process and associated failover script.
- The PremierOne database servers at the disaster recovery data center will be made active and will start processing the client requests.

The following steps will implement a fall back to the primary data center:

- Primary data center will resume role as primary data center.
- Clients access the PremierOne application servers by host name. In order to transition clients from the use of the disaster recover data center architecture to use of the primary data center architecture, the City will need to update DNS service pointer records to reflect the IP address of the primary data center. Alternatively, a script can be run on the clients to update the host file to point to the primary data center architecture.
- The PremierOne Database servers at the primary data center will be made primary and will start processing the client requests. This process may take up to 15 minutes or less depending on the City's network infrastructure.
- The PremierOne application on the primary application servers will be made active and will start accepting the client requests.
- The PremierOne application services are in a stopped state at the primary data center during disaster recovery operation. These services are started using the Disaster Recovery failover process and associated failover script.

1.3.3 Microsoft Active Directory Service

The PremierOne solution provides directory services through an isolated Microsoft Active Directory environment to support the secure management and operations of PremierOne. All servers provided with the solution will contain computer accounts in this Active Directory. Administrator user accounts and groups will be setup in Active Directory with the appropriate group memberships set. In order to facilitate ease of user account management, PremierOne can use the City's AD environment for authentication. Once the user account is built in PremierOne provisioning, it can then use LDAP to query the City's environment for the account authentication. By using this configuration, the City can enforce password policy, retention, and complexity requirements across the enterprise with a user having a singular identity.

1.3.3.1 Name Resolution

PremierOne provides host name resolution through an Active Directory integrated Domain Name Service (DNS). In order for systems residing outside of the PremierOne network to communicate with

4. The Customer will supply Mobile Device Management (MDM) software for Mobile laptop devices, if desired.
5. The Customer will supply workstation hardware, mobile workstation hardware, operating systems, and all other software not included in this solution.
6. Motorola's hardware solution provides the most up-to-date configuration available at the time of proposal submittal. The hardware identified in this solution may be subject to change. As technology continues to advance, Motorola will take advantage of new and different offerings for the betterment of the Customer.
7. The Customer will provide a single geodatabase including any preparation and/or editing, if necessary, to meet PremierOne Geofile Build Requirements for the purpose of address validation.
8. The Customer will supply Esri ArcGIS Desktop and Network Analyst extension software for Customer editing of GIS data.
9. The Customer will provide wireless connectivity and middleware to deliver mobile Virtual Private Network (mVPN) with routing and static IP addressing to the PremierOne network for PMDC.
10. The Customer will be responsible to ensure that both the Motorola PMDC mobile data client and the existing Los Angeles Police Department Northrop Grumman mobile data client can co-habitate (installed) on the same mobile laptop as the migration from the NG mobile to PMDC occurs.
11. The Customer will provide, advanced authentication, for Mobile device connectivity if required.
12. The Customer will provide a site adequate for the installation, housing, operation, and maintenance of all equipment. The space provided must be able to contain the entire rack dimensions as specified in Site Requirements, Section 1.4.4.
13. The Customer will provide the appropriate power connectivity, power distribution units, and power to the system in the designated installation location. The anticipated quantity and type of connectivity as well as the power draw of the system have been identified in Site Requirements, Section 1.4.4. The final system specifications will be provided during deployment as part of the hardware ordering process.
14. The Customer will provide adequate active cooling and humidity control for the designated installation location. The cooling requirements and the operating temperature range of the system have been identified in Site Requirements, Section 1.4.4. The final system specifications will be provided during deployment as part of the hardware ordering process.
15. The Customer will provide installation and grounding of the Spectracom NetClock GPS antennas and feed line.
16. The Customer will provide network connectivity to clients as specified in the Network Requirements, Section 1.4.3. Motorola has included network hardware for the PremierOne server architecture. Networking hardware for the connectivity outside the PremierOne LAN must be provided by the Customer.
17. The Customer will provide a network diagram depicting all the devices, device types, and interfaces that the PremierOne system will connect to and through, including, but not limited to all blocked ports, hubs, switches, routers, firewalls, and any other network equipment.
18. The Customer will provide IP addresses on the Customer's network for the PremierOne Servers and third-party application servers.
19. The Customer will provide external interface connection demarcation points at locations agreed to by Motorola. These locations shall normally be adjacent to the PremierOne equipment rack.

20. The Customer will provide electrical power receptacles, and any other receptacles required within manufacturer recommended cable run lengths of the equipment and all supplemental components.
21. The Customer will provide access, administrative or otherwise, to appropriate systems, locations, information, tools, and equipment to ensure proper connectivity, installation, operations, and maintenance of the system.
22. The Customer will provide any software as required for anti-viral, anti-malware protection by the Customer for installation on the system. If the software requires connectivity to a central server for maintenance and updates, the connectivity including ports and access needs to be provided.
23. The products included in this solution are COTS. The feature enhancement of "dragging and dropping a unit to the command line" will be added to a standard release in the future; no other software customization is included in this solution.
24. Motorola is supplying 20 licenses of PremierOne HandHeld to LAPD. LAPD can then evaluate PremierOne HandHeld against the Motorola Pilot Demo Servers and determine how they will be operationally deployed within the department. Optional pricing has been provided for 100 PremierOne Handheld licenses and costs for deployment configuration and training.
25. Motorola does not guarantee feature and functionality parity between Premier CAD and PremierOne CAD or PMDC and the existing Northrop Grumman mobile application.
26. Motorola's solution includes services for tailoring a single PremierOne CAD User Interface (UI) and a single PMDC Mobile Custom Pack. Should additional UI tailoring be necessary (i.e. different agencies or different disciplines), additional services may be required and costs associated with those services are the responsibility of the Customer.
27. The PremierOne version being provided is a minimum version of R4.2.
28. Motorola's solution has been sized based on the following usage scenario. This may differ from the license count provided:
    A. 6M CAD Calls for Service per year (2M 911 & 4M Officer Initiated)
    B. 170 PremierOne CAD concurrent users
    C. 800 concurrent Devices regardless of type that report GPS position at a 30 second cadence.
    D. 3% annual growth for 5 years
    E. 5 years of PremierOne CAD data retention (2 years online, 5 years reporting)

1.4.1 System Configuration

The following diagrams present a logical illustration of the solution components.

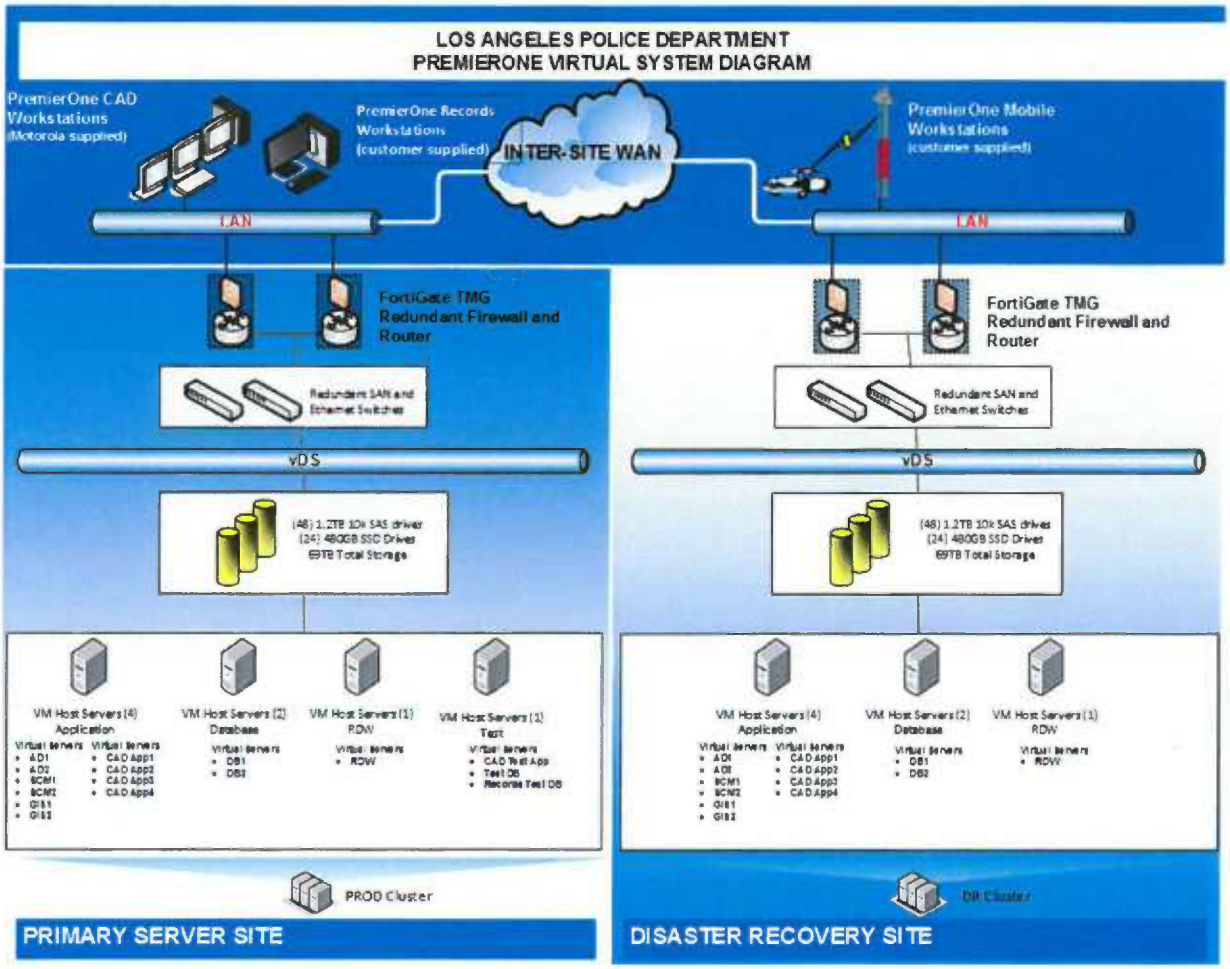


Figure 1-2: System Diagram

The configuration consists of PremierOne servers and storage area network (SAN) with a geographically separate disaster recovery site. The PremierOne architecture is provisioned in a high availability configuration so that the failure of a single server does not impact operations.

The application servers are provisioned in a Network Load Balancing (NLB) cluster that spreads the server workload during normal operations. In the event that one of the application servers fails, NLB automatically redistributes the workload among the remaining servers. Meanwhile, PremierOne attempts to restart the failed service(s) on the failed application server. Upon a successful restart of the service(s), the application server rejoins the cluster. If restarting services does not remedy the failure of the application server, the server is issued a reboot. This process is transparent and occurs without user intervention.

The database servers are clustered using SQL Server 2012 AlwaysOn technology. In the event of a failure of the primary database server, the synchronous replication partner automatically starts processing database transactions.

Motorola provides dedicated reporting servers. The reporting servers allow users to perform complex report queries without impacting the performance of the CAD system. The data on the reporting servers is batch updated as updates occur on the live CAD server. Data from the production environment is sent to the reporting server every thirty (30) seconds.

One instance of test and training application and database servers are included for PremierOne CAD. The test and training environment will have access to interfaces if test interfaces are made available by you. The deployment of one test interface will be provided for each interface included in the solution.

1.4.2 Motorola Provided System Platform and Components

This section discusses the hardware, operating system, and system software that Motorola will provide.

1.4.2.1 PremierOne Servers

Motorola's hardware solution utilizes HP blade servers as physical hosts to offer a high-density configuration with robust and flexible management capabilities. Motorola architected the PremierOne solution to operate on HP c-Class Blade Systems, as these systems provide many integrated redundant components, ease of management, and efficient power management and cooling.

The following two sections describe components of the c-Class Blade System that are part of Motorola's solution design.

Blade Enclosure

The entire blade system is housed within a HP BLc7000 blade enclosure. Included with the enclosure are a quick view diagnostic LCD panel on the front, a gigabit switch for the various VLANs, the backbone of the system network between the server blades, and remote management of the enclosure.

Host Server Blades

Host servers are HP BL460c G9 server blades configured with:

- Dual Octa-Core Intel® Xeon® E5-2667v3 processor, running at 3.3 GHz, with a 25MB L3 Cache
- Each server blade also contains direct attached storage in the form of two 300GB 10,000RPM SAS hard drives in a RAID configuration
- Four 1 Gigabit network ports
- Each server is configured with 256GB RAM.

1.4.2.2 Ancillary Components

In addition to the server components listed above, PremierOne also contains supplemental components. These components access the software on the system servers and provide temporary transitional power to PremierOne in case of power failure and fluctuations.

The following sections detail each of these supplemental components.

Keyboard and Monitor

Motorola will supply a rack-mounted keyboard and monitor. The HP Rack Model 10642 G2 with rack mount keyboard and monitor provides direct console access to the servers. This keyboard and monitor are typically used only used when a technician is working directly with the hardware in the rack; system and application software maintenance is normally performed remotely.

Server Rack

The server solution at a site is housed in a single HP 10642 G2 42U rack. The various components of the system will ship in the rack. The physical specifications of the rack are:

- Total Cabinet Dimensions
  - 78.9 in. x 39.7 in. x 24 in.
- Shipping Dimensions (with packaging materials)
  - 86.2 in. x 48 in. x 35.6 in.
- Installed Weight
  - 253 lb – Rack
  - 1682 lb – Equipment
  - 1935 lb – Total
- Shipping Weight
  - 2085 lb – Total
- Maximum Load of Rack
  - 3000 lb

Also included for deployment in the rack are HP 4.9kVA 208V power distribution units for powering various components of the system, and a sliding shelf for ease of use within the rack.

Note: It is the responsibility of the City to provide any specialized hardware and installation to ensure compliance with any local, State or Federal natural disaster safety regulations.

Rack Clearance Requirements

- Front: 48 inch
- Back: 30 inch

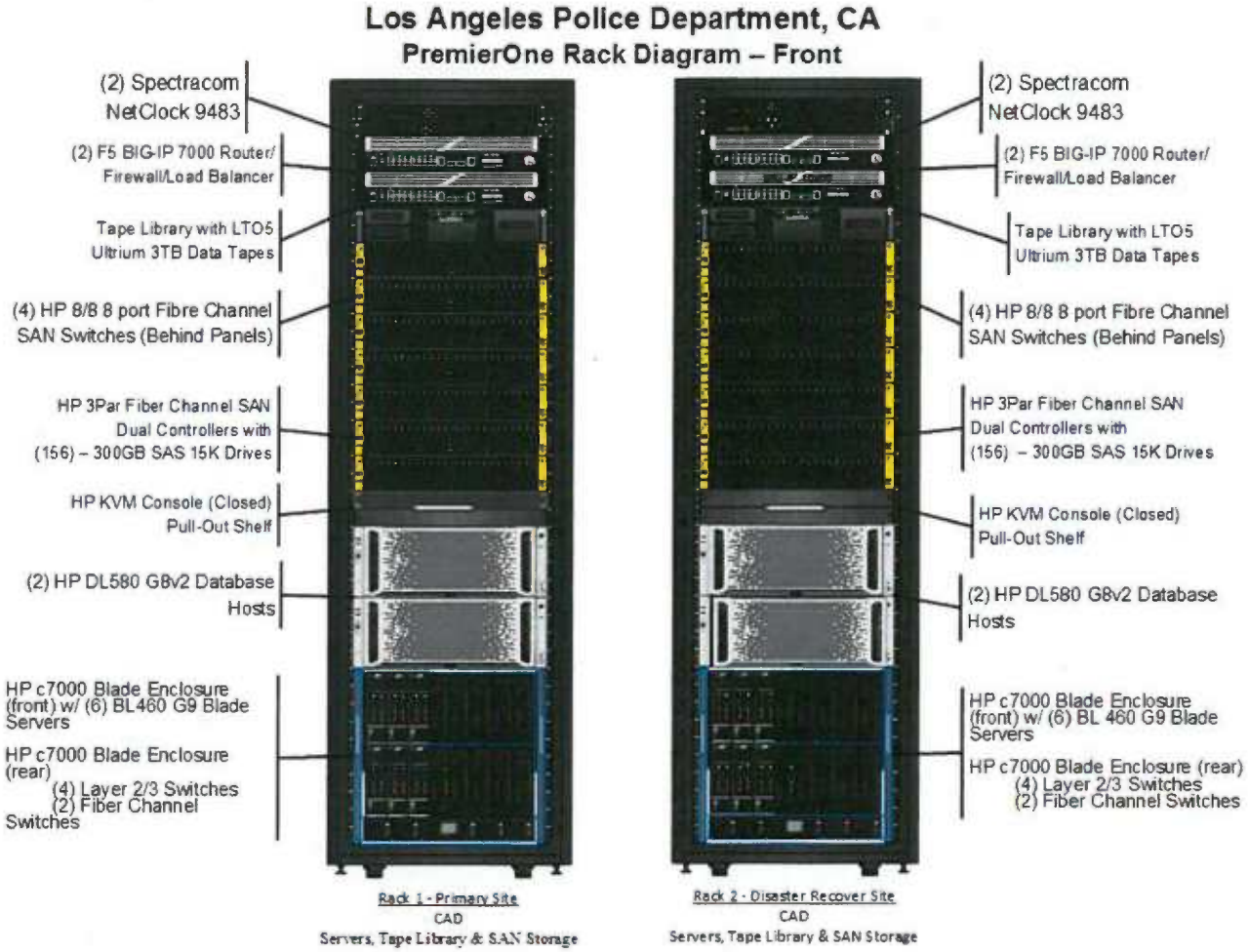


Figure 1-3: Hardware Rack Layout Primary Site

Note: This is a representative diagram only final configuration will be determined during system staging and is subject to change.

1.4.2.3 PremierOne Storage and Backup

PremierOne's Backup and Recovery subsystem includes online storage and a means to backup the system offline through HP Storage and Tape Arrays.

Motorola provides storage area arrays that are utilized by the host servers for storage and for online backups with near real-time data recovery. The HP 3PAR 7200 Series with Dual Controller Array Storage Area Network (SAN) contains 300 (GB) 15K RPM hard drives. Data is also replicated to the SAN at the disaster recovery site using SQL Always On replication to ensure its availability in the event of a failure of the primary data center. This replication processes transactional changes from the production environment to the Disaster Recovery environment. The rate at which data is transferred is dependent upon the available bandwidth and network latency between data centers.

Tape Backup

The PremierOne solution includes a tape drive and library. The tape drive and library provide a means of backing up data to external media which can be taken offline and offsite. The HP StorageWorks MSL2024 Library is controlled by an application server running HP Data Protector software for the purposes of application and database server backup and recovery. This solution provides the ability to back up 36TB of raw data and 72TB of compressed data. In addition, this tape backup solution provides mechanisms for data encryption for offsite storage as needed. The solution also includes data cartridges to be used for backup and a tape-cleaning cartridge.

HP Data Protector 9.0

HP Data Protector Software automates high performance backup and recovery, from disk or tape, over unlimited distances, to enable 24x7 business continuity and improve IT resource utilization. HP Data Protector is integrated with the HP StorageWorks disk and tape family of products. Data Protector Software simplifies the use of complex backup and recovery procedures with the fastest installation, automated routine tasks, and easy-to-use features.

Backup schedules are dependent upon your tolerance for data loss balanced with performance. Motorola will work with you to set proper backup intervals and recommends a starting point of one full backup each night, a differential backup once each day but twelve hours after the full backup, and transaction log backups every fifteen minutes.

1.4.3 Network Requirements

Motorola's solution requires the TCP/IP protocol for connectivity. All servers and workstations will connect to your existing network. You will need to provide access to facilities and a dedicated resource knowledgeable on the your WAN/LAN. Network bandwidth has been determined by the transaction volume and size of incidents and records.

PremierOne CAD Network Requirements

PremierOne is dependent on your LAN for client workstation performance. The estimated network requirement per CAD client with typical usage is 0.8 Mbps – 1.2 Mbps. The recommended built-to bandwidth for new deployments is 2.0 Mbps per workstation. Peak load events (e.g. login) require higher bandwidth and higher bandwidth will generally be required for sites with higher quantities of users and greater data intensive operations such as complex map annotation sets and map manipulation if the data resides on the server. The bandwidth recommendations account for the operation of the LAN client to not exceed the values with the map data being stored locally on the client workstation. Additional bandwidth will be required for the transfer of large multi-media files, premise hazard data files and other large attachments. Network latency plays a key role in the responsiveness of CAD client operations. PremierOne has been designed for optimal use on a local network environment where latency is very low (5ms round-trip). For this reason, it is important that efforts be made to provide the lowest latency possible between the PremierOne CAD servers and each PremierOne CAD client. PremierOne requires latency of no greater than 20ms round-trip from the client to the servers and back.

PMDC Mobile Network Requirements

PMDC is designed for legacy low bandwidth networks. A minimum of 19.2kbs can be supported without the use of multi-unit display and chat. 3G network connectivity is highly recommended where possible for full functionality. A high speed wireless LAN is highly recommended for application maintenance. You will need to provide a wireless network infrastructure and connectivity with routing between the Mobile clients and the primary and disaster recovery data centers. Mobile workstations require a static IP address which will need to be supplied.

Network Bandwidth Calculations

The following bandwidth specifications are required for system performance and have been calculated based on the custom solution provided for you. These figures represent the requirements needed to accommodate the environment. Also provided are bandwidth specifications after 5 years of annually compounded growth of 5% resulting in up to 217 client workstations. As this is a recommendation, the values represented have been rounded up.

Table 1-2. Network Bandwidth Calculations

Bandwidth Specifications for Year 1 Assuming 185 CAD Clients

CAD Client to Server Bandwidth (typical range of 0.8Mbps to 1.2Mbps)	148 to 222	Mbps
CAD Client to Server Bandwidth (recommended bandwidth of 2Mbps)	370	Mbps
Disaster Recovery Bandwidth (site to site)	180	Mbps

Bandwidth Specifications for Year 5 Assuming 217 CAD Clients

CAD Client to Server Bandwidth (typical range of 0.8Mbps to 1.2Mbps)	174 to 261	Mbps
CAD Client to Server Bandwidth (recommended bandwidth of 2Mbps)	434	Mbps
Disaster Recovery Bandwidth (site to site)	277	Mbps

1.4.4 Site Requirements

1.4.4.1 Environmental Considerations

In preparation for the installation and deployment of PremierOne servers, the data center requirements stated in the following sections must be satisfied. The data center requirements specify what you must perform, provide, or ensure in order to prepare for and aid with the solution deployment.

Included in the data center requirements are various environmental considerations for the servers and supplemental equipment, power and network connectivity, access to various information and resources, and compliance with laws and specifications.

Power Requirements and Heat Output

The following tables provide representative examples of the power utilization, heat output, and the temperature ranges for the various components of the PremierOne system and the electrical circuits needed by the overall system. It is important to note that these numbers represent an estimate only. This table will be updated for you after project kickoff and the hardware list has been finalized.

Table 1-3. Power Requirements and Heat Output

Component	Max Total Power (Watts)	Total Heat Generation (BTU/hr)
PremierOne Rack	5231	16458

It is not recommended to follow an intuitive approach to design cooling, or attempting to achieve an energy balance – that is, summing up the total power dissipation from all of the hardware. The HP servers utilize semiconductors that integrate multiple functions on a single chip with high power densities. The combination of high-power, high-density mass storage and power supplies, and the high concentration of devices in a server rack results in localized heat, and increases the potential for hotspots, which can damage the server equipment.

Cooling airflow through each server rack enclosure is front-to-back. Because of high heat densities and hot spots, you must ensure that an accurate assessment of airflow into and out of the server equipment has been performed. This is essential for reliable server operation.

Table 1-4. Temperature and Humidity Ranges

Specification	Operating
Temperature Range	50°F to 95°F
Relative Humidity Range	20% to 80% (non-condensing)

Circuit Requirements

The PremierOne racks require a specific type of connector due to the type of equipment housed in each rack. The power circuit requirements for each PremierOne server rack are contained in the table below.

Table 1-5. PremierOne Server Rack Circuit Requirements (per rack)

Voltage (VAC)	Dedicated Branch Circuit rating (A)	Quantity	Line Cord
208	30	4	NEMA L6-30P

1.4.4.2 Site Readiness Checklist

This document specifies a number of requirements to successfully deploy the solution. To assist you in preparation for the solution, requirements are summarized in the checklist below. This list may be used to confirm that any site changes have been performed prior to the installation of the system.

Table 1-6. Site Readiness Checklist

	Site Readiness Requirements	Evaluation	Pass	Fail	Unknown
1	The site readiness checklist to be reviewed with the City and all parties understand the site requirements.		❑	❑	❑
2	A site walk-through to be conducted at the time of project kickoff.		❑	❑	❑
3	The Site provides adequate space for the installation, operation, and maintenance of all computer server(s), workstation(s), and related peripheral equipment.		❑	❑	❑

	Site Readiness Requirements	Evaluation	Pass	Fail	Unknown
4	Space as specified in the rack clearance requirements is provided to allow room for installation and maintenance of components. Proper grounding must be made available for equipment bonding.		❑	❑	❑
5	Procedures are understood and documented to ensure acceptable site access at all facilities and locations for equipment installation and system testing.		❑	❑	❑
6	Information specific to the existing the City LAN / WAN architecture and configuration to be provided by the City, including network details for all components (workstations, printers, servers, interfaced systems, etc.) connecting to the PremierOne system.		❑	❑	❑
7	The equipment room to be supplied with the required power outlets and circuit counts as specified in the Circuit Requirements.		❑	❑	❑
8	UPS and/or generator must have the required capacity, voltage stability and frequency stability for the equipment to be installed.		❑	❑	❑
9	Supplied power to equipment meets the power and heat output specifications of the solution.		❑	❑	❑
10	Sizing of A/C cooling meets the specifications of the solution.		❑	❑	❑

	Site Readiness Requirements	Evaluation	Pass	Fail	Unknown
11	Installation of all communication lines, modems, switches and routers, cabling, equipment and other components necessary for system operation and maintenance that are not identified as deliverable products by Motorola. All lines are terminated at demarcation points at locations agreed to with Motorola.		❑	❑	❑
12	Communications lines at remote sites are terminated at extended demarcation points within each facility. These extended demarcation points are located within six cable feet of the desired location of the remote Motorola equipment. All lines are clearly identified and tested.		❑	❑	❑
13	Access to the loading dock at appropriate facilities for the delivery of equipment, to receive and secure storage of equipment shipped. Hallways and doorways must be sufficient to accommodate shipping containers. A temporary staging area for the unpacking and assembly of equipment.	Name: Phone number: Email Address: Available Loading Dock: Freight Elevator: Sufficient parking space for delivery vehicle:	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
14	The City is to provide TCP/IP communications and connection to the equipment for any existing networks, workstations, and printers that are to have access to the Motorola applications.		❑	❑	❑

	Site Readiness Requirements	Evaluation	Pass	Fail	Unknown
15	A work area for Motorola on-site staff in the headquarters facility, located near the server room, but outside the data center and communications center. The room will be equipped with AC power to support four terminal devices and provide workspace for a minimum of 2 people. The area must have cable access to the servers and be equipped with a telephone line capable of making voice telephone calls, including long distance. This work area will be available during the course of the project.		❑	❑	❑
16	Access to dumpsters for the removal of trash and shipping containers.		❑	❑	❑

1.4.5 PremierOne Workstation Specifications

The following specifications are provided for your reference.

1.4.5.1 PremierOne CAD Recommended Specifications

- 3.2 GHZ quad-core processor
- 8GB memory
- 40GB available disk space
- 1Gigabit or faster Ethernet network adapter
- Three 1024x768+ pixel, 16+ bit color displays
- QWERTY Keyboard with 12 function keys
- Windows 7 Professional SP1 64-bit
- Video card with at least 256MB RAM per monitor, 24 bit capable graphics accelerator, OpenGL v2.0 runtime or higher. Latest available drivers. Shader Model 3.0 or higher is recommended.
- Adobe PDF reader (for help files)
- 2Mbps network bandwidth (to server) with 1ms or less round-trip latency

1.4.5.2 Mobile Workstation Recommended Specifications (PMDC)

- Intel or AMD 2.6GHz dual core processor
- 4GB memory
- 20GB available disk space
- One 800x600+ pixel, 16+ bit color display
- Radio / Wireless communications device, 3G or 4G network
- Standard QWERTY keyboard and Touchpad / Point Stick (or equivalent mouse device)

- Touchscreen Optional
- Windows 7 Professional SP1 64-bit
- Video card with at least 512MB RAM, 24 bit capable graphics accelerator, OpenGL v2.0 runtime or higher. Latest available drivers. Shader Model 3.0 or higher is recommended. Adobe PDF reader (for help files)

1.4.5.3 Mobile Workstation Minimum Specifications (PMDC)

WINDOWS 7:

- Intel or AMD 1GHz processor or higher
- 1GB RAM (32-bit), 2GB RAM (64-bit)
- 16GB available disk space (32-bit), 20GB available disk space (64-bit)
- One 800x600+ pixel, 16+ bit color display
- Radio / Wireless communications device
- Standard QWERTY keyboard and Touchpad / Point Stick (or equivalent mouse device)
- Touchscreen Optional
- Windows 7 requirements must meet or exceed Microsoft minimum requirements: For more hardware details, see http://windows.microsoft.com/systemrequirements

WINDOWS 8:

- Intel or AMD 1GHz processor or higher with support for PAE, NX, and SSE2
- 1GB RAM (32-bit), 2GB RAM (64-bit)
- 16GB available disk space (32-bit), 20GB available disk space (64-bit)
- One 800x600+ pixel, 16+ bit color display
- DirectX 9 graphics device with WDDM 1 driver
- Radio / Wireless communications device
- Standard QWERTY keyboard and Touchpad / Point Stick (or equivalent mouse device)
- Windows 8 requirements must meet or exceed Microsoft minimum requirements: For more hardware details, see http://windows.microsoft.com/en-us/windows-8/system-requirements?src=ia&iaaid=50007200&ialnk=title

1.5 PREMIERONE INTERFACES AND INTEGRATIONS

PremierOne interfaces exchange data and information with public safety systems both internal and external to PremierOne. Interfaces facilitate some functionality within PremierOne, such as database queries or the running of vehicle plates. The exchanged information and data can be captured and associated with the relevant system data, such as queried data from state databases stored with incidents.

Interfaces are divided into six general categories:

- **Data Views.** For this connection Motorola assists the interfacing product with how to access the appropriate sections within the RDWs to get to the information they need. Motorola does not create any custom view, triggers, stored procedures or transforms as part of this.
- **One way data feeds (DFF).** Data feeds present from the CAD environment to the target in near real time. These interfaces only allow information to be sent from CAD to the remote target however, they can be modified by you to add additional data elements if their needs change in the future.

- **One way interfaces.** One way interfaces can allow information to move from or to any of the connected systems. These communications can occur on a real time bases or near real time depending upon the needs of the system.
- **Two way interfaces.** Two way interfaces both send and receive information from PremierOne to external systems. An example of this may be a fire station alerting system where the fire station alerting system receives a dispatch and then can return status information to PremierOne showing "Bay Doors Open".
- **Application Programming Interfaces (API).** An API is a method for a third party to write to standard capabilities made available by several PremierOne applications. Writing to an API, a third party can develop interface with PremierOne application(s). APIs are licensed for each instance of use on a vendor by vendor basis. Writing to a PremierOne API means that a third party is taking responsibility for interface with standard PremierOne functionality. Additional third party services may be required to write to the API and are your responsibility.
- **Query only interfaces**. If information is needed from within CAD or RMS which is contained in an external system then a query interface is appropriate. An example would be a regional law records system.

Interfaces communicate via TCP/IP and other protocols, which require interface devices. For non-TCP/IP protocols, the protocol is converted to TCP/IP by interface devices, although conversion to TCP/IP may not be present at the same location as the rest of the system. This data is then transported to the system via TCP/IP. For high availability, two interface devices are clustered or configured in a fault tolerant manner. Motorola has included four (4) Lantronix UDS1100 serial to IP devices to support interface connectivity to E9-1-1 ANI/ALI/TDD controllers.

Interfaces that have unique requirements, such as state interfaces that require communication to be initiated from a single static IP address, are handled by the interface service through clustering.

The interface descriptions provided in this document represent the capabilities of PremierOne. Interfaces to your-provided third party system do not represent or guarantee the third party system's capabilities. If a third party application programming interface (API), Motorola PremierOne API or third party services are necessary to accommodate an interface with PremierOne, such elements and any associated third party costs will be your responsibility. In order to successfully deploy the interface, Motorola requires you to provide coordination with the third party.

Detailed interface specifications are documented and provided to you during the design document phase (post-contract execution) in an Interface Requirements Document (IRD). The development of the IRD for each interface is performed in concert with you post-contract in order to define the proper capabilities and requirements for each interface. The following is a list of the interface components which may be collected and documented in the IRD.

- Introduction
  - Interface Function
  - Responsibilities
  - Assumptions
  - Acronyms and Definitions
  - References
  - Issues
- Interface Description
  - Overview
  - Expected User Experiences
  - Error Conditions and Logging

  - Provisioning / System Administration
- Interface Requirements and High Level Design
  - Hardware Connection
  - Message Format
  - Data Elements
- Interface Constraints
  - Connectivity
  - Performance
  - Administration
  - Maintenance
  - Security
  - Test Notes

Your requirements identified in the IRD include working with the applicable third party to obtain/configure/modify the data mapping needed between the two systems, provide the connectivity between the databases, provide the access permissions for tables outside PremierOne, and provide the computing and staff resources needed for the test of the interface.

1.5.1 PremierOne Interfaces

Table 1-7. PremierOne Interfaces

INTERFACE	GROUP	TYPE	DR
E911 & TDD	CAD	One Way In	Yes
Paging (TAP)	CAD	One Way Out	Yes
SMTP	CAD	Two Way	Yes
ASTRO PTT ID	CAD	Two Way	Yes
MCC7500 Console	CAD	Two Way	Yes
CryWolf	CAD	Two Way	Yes
PMDC	Mobile	Two Way	Yes

1.5.2 Integrated Solution Interfaces

Table 1-8. Integrated Solution Interfaces

INTERFACE	GROUP	TYPE	DR
California – Los Angeles County – PMDC Mobile Query	Mobile	Query	Yes

1.6 PREMIERONE INTERFACE INFORMATION

The following sections describe the PremierOne interfaces included with Motorola's solution.

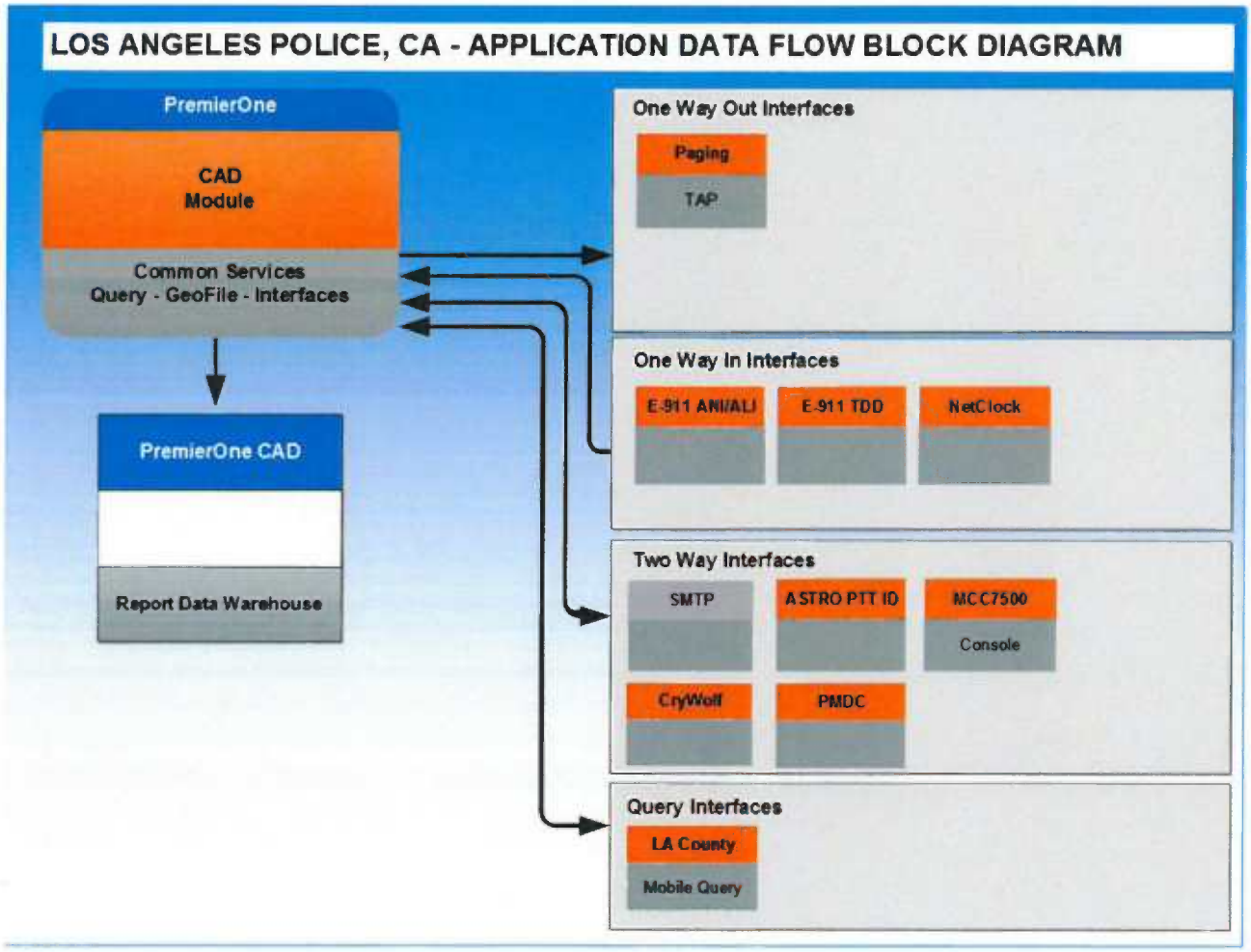
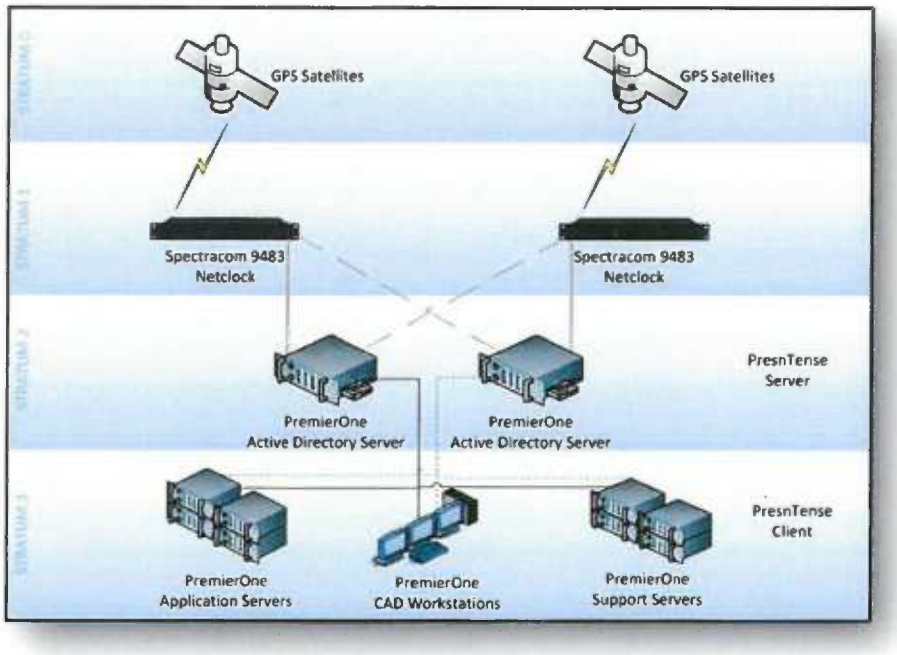


Figure 1-4: Interface Data Flow Diagram

1.6.1 PremierOne System Interfaces

1.6.1.1 SpectraCom NetClock Interface

LAPD has indicated they will be providing NetClock for the deployment with PremierOne CAD. Motorola requires 2 clock sources for Primary and 2 clock sources for the Disaster Recovery site. . Netclocks will provide a unique ability to provide time synchronization services not just to the PremierOne servers but also the CAD workstations.



1.6.2 PremierOne One Way Interfaces

1.6.2.1 Generic Phone (ANI/ALI)

Overview

The ANI/ALI interface allows the population of ANI/ALI information into an Incident Initiation screen. This can be accomplished automatically if an II form is open at the time the call is answered or after the fact. The interface supports the auto populate of ANI and ALI information for the most recently answered call. Unlike Premier CAD, the ability to scroll ANI/ALI data for previously answered calls is not available. Certain functions may vary depending upon the specific vendor.

CAD Integration of ANI and ALI

PremierOne CAD supports integration with E911 systems so that as CAD Incidents are created, ANI and ALI information will automatically populate in the incident fields when available. When a 911 call is answered, the 911 system will send ANI and ALI information to the CAD Server. The 911 console that answers the incoming call is identified and sent to CAD. When the CAD Client at this same workstation location initiates an incident, the ANI and ALI information from the answered call is associated with the new incident.

If 911 data is available when the incident is initiated, the Location and Caller information can be automatically populated in the form.

Mobile Re-location (Re-bid)

A second phase of Enhanced 911 service allows for location of a mobile phone.

There are two methods of location. As with every 911 call, the initial location information is passed to CAD at the start of the call. The added challenge with mobile phone callers is that they can be moving and may not be at the same location that was provided at the start of the call. Dispatchers like

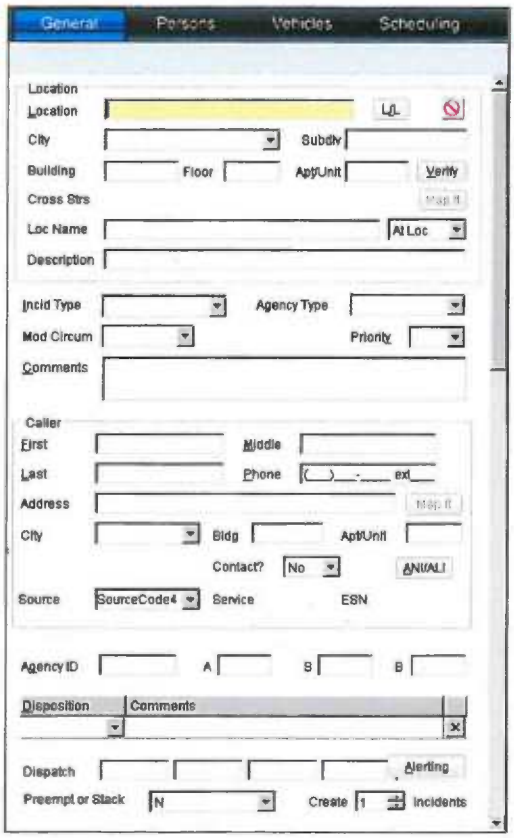
to check if mobile phone callers are where they think they are by re-bidding the ALI information during the 911 call. The initial location (GPS Coordinates) of the cell-phone at the time of the incoming call is displayed on the PremierOne MAP as long as this information is provided to CAD. Re-bidding the mobile caller is not a supported CAD function, but can be done from the 911 Console if the E911 system supports it.

The PremierOne Mapping Client will be updated if new ALI information is made available to the CAD server by the E911 system.

An icon indicating the type of ANI/ALI data displays to the right of the Contact field if the Name and Phone fields were populated by ANI/ALI data. Select the icon to refresh the ANI/ALI data.

CAD auto-populates the Source field for when ANI/ALI is used and for alarm-initiated calls. For other calls, select the appropriate source. CAD populates the Service and ESN fields for ANI/ALI calls.

This interface includes the Motorola services necessary to deploy the interface with PremierOne. Additional third party services may be required and are the responsibility of the Customer.



1.6.2.2 TDD

PremierOne supports a server interface for the phone system. The CAD Server interface connects to the centralized TDD Controller located in the Cassidian system. Telephone Device for the Deaf allows a hearing or speech impaired person to dial 911 and solicit the same emergency and public safety services as the rest of the speaking and hearing community. The Americans with Disabilities Act requires communities to provide the same level of services to those with disabilities that it provides to the average citizen. Therefore 911 Public Safety Answering Points (PSAPs) must be

compliant with the Act, and NENA-04-001, Issue 2, August 23, 2000 provides the "Standards for E9-1-1". PremierOne CAD provides Public Safety Customers a path to become compliant or maintain their compliance by supporting integration of TDD calls.

This interface includes the Motorola services necessary to deploy the interface with PremierOne. Additional third party services may be required and are the responsibility of the Customer.

1.6.2.3 Alphanumeric Paging (TAP)

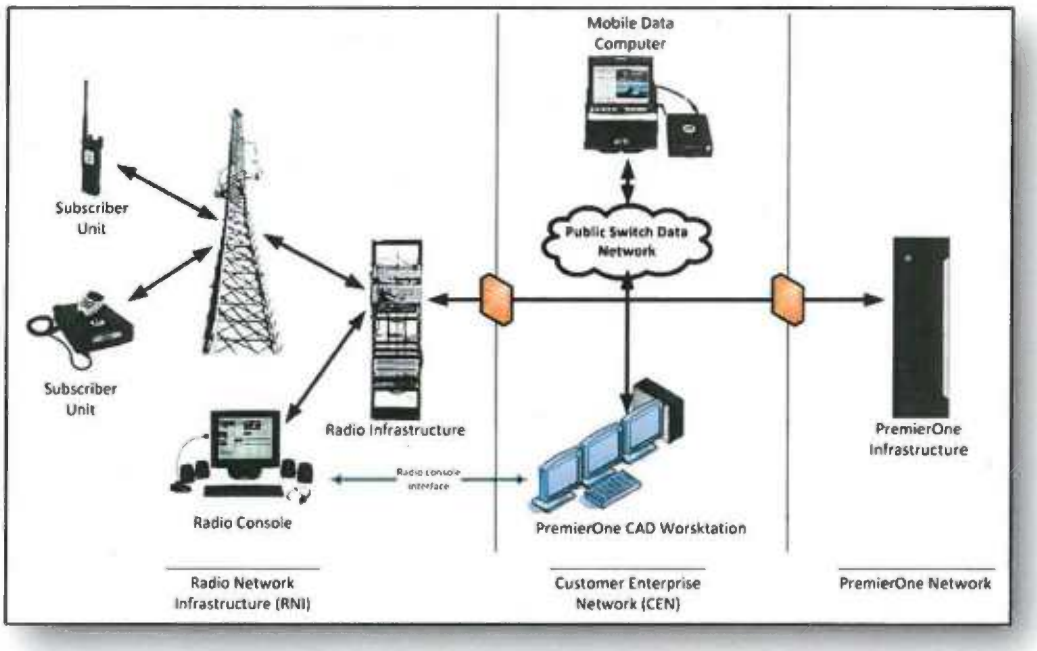
This TCP/IP interface will allow PremierOne CAD to send alphanumeric messages to a system/service that is capable to receiving the TAP protocol. The TAP protocol sends a TCP/IP message to a Lantronix device which converts the message into a serial output. That output is then connected to a modem or other device which is capable of receiving a serial TAP input.

This interface includes the Motorola services necessary to deploy the interface with PremierOne. Additional third party services may be required and are the responsibility of the Customer.

1.6.2.4 ASTRO Radio PTT ID & MCC7500 Console

PremierOne allows your Motorola ASTRO system to be integrated to CAD. The following sections describe that integration.

With MCC7500 console integration, Push-to-Talk (PTT) IDs to be passed to PremierOne CAD along with Emergency Button activations. Status button assignments allow for status changes, location changes, and/or the adding of disposition to an incident. Channel Grouping feature is also accessible within CAD. From a window within the CAD client, the user can use predefined groups or create, manage and maintain their own talk groups. These groups can be activated as multi-selects on the radio console at the discretion of the user. When the group is utilized, the CAD client will show the status and will allow the user to transmit on all the selected talkgroups. The user can make a priority transmission or may request the use of the talkgroups by alerting the other users with an audible notification. PremierOne CAD also can be provisioned to automatically load a particular channel group based on the geographical location of an incident.



CADICAD: Radio Proxy Server

The PremierOne element providing the main radio infrastructure interface is the CADICAD server. This stand-alone Windows Server 2012 application utilizes SQL Server 2012 and provides proxy functions from the Radio Infrastructure to the CAD system. CADICAD can support ASTRO 25 Integrated Voice and Data (IV&D) Conventional as well as Trunking systems. There are three supported interface protocols from the ASTRO systems: CADI, ATIA, and AIS.

The CADICAD Server is capable of providing four types of data from the Radio system to the CAD system. These include specific radio initiated events as follows:

- Non-PTT Events
- PTT Events
- Emergency status
- Unit Status Change

Radio Emergency

The PremierOne CAD system supports notification and display of Radio/MDT Emergency status. An emergency situation can be triggered either by the Radio Emergency button or the Emergency icon on the PMDC client. All monitoring CAD Clients will receive an emergency notification (pop-up window) of the event. The emergency event must be acknowledged by the CAD User before the window will close. The Emergency will be listed in multiple places such as the CAD Client Info Panel, the Unit Status Monitor, the PTT Status Monitor, and the Reset Emergency Indicator (RE) command List on the CAD Client.

When Popup notifications are given for a Unit/Device emergency, they must be acknowledged in order to clear them.

- Clearing an Emergency (RE) for one source clears the emergency state for the whole unit.
- Notification Pop-up windows in the CAD Mobile and CAD Client show the Unit and Logged in User.

- The Unit Status Monitor includes last known location, shows EM status, and turns red.
- PTT Status Monitor shows the radio emergency in red.

PTT

Radio Channels that are to be monitored by CAD and have their status displayed on the PTT Status monitor must be selected by the CAD User using the CT command. This allows for a dispatcher to select only those channels that need to be monitored and may be associated with a dispatcher's coverage area.

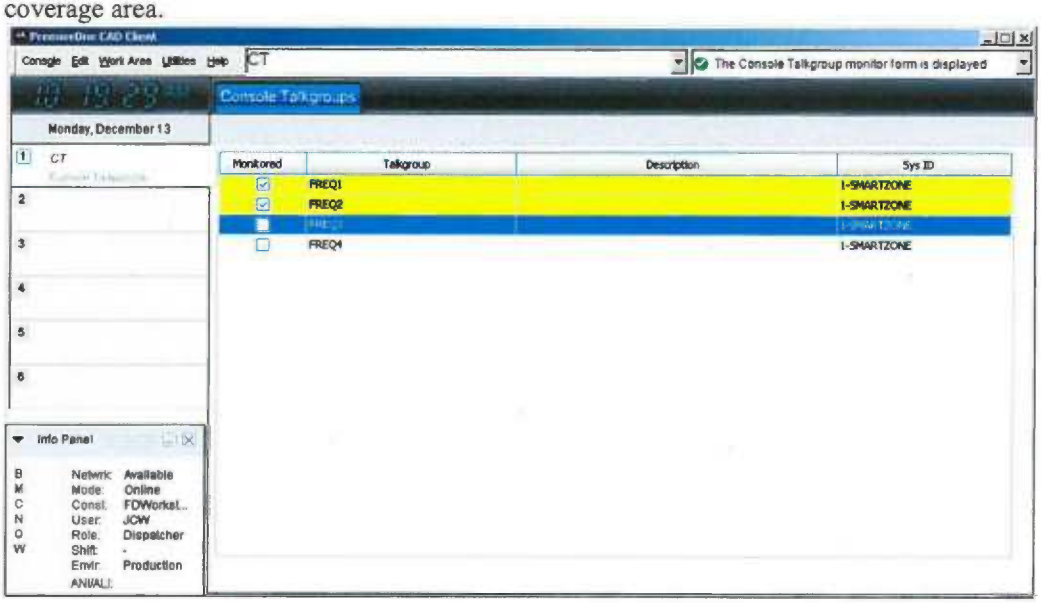


Figure 1-5: CT FORM

Once the channels are selected, enabling the PTT Status Monitor will ensure that all radio traffic on that channel is monitored and displayed.

The "CALLER" listed in the PTT Status Monitor is the highest level identification of the radio sender. This means that if the radio is assigned to a Unit, the Unit ID will be displayed; if the radio is assigned to a Person, the Person will be assigned; if no higher level assignment is made, the Radio Name (alias) will be displayed for the CALLER.

1.6.2.5 CryWolf

PremierOne interfaces to CryWolf with a two way interface.

First, CryWolf acts as the alarm detail system of record. Alarm number and associated data is input into CryWolf and sent to PremierOne as an inbound interface. Any alarm modifications occurring in CryWolf are updated to PremierOne periodically to keep the data synchronized. PremierOne takes that alarm information and makes it available for incident entry so that a call taker can simply enter an alarm number in order to initiate an incident at that alarm.

Second, PremierOne provides false alarm information back to CryWolf in an outbound interface so that False Alarm reporting and billing can occur.

This interface includes the Motorola services necessary to deploy the interface with PremierOne. Additional third party services may be required and are the responsibility of the Customer.

1.6.3 PremierOne Two Way Interfaces

1.6.3.1 Simple Mail Transport Protocol Alerting

PremierOne CAD will provide an interface to the Agency Public Safety mail or mail relay servers via SMTP to send and receive emails to addresses external to PremierOne. Additionally, notifications can be setup within PremierOne CAD to send SMTP messages (email) based on an Incident Response Factor (IRF's) or Geography. This allows triggers to be setup on specific locations, beats, sectors, or an area. Additionally the IRF trigger allows for notifications based on incident type, modifying circumstances as well as the alarm level of the incident. These triggers are setup and controlled at the agency level allowing for unique notifications per agency.

Each agency will be able to control the content of the message being sent. It can include elements such as units, personnel, address, Incident Type, priority, etc. It is important to note that not all incident elements are available to be sent automatically. This interface also allows for manual messaging to notification groups as needed. It is assumed that all units, personnel or groups, which need to be alerted, can be reached via a normally formatted e-mail address and that the Agency will provide a target server with SMTP relay capability such as an Exchange server.

1.6.4 PremierOne Query Service Interfaces (PMDC)

1.6.4.1 State/NCIC

PremierOne utilizes a standard query service to manage query, entry and update transactions to State/NCIC defined in the following list. Motorola will provide formatting for one and one response for each of the following queries from PMDC.

- Person by Name/DOB
- Person by License Number
- Vehicle by Plate
- Vehicle by VIN
- Article by Serial Number

Additional query form and response formatting may be provided, if required by you. Motorola can provide quote for these services if supplied with a list of required transactions.

SECTION 2

IMPLEMENTATION PLAN

2.1 PROJECT MANAGEMENT

Motorola's project management approach has been developed and refined based on lessons learned in the execution of hundreds of system implementations. Using experienced and dedicated people, industry-leading processes, and integrated software tools for effective project execution and control, Motorola has developed and refined practices that ensure appropriate design, production, and testing is optimized to deliver a high-quality, feature-rich system.

Motorola employs leading edge project management processes and tools such as Compass secure web-based reporting system, Oracle E-Business program management tools, Microsoft Project for schedule development and control and managing schedule and budget, and systematic Risk Management to assist the project team in accurately forecasting and effectively controlling project activities. The use of these tools results in higher quality system design and operation, quicker implementation, reduced project risk and total cost of ownership, and greater end user satisfaction.

Intelligent processes include embedded quality standards to include Digital Six Sigma for product and system development and manufacturing; rigorous and repeatable project management processes for execution and control of all project activities; and an integrated Quality Assurance Plan to measure the quality and timeliness of our work. These processes ensure that project execution efforts including system design, installation, testing, and delivery are completed on-time and to applicable specifications.

The assigned project manager for each organization shall be the business representative and point of contact for the organization, responsible for coordination of the organization's resources and activities. The project manager shall schedule all activities and resources as required to execute tasks, initiate review meetings, provide status information to their counterpart, and generally oversee the execution of this plan. Project management is an ongoing activity for the duration of the project and should be assumed to be part of every project task.

2.1.1 Motorola Project Manager

Motorola will designate a project manager who will direct Motorola's efforts and the efforts of Motorola's subcontractors and third party vendors and serve as the primary point of contact for the LAPD. The responsibilities of the Motorola project manager include:

1. Maintaining project communications with the LAPD's project manager.
2. Managing the efforts of Motorola staff and coordinate Motorola activities with the LAPD's project team members.
3. Managing subcontractors and third party vendors and integrating the delivery of third party content into the project.
4. Measuring, evaluating and reporting the progress against the project schedule.
5. Resolving deviations from the project schedule.
6. Monitoring the project to ensure that support resources are available as scheduled and as identified in the contract.
7. Coordinating and overseeing the installation of all licensed Motorola application software.
8. Reviewing and administering change control procedures through the LAPD's project manager and in accordance with the change management provisions of the Agreement.

9. Conducting status meetings in person on a monthly basis and via teleconference on a weekly basis or as may otherwise be reasonably required to discuss project status.
10. Preparing and submitting a monthly status report that identifies the activities of the previous month, as well as activities planned for the current month, including an updated project schedule.
11. Providing timely responses to issues related to project progress raised by the LAPD's project manager.

2.1.2 LAPD Project Manager

The LAPD will designate a project manager who will direct the LAPD's efforts and serve as the primary point of contact for Motorola. The responsibilities of the project manager include:

1. Maintaining project communications with Motorola's project manager.
2. Identifying the efforts required of LAPD staff to meet the task requirements and milestones in the Statement of Work and project schedule.
3. Reviewing the project schedule with Motorola's project manager and assisting Motorola in finalizing the detailed tasks, task dates and Motorola and LAPD Responsibilities.
4. Measuring and evaluating progress against the project schedule.
5. Monitoring the project to ensure that support resources are available as scheduled.
6. Attending status meetings with Motorola's project manager.
7. Providing timely responses to issues related to project progress raised by Motorola's project manager.
8. Liaising and coordinating with other agencies, LAPD vendors, contractors and common carriers.
9. Reviewing and administering change control procedures, hardware and software certification, and all related project tasks required to maintain the implementation schedule.
10. Approving and releasing payments in a timely manner.
11. Assigning one or more personnel who will work with Motorola staff as needed for the duration of the project, including at least one system administrator for CAD and one or more representative(s) from the IT department.
12. Ensuring acceptable Change Orders and Approval Letter(s) are approved by authorized signature(s).
13. Providing building access to Motorola personnel to all facilities where the system is to be installed during the project. Temporary identification cards should be issued to Motorola personnel if required for access to LAPD facilities. Access must be available twenty-four (24) hours a day during the course of this project.
14. As applicable to Motorola's installation, assuming responsibility for all fees for licenses and inspections and for any delays associated with inspections due to the required permits.
15. Providing reasonable care to prevent equipment exposure to contaminants that cause damage to the equipment or interruption of service. Ensure a safe work environment for Motorola personnel. If problems are encountered with hazardous materials, Motorola will immediately halt work and the LAPD will be responsible for the abatement of the problem or Motorola and the LAPD will jointly come to a mutual agreement on an alternative solution. Motorola will be excused from timely performance of its obligations pending such resolution.

2.2 PROJECT ORGANIZATION

The Motorola Smart Public Safety Solutions organization is comprised of business groups that support the development and implementation of complex public safety communications systems. Members of these groups are involved from the proposed solution conception through system completion.

The project implementation team that will be assigned to the LAPD's project includes the project manager (PM), solution architect (SA), system technologist (ST), and business analysts (BA) who specialize in CAD, GIS, and Records provisioning and functionality. Other groups support the efforts of the core team to ensure the successful implementation of the PremierOne solution.

Please refer to the organization chart provided in response to Section 3.5 for details about the proposed project team members.

2.3 PROJECT SCHEDULE

Implementation of this project will proceed in accordance with a project schedule that is jointly approved by the Motorola and the LAPD project manager during the project initiation phase. The mutually agreed upon project schedule will become the governing Project Schedule incorporated into the contract.

The project schedule is based upon work being accomplished Monday through Friday during normal business hours, with the exception of holidays.

Changes to the project schedule are governed by the terms and conditions of the System Agreement. A preliminary project schedule has been provided in Section 4.

2.4 PROJECT COMMUNICATIONS

Motorola recognizes the importance of effective project communications. A Project Communications Plan will be created during Project Kickoff and will include the following components:

- **Trigger.** Determines what information or event requires communication between the LAPD and Motorola (*e.g.,* status meetings, requirements documents, Test plans, training plans).
- **Frequency.** Determines the frequency of communication (*e.g.,* daily, weekly, monthly, one-time).
- **Recipient.** Determines who will receive or participate in each communication trigger, and who will be the primary member and who will be carbon copied.
- **Method.** Determines the method (*e.g.,* e-mail, conference call, formal letter) and format (*e.g.,* pre-determined form, page layout, field definition) of the communication.
- **Champion.** Determines who will be responsible for communication delivery or creation.
- **Planned Action.** Determines how the communication will be measured (*i.e.,* on-time, accuracy, professionalism).

2.5 RISK MANAGEMENT

Motorola's Project Management Plan includes the processes required to ensure project risks are managed. Motorola will develop the Risk Management Plan. Motorola and the LAPD will jointly

maintain a Risk Management Plan during the life of the project. The Risk Management Plan is an iterative process of identifying and measuring risks and developing, selecting, and managing options for handling those risks. The Risk Management Plan includes the following steps:

Identification. Determines which risks are likely to affect the project and documents the characteristics of each.

Quantification. Evaluates risks in terms of their probability of occurrence. The probability of occurrence includes the following measurements:

- Frequent: likely to occur on a continuous basis
- Probable: likely to occur several times
- Occasional: likely to occur some time
- Remote: unlikely but possible

Impact. Evaluates risks and risk interactions to assess the range of possible outcomes. The level of impact of the risk event includes:

- Critical: an event that, if occurred, would jeopardize project success
- Serious: an event that, if occurred, would cause major system cost/schedule increases
- Moderate: an event that, if occurred, would cause moderate cost/schedule increases
- Minor: an event that, if occurred, would cause a small increase in program costs and/or schedule
- Negligible: an event that, if occurred, would have insignificant effect on the project

Control. A risk control plan is established for each risk. The focus of the control plan is to manage or minimize the effect or impact of each risk by increasing the number of choices available and/or reducing the probability of occurrence. The methods for risk control include:

- Avoidance: eliminate the potential for occurrence
- Acceptance: the risk is allowed with no plan in place
- Mitigation: Steps are taken to reduce the likelihood or impact of the risk

Status. Motorola's project manager and the LAPD project manager will be responsible for the monitoring and management of the risk issues identified.

2.6 ACTION ITEM/ISSUES LOG

Motorola's Project Management Plan includes the development of an Action Item/Issues Log that will be used throughout the project. Motorola's project manager will work with the LAPD project manager during the kickoff to design and approve the format of the Action Item/Issues Log. The purpose of the log is to resolve project issues that arise within the scope of the project. Issues that change or modify the project scope, (i.e. quantities, schedule, deliverables), are handled through the Change Control process. The Action Item/Issues Log identifies the issue, provides regular status updates on specific tasks, and identifies the responsibilities of all parties.

2.7 CHANGE CONTROL

The change control process covers contract changes to the Agreement and defines the procedures by which the project scope may be changed. It includes the paperwork, tracking systems, and approvals necessary for authorizing changes.

The intent of the change control process is to ensure concurrence between the LAPD and Motorola on any changes to the contract baseline as it is currently documented and recorded.

Changes to the contract may originate for several of the following different reasons:

- Addition/deletion to scope of Project
- Complaint requiring action
- System design change
- Requirement change
- Functional change
- Milestone Payment change
- Procedural change spelled out in the contract
- Supplier change of equipment
- Alternate equipment or solution being proposed
- Schedule change to project and Modification to the Terms and Conditions of the contract

The Motorola project manager reviews the requested change with the LAPD project manager to determine the proper course of action necessary to respond to the requested change. This review may involve resources from Contracts, Engineering, and/or key subcontractors (if applicable) to properly evaluate and respond to the merits of the change. An evaluation usually determines whether a proposed change is feasible, meets the intent of the change, is appropriately priced, if applicable, and tests for acceptance of the change by both parties involved. Change orders may result in price increases, be price neutral, or may decrease the price.

Change orders must be authorized and executed by the LAPD and Motorola before work on the change order can begin.

2.8 STATUS REPORTING

Project Status includes the performance of the project in relation to project scope, schedules, issues, and quality. Project performance measurements include a list of the appropriate milestones, task completion points, and deliverables. This format will ensure that proper checkpoints are utilized to make sure the project is proceeding according to schedule.

The Motorola project manager will monitor and communicate project performance via project status reporting to the LAPD as well as internally to Motorola team members. Status reports will be provided for each monthly status meeting.

The following items will be included within the project status report.

- Completed activities, deliverables and milestones, comparing to plan.
- Work plan activities, deliverables and milestones, if any, planned for the current and the next reporting period
- Updated Action Item/Issues Log
- Project notes and comments

2.9 QUALITY ASSURANCE

Quality Assurance ("QA") processes ensure the highest level of defect-free products that consistently meet specification requirements, performance, reliability, interoperability, usability, and documentation.

QA testing begins with defined processes in the development environment that include unit and integration testing prior to the software being delivered to the QA department.

Once received in QA, an established review process is maintained for all products prior to approval for shipping, control of the final code, and oversight of the products once they have been shipped.

The QA Department is responsible for the following:

- Establishing, achieving, and maintaining Motorola quality objectives
  - Meet requirements through design concepts, testing, and validation
  - Performance measurements against objectives and requirements
  - Adhering to Six Sigma Quality Process
  - Applying ISO 9001-2008 quality management principles
- Developing, executing, and reporting standardized Test Plans
- Performing Software Configuration Management
- Reviewing activities, including requirements, design, and end-user documentation
- Controlling supplier, subcontractor, and third party software deliverables as procured, installed and configured by Motorola
- Providing Defect Control and correcting them
- Creating and maintaining quality records

All software products must pass comprehensive testing before shipping. An established policy dictates rules for acceptance/rejection of products and standards that must be met before products are authorized for shipment.

Motorola's QA process includes involving the QA team in the early stages of development. QA plays an active role in reviewing requirements and design to ensure that the maximum coverage is incorporated into the Test Plans/Procedures used by the QA team in the verification of the software.

Motorola recognizes that each LAPD's needs and configurations are different. As such, Motorola's QA processes include functional testing at the LAPD sites following installation and configuration of the software. Functional testing is completed following the initial installation as well as subsequent software upgrades.

2.10 TESTING AND COMPLETION

The Acceptance Test process confirms that the delivered solution meets product requirements as defined in the contract. All test criteria will be predicated by the contract exhibits including Motorola's responses to LAPD requirements. The Acceptance Test Plan will be jointly developed by Motorola and the LAPD and will include the test processes to be performed, the criteria by which tests will be evaluated, and resolution plans by which issues that may not successfully pass the initial testing will be addressed.

Testing task descriptions are provided in the Statement of Work in Section 3.

SECTION 3

STATEMENT OF WORK

This Statement of Work ("SOW") defines the principal activities and responsibilities of all parties for the implementation of PremierOne CAD to support public safety dispatching operations. When assigning responsibilities, the phrase "Motorola will" includes Motorola subcontractors and third-party partners.

3.1 PROJECT KICKOFF

The purpose of the Project Kickoff activity is to introduce project participants, review the scope of the project, project schedule, training plan and test plans.

Motorola Responsibilities

1. Deliver product videos for review.
2. Schedule and facilitate the kick-off meeting to clarify roles and responsibilities and establish team working relationships.
3. Review all third-party partners and proposed applications.
4. Review and work toward finalizing the project schedule dates.
5. Review and finalize the Training Plan.
6. Discuss the preliminary test plan that will include test procedures that define steps to be taken to validate functionality, pass/fail criteria, and the resolution for deficiencies. The Test Plan will be reviewed and finalized after System Provisioning and Interface Requirements Documents are completed.
7. Plan installation activities with the LAPD.

LAPD Responsibilities

1. Provide access to product videos to project participants.
2. Identify and ensure participation of key team members in kickoff and project initiation activities.
3. Provide input to the final Project schedule dates.
4. Finalize the Training Plan.

Motorola Deliverables

Title
Project Kickoff Meeting Minutes
Project Schedule
Final Training Plan

3.2 FUNCTIONAL SCOPE REVIEW

The purpose of this activity is to review the contracted functional capabilities of the PremierOne CAD and PMDC system in detail, including screens, processing, and outputs of the incident, unit, status monitoring, geofile, messaging, and reporting functional areas of the system.

3.2.1 Application Orientation

Motorola will introduce the CAD and Mobile systems to LAPD users via demonstrations and related documentation.

Motorola Responsibilities

1. Prepare demonstration CAD system: Basic Provisions for LAPD.
2. Coordinate room setup and attendees with the LAPD.
3. Prepare demo CAD system.
4. Prepare associated binders/documents for demo.
5. Review PMDC Functional Specification Document

LAPD Responsibilities

1. Review Agenda Letter with key staff Schedule stakeholders.
2. Provide room with projector, seating and AV equipment.
3. Prepare focus list for demonstration.

Title
Demo Binders
Product Demo
PMDC FSD

3.2.2 Site Survey and Infrastructure Planning

The purpose of this activity is to review the infrastructure requirements for the PremierOne CAD system and to ensure the computer room(s) and other locations are appropriate for the installation of the proposed system hardware. Motorola will facilitate a meeting following the Project Kickoff to review the Site Requirements document that accompanied Motorola's proposal and to conduct a survey of the LAPD's facilities. The objective of this review is to ensure the LAPD's existing infrastructure(s) and facilities will support an optimal installation environment for the PremierOne Records system.

Motorola's proposal makes no provision for cabling or capital improvements to the installation environment and power consumption considerations that may be required to support the PremierOne solution.

Motorola Responsibilities

1. Review Site Requirements Document with the LAPD.
2. Facilitate meetings as required to review the current infrastructure.
3. Conduct a site survey/audit of the facilities in which system hardware will be installed to assess site readiness.
4. Verify the proposed computer processor(s), operating system software, third-party software, all associated workstations, printers, communications, and related components.
5. Prepare a report that includes recommendations for any site preparation required to provide a suitable environment for installation of the system equipment and that identifies any deficiencies related to power, power supplies, cabling, network connectivity, communications equipment.

LAPD Responsibilities

1. Provide documentation on the current infrastructure, i.e. existing hardware and operating system software components and terminal networks, as well as projected utilization statistics and other information as is reasonably required to validate final hardware requirements.
2. Ensure site environment meets minimum requirements, as stated in the Site Requirements document.
3. Make appropriate staff available to explain the current architecture.
4. Provide a site adequate for the installation, operation, and maintenance of all computer server(s), workstation(s), and related peripheral in accordance with Motorola's requirements and all network infrastructures.
5. Provide a programmer work area for Motorola on-site staff in the primary facility, located near but outside of the computer machine room. The room will be equipped with AC power to support four terminal devices and provide workspace for a minimum of two (2) people. The area must have cable access to the computer and be equipped with a telephone line capable of making voice telephone calls, including long distance. This work area will be available during the course of the project.
6. Review the final hardware and operating system software configuration with the Motorola project team.

Motorola Deliverables

Title
Site Survey Results
Bill of Materials

3.2.3 IP Network Analysis

The objective of this activity is to ensure the local and wide area networks will support the proposed solution. A Motorola Network Systems analyst will conduct an on-site assessment of the existing network.

Motorola Responsibilities

1. Perform on-site network assessment.
2. Analyze data.
3. Prepare recommendations.
4. Present and discuss recommendations with the LAPD.

LAPD Responsibilities

1. Provide access to all required facilities and locations necessary to perform assessment.
2. Provide information on current network architecture and configuration.
3. Review and discuss recommendations with Motorola.

Motorola Deliverables

Title
Site Preparation Recommendations

3.3 BUSINESS ANALYSIS AND SYSTEM PROVISIONING

System provisioning includes user configurable parameters (i.e. specific values for unit names, timing of events, officer or user identification, street names, statute tables; to name a few) that are defined within the system. In order to guide the LAPD through the provisioning phase, Motorola will conduct

a series of meetings during which we will gather information necessary to provision the system to best meet the agency's functional requirements. The metrics and data gathered will be the applied during the provisioning activities.

*Note: While the focus of provisioning will be on CAD, Motorola will obtain sufficient information to provision PremierOne Mobile such that base functionality will be supported. At such time that LAPD would like to explore PremierOne Mobile, they can begin with the base provisioning and functionality. If it is determined that additional provisioning is required, Motorola will work with LAPD to develop a change order documenting the scope of the requested services.

3.3.1 CAD Business Process Review (BPR) and Requirements Gathering

Motorola Responsibilities

1. Prepare agenda and letter
2. Prepare BPR workbook
3. Work with LAPD to complete BPR workbook
4. Review site's current GIS data, including boundary information and collect sample data. Establish consistent terminology for response boundaries.
5. Complete field info gathering as needed

LAPD Responsibilities

1. Provide room, seating and AV equipment
2. Notify appropriate persons of date, hours and location
3. Schedule dispatch, police ride along
4. Prepare call and unit statistics
5. Work with Motorola to complete BPR workbook

Motorola Deliverables

Title
Pre-BPR Checklist
Completed BPR Workbook

3.3.2 Draft CAD BPR Findings, produce Vision and Scope

Motorola will develop documentation that reflects the features that will be provisioned in support of the department's workflows.

Motorola Responsibilities

1. Review BPR workbook
2. Produce Initial Vision and Scope Document
3. Review Initial Vision and Scope Document with the Department
4. Review LAPD's feedback in the Vision & Scope GAP Document
5. Produce Final Vision & Scope Document and deliver it
6. Agree upon Final Vision & Scope Document

LAPD Responsibilities

1. Review Initial Vision and Scope Document
2. Provide feedback in the Vision & Scope GAP Document
3. Review and provide feedback on the Final Vision & Scope Document
4. Approve and Sign-off on the Final Vision and Scope Document

Motorola Deliverables

Title	Description
Vision and Scope Document	
Gap Analysis	

3.3.3 GIS Boundary Workshop

Response Boundaries are features that are represented geometrically by a polygon (area) which represent the smallest level of response and resource assignment. For law enforcement agencies, a response boundary is typically referred to as a "beat" and collections of beats define the "sectors" and "areas" of response plans and/or run cards.

It is expected that PremierOne customers are already maintaining their GIS data in ArcGIS. During this activity Motorola will review the LAPD's GIS data with a focus on the response boundary requirements. The PremierOne GIS Requirements document (Exhibit XX) will be the basis of the GIS review.

LAPD personnel that participate in this activity should include those very familiar with GIS operations.

Motorola Responsibilities

1. Review the PremierOne GIS Requirements document.
2. Review the GIS data and identify the boundary requirements.

LAPD Responsibilities

1. Provide Motorola with existing GIS data.
2. Update GIS data as necessary to develop response boundaries in conformance with the GIS Requirements document.

Motorola Deliverables

Title	Description
GIS Boundary Requirements	

3.3.4 CAD Metrics/Data Gathering

Motorola will work with the Department to gather the data elements required to provision the system.

Motorola Responsibilities

1. Gather data related to provisioning and system configuration
2. Import data tables where possible

LAPD Responsibilities

1. Provide data as requested
2. Review provisioning import tables and work with Motorola to provide data in format

Motorola Deliverables

Title	Description
Data Gathering checklist	

3.3.5 Workstation Installation

Client software will be installed on up to five (5) workstations to facilitate provisioning, training and testing and provide instruction to LAPD personnel who will complete software installation on the remaining workstations.

Motorola Responsibilities

1. Verify system readiness
2. Provide instruction and documentation on client software installation on up to five (5) CAD workstations.
3. Verify client software installation

LAPD Responsibilities

1. Provide workstation hardware in accordance with specifications
2. Provide room, seats and AV equipment as requested
3. Assign personnel to observe software installation training
4. Complete installation of client software on remaining workstations.

Motorola Deliverables

Title
Pre-Install Prep Checklist
Provisioning Workbook
Installation Guide

3.3.6 Motorola Led Provisioning

Motorola will perform CAD system provisioning based on the data gathered during the BPR and completion of the provisioning workbooks.

Motorola Responsibilities

1. Review tables (configurable items) and associated customer data
2. Complete Data Entry (collaborate w/ customer)
3. Conduct Motorola Checkpoints.

LAPD Responsibilities

1. Verify data entry completed by Motorola
2. Provide data as needed
3. Conduct independent review of data entered to ensure quality
4. Participate in Motorola Data Checkpoints

Motorola Deliverables

Title
System Checkpoint milestone reports
Completed Provisioning Workbook

3.3.7 CAD User Interface Modifications

The objective of these tasks is to modify the user interface (UI) for the CAD client software. The options for modifying the UI will be presented to the LAPD and the initial modification effort will be performed and demonstrated. A single CAD UI will be tailored. After the initial UI modification, the

LAPD will have an opportunity to identify additional modifications which Motorola will deliver as the final version. Subsequent requests for changes will be managed via the change control process.

Motorola Responsibilities

1. Present available options for modifying the CAD UI.
2. Perform the initial UI modifications.
3. Review UI.
4. Make final modifications to the UI and deliver it.

LAPD Responsibilities

1. Participate in initial meetings to define requested UI modifications
2. Evaluate the UIs after the initial delivery and identify any final modification requests.

Motorola Deliverable

Title
CAD UI

3.3.8 Provisioning Verification

Motorola and the LAPD will exercise the CAD system to verify the system has been provisioned in accordance with the Vision and Scope documents and that the system functions in accordance with the system documentation.

Motorola Responsibilities

1. Provide scripts with which to exercise system functionality.
2. Record discrepancies between data provided by the LAPD and the provisioning tables
3. Update provisioning tables, if required.
4. Document any system defects identified during the verification process.

LAPD Responsibilities

1. Ensure the availability of the SME's that participated in the BPR and provisioning training for this activity.
2. Work with Motorola to verify provisioning has been completed in accordance with the Vision and Scope documents.
3. Work with Motorola to document any system defects.

Motorola Deliverables

Title
Provisioned System

3.3.9 PMDC Design Document

Motorola will develop the detailed design documents for PMDC Messaging based on the PMDC FSD previously reviewed. The mobile query and mobile dispatch screen layouts will be defined.

Motorola Responsibilities

1. Develop and document the requirements for the PMDC client software cut (Custom Pack)

Motorola Responsibilities

1. Work with Motorola to develop PMDC Custom Pack requirements

Motorola Deliverable

Title
PMDC Design Document

PMDC Considerations:

Motorola recognizes that the large number of MDTs in the LAPD enterprise presents unique deployment challenges related to several activities including client software installation, end user training, the initial go-live, and the logistics of future upgrades.

As it relates to client software installation, it is Motorola's understanding that the current LAPD mobile software environment requires every MDT to be physically touched by the IT staff in order to push out any software upgrade, patches, and configuration changes. Motorola has included efforts to install the PMDC client software on five (5) mobile devices and provide training to IT personnel on installation procedures. The current mobile software environment requires a large labor effort for the department to install software on the remaining mobile devices. Motorola would like to discuss the option of the department upgrading the current "DeepFreeze" environment to "Deep Freeze Enterprise" or another 3rd party Mobile Data Management deployment. Motorola believes that moving to an environment that allows for over-the-air upgrades will substantially reduce the LAPD staff effort required to deploy PMDC on the mobile fleet. Additionally, the time to push mobile upgrades in the future will be dramatically decreased, provide a significant annual savings in labor efforts of your IT staff, and a substantial improvement in efficiency to your mobile management needs, year over year. Motorola welcomes the opportunity to discuss the mobile client software installation in more detail.

3.3.10 PMDC Custom Pack

Motorola will develop an initial cut and a final cut of the PMDC custom pack that will be delivered and installed. The LAPD will review the initial cut and will identify any discrepancies or defects between the software and the specifications on a defects list. Motorola will develop the final cut of the software based on that list.

Motorola Responsibilities

1. Place an internal order for production of the initial client cut of Premier MDC software
2. Develop the initial client cut of Premier MDC software based on the design documents
3. Install the client software on five (5) mobile devices
4. Document client software defects, if necessary
5. Resolve list of defects in final cut of client software
6. Deliver final cut of client software and install it on five (5) mobile devices

LAPD Responsibilities

1. Review the initial release of the Custom Pack and document any deficiencies or defects.
2. Install client software on all mobile devices beyond those installed by Motorola

Motorola Deliverable

Title
PMDC Custom Pack

3.4 HARDWARE AND SOFTWARE

Motorola will procure the primary system equipment in accordance with the approved equipment list. Procurement of Disaster Recovery system equipment is not included in the scope of this contract and will be procured during Phase 2 activities.

3.4.1 System Staging

The objective of this activity is to install the Motorola procured hardware and software components at Motorola's staging facility. The system will then be tested and verified to be operational in a staged environment. Once validated by Motorola in Schaumburg, IL, the system will be packaged and shipped to the LAPD's location for installation.

Motorola Responsibilities

1. Order all hardware, software and related components and deliver them to Motorola's staging facility.
2. Install and configure system software.
3. Load preliminary provisioning data.
4. Verify initial PremierOne and PMDC functionality in accordance with release criteria.
5. Ship staged system to the LAPD's site.

LAPD Responsibilities

1. Provide appropriate receiving facility for the system equipment.

Motorola Deliverables

Title
Equipment Inventory
Staged System Delivery

3.4.2 On-Site Installation

The objective of this activity is to install the system at the LAPD's site. The output of the activity will be an installed PremierOne system. This activity addresses physical installation activities and system connectivity verification.

Motorola Responsibilities

1. Install the staged system in the LAPD's environment.
2. Conduct a Power On test to validate that the installed hardware and software are ready for configuration.

LAPD Responsibilities

1. Certify that the server room, workstations are available and meet agreed upon specifications.
2. Install the client software on the balance of workstations.

Motorola Deliverable

Title
Power On Verification

3.5 INTERFACES

Motorola will develop and configure PremierOne interfaces to the third-party systems as listed in the TSSD. Interfaces included as part of Motorola's deliverables will be developed or configured per Interface Requirements Documents (IRD) that list the specific requirements of the contracted interfaces and are installed and validated to provide the features listed in the IRDs.

- Motorola is not responsible for managing any third-party systems and/or software not included as part of Motorola's proposed solution.
- In cases where it is necessary for Motorola to work with the LAPD's 3rd party vendors to develop interface requirements, the LAPD will be responsible for facilitating communications between Motorola and the 3rd party vendor
- LAPD will be responsible for any costs associated with efforts required of the LAPD's 3rd party vendors, which may include professional services, API/SDK fees, licenses, and configuration or development, if necessary to support desired interface functionality
- Motorola assumes no responsibility for training, installation; configuration, on-going support or warranty for any third-party systems and/or software not included as part of Motorola's proposed solution.
- Motorola assumes no responsibility for issues arising from lack of engagement of third-party and/or LAPD resources to perform work related to the interface, or troubleshooting any issues on the LAPD's third-party systems.

3.5.1 Interface Requirements Gathering

The purpose of this activity is to understand the requirements of each proposed interface by analyzing the LAPD requirements for each. The products of this exercise are Interface Requirements Documents ("IRD") that describe the connectivity and functionality for each interface.

Motorola Responsibilities

1. Conduct meetings to explain how the interface requirements are expected to be met by the PremierOne and PMDC systems and interfaces to external systems.
2. Solicit information on the business processes and workflows for each interface.
3. Document interfaces requirements.
4. Develop and deliver Interface Requirements Documents for each interface.

LAPD Responsibilities

1. Make knowledgeable individuals available for the interface requirements meetings.
2. Provide documentation on current usage of each interface and its desired interaction with the PremierOne portfolio of products.
3. Facilitate a visit to the CAD Unit, if requested.

Motorola Deliverables

Title
Interface Requirements Documents

3.5.2 Interface Installation and Configuration

Connectivity will be established between PremierOne and PMDC and the external and/or 3rd party systems to which PremierOne and PMDC will interface. Motorola will configure PremierOne and

PMDC to support each contracted interface. The LAPD is responsible for engaging 3rd party vendors if and as required to facilitate connectivity and testing of the interfaces. The LAPD will be responsible for any charges required by the 3rd party vendors, if necessary to support the interfaces.

Motorola Responsibilities

1. Establish connectivity to external and 3rd party systems.
2. Configure interfaces to support the functionality described in the IRDs.
3. Perform unit testing of each interface.

LAPD Responsibilities

1. Act as liaison between Motorola and 3rd party vendors or systems as required to establish interface connectivity with PremierOne and PMDC.
2. Provide personnel knowledgeable with the network and 3rd party systems to support Motorola's interface installation efforts.

Motorola Deliverables

Title	Description	Format
Unit Test Results	Documents that describe the results of interface unit testing.	Microsoft Word document

3.6 CAD AND PMDC TAILORING

3.6.1 Intelligent Data Dashboards

The objective of this task is to introduce the functionality available via the IDD tool, review the standard CAD dashboards, and define and develop custom dashboards. (IDD Training will be conducted in accordance with the training plan.)

This effort will utilize the LAPD's existing Microsoft SQL Server licenses and BI tools to configure dashboards and data views using data available from the LAPD's PremierOne environment.

Motorola Responsibilities

1. Conduct a two (2) day overview/consultation to review three (3) standard dashboards and define requirements for two (2) custom dashboards.
2. Document requirements for the custom dashboards.
3. Develop two (2) custom dashboards.
4. Install the standard and custom dashboards. (This task will occur during the IDD training course.)

LAPD Responsibilities

1. Assign resource(s) that have received the CAD Adhoc Reporting training to participate in the initial dashboard consultation and review delivery of the dashboards.

Motorola Deliverable

Title
CAD Dashboards

3.7 PREMIERONE ACCEPTANCE TESTING

Acceptance tests will be performed to confirm that the PremierOne and PMDC systems perform in accordance with the Acceptance Test Plan.

3.7.1 Project Test Plan

The objective of this series of tasks is to finalize the test activities that will be conducted in accordance with the mutually developed Acceptance Test Plan.

Motorola Responsibilities

1. Review the schedule of test activities.

LAPD Responsibilities

1. Schedule appropriate resources to participate in test activities.

Motorola Deliverable

Title
Test Schedule

3.7.2 Functional Acceptance Testing

The objective of functional acceptance testing is to test each function of the system to ensure that it is performing according to the contractual requirements.

Motorola Responsibilities

1. Conduct functional acceptance testing according to the approved test plan.
2. Develop remediation plan for features that fail the test.

LAPD Responsibilities

1. Witness the functional acceptance testing and acknowledge its successful completion.
2. Participate in the documentation of items that fail testing and note the remediation action

Motorola Deliverable

Title
Completed Functional Acceptance Test Plan

3.7.3 User Acceptance Testing

Upon successful completion of the functional acceptance test, the system will be delivered to the LAPD to conduct customer-developed test scripts over a 2 week period.

Motorola Responsibilities

1. Provide support during user acceptance testing.

LAPD Responsibilities

1. Develop test scripts, as required.
2. Promptly report any anomalies discovered during the test period.

Motorola Deliverable

Title
Completed Functional Acceptance Test Plan

3.7.4 Interface/Integration Testing

The objective of Interface functional testing is to ensure that the installed interfaces perform according to the IRD requirements. Note that interfaces that cannot be tested due to connectivity issues to external systems or the unavailability of LAPD's third party vendors will be tested to the degree the PremierOne functionality can be demonstrated and considered successful upon that demonstration. Motorola is not responsible for troubleshooting any issues on the LAPD's third-party systems.

Motorola Responsibilities

1. Conduct interface functional testing according to the approved test plan.
2. Develop remediation plan for features that fail the test.

LAPD Responsibilities

1. Provide access to or a resource with access to the interfacing system to validate functionality.
2. Witness the execution of the test and acknowledge successful completion.
3. Participate in the documentation of items that fail testing and work with Motorola to develop remediation action(s).

Motorola Deliverable

Title
Completed Interface Acceptance Test Plan

3.8 PREMIERONE TRAINING

The objective of this task is to prepare for and deliver instructor-led classroom training in accordance with the Training Plan.

Motorola Responsibilities

1. Perform training in accordance with the Training Plan.
2. Provide limited remote support following the Train-the-Trainer courses while LAPD trainers conduct end user training.

LAPD Responsibilities

1. Supply suitably configured classrooms with a workstation for the instructor and at least one workstation for every two students.
2. Designate training representatives who will work with the Motorola trainers in the development and delivery of training.

Deliverables

Title
Classroom Training Materials
Training Evaluation Form
Attendance Rosters

Title
Training Completion

3.9 GO LIVE

The objective of this task is to transition operations from the legacy operations and systems to the PremierOne CAD and PMDC Mobile system.

Motorola will work with the LAPD to develop the cutover plan. This plan will include tasks that need to be performed leading up to and following the actual cutover from legacy systems to the PremierOne system.

The cutover plan will also identify the process that may be used in the event that operations need to fall-back to the legacy system.

The transition to production use of the PremierOne system will be conducted according to the agreed cutover plan on a date and time mutually determined by the LAPD and Motorola. The timing of this event is typically during a time of low activity levels. Motorola expects the cutover to PMDC will occur several hours after the CAD go live to ensure CAD users are not experiencing any issues. This will result in no mobile dispatch or mobile communications being available until PMDC is brought up.

The outcome of these activities is the beginning of production use of the new system and commencement of the warranty period.

For Go-live with PMDC, It is Motorola's recommendation that users stop using the legacy mobile system when PremierCAD is brought down. PremierOne CAD will be brought live and will be in production use for several hours prior to bringing PMDC up. During this time, no mobile communications with PremierOne CAD will be available. Once PremierOne CAD has demonstrated reliable operations for several hours and CAD users are comfortable, production use of PMDC will commence. Motorola will work with LAPD to determine the best approach for that, i.e. bringing units up on a division-by-division basis or another method, if preferred. Motorola will support the live-cut of PremierOne CAD and PMDC for several days to ensure both systems are operating as expected. Motorola's Project Manager will work with the LAPD project manager and project staff to develop the CAD and mobile cut-over plan, taking into consideration all contributing factors.

Motorola Responsibilities

1. Facilitate meetings with LAPD staff to formulate the cutover plan.
2. Execute the cutover plan.
3. Provide on-site resources to support users with features and functions of the system.

LAPD Responsibilities

1. Arrange for the participation of appropriate technical and operational staff in cutover planning meetings.
2. Provide appropriate staff to perform/support production cutover activities.

Deliverables

Title
Go Live Briefing
Go Live

3.10 PROJECT CLOSURE – TRANSITION TO SUPPORT

Following Go Live and the performance and reliability test periods, the system is deemed complete and the completion milestone will be acknowledged by Motorola and LAPD. The system will transition to the support phase of the contract per the terms and conditions of the Maintenance and Support Agreement.

The objective of this task is to formally close the implementation project and introduce the LAPD to Motorola's Support organization.

Motorola Responsibilities

1. Initiate the Customer Support Handover document and provide it to the LAPD.
2. Review Support and Maintenance provided by third-party partners.
3. Upon receipt of the completed Customer Support Handover document schedule the support handover meeting with the LAPD and the Customer Support Manager (CSM).

LAPD Responsibilities

1. Provide information, as required, to complete the Customer Handover document.
2. Participate in the Customer Support Handover meeting.

Deliverables

Title
Customer Support Handover document

SECTION 4

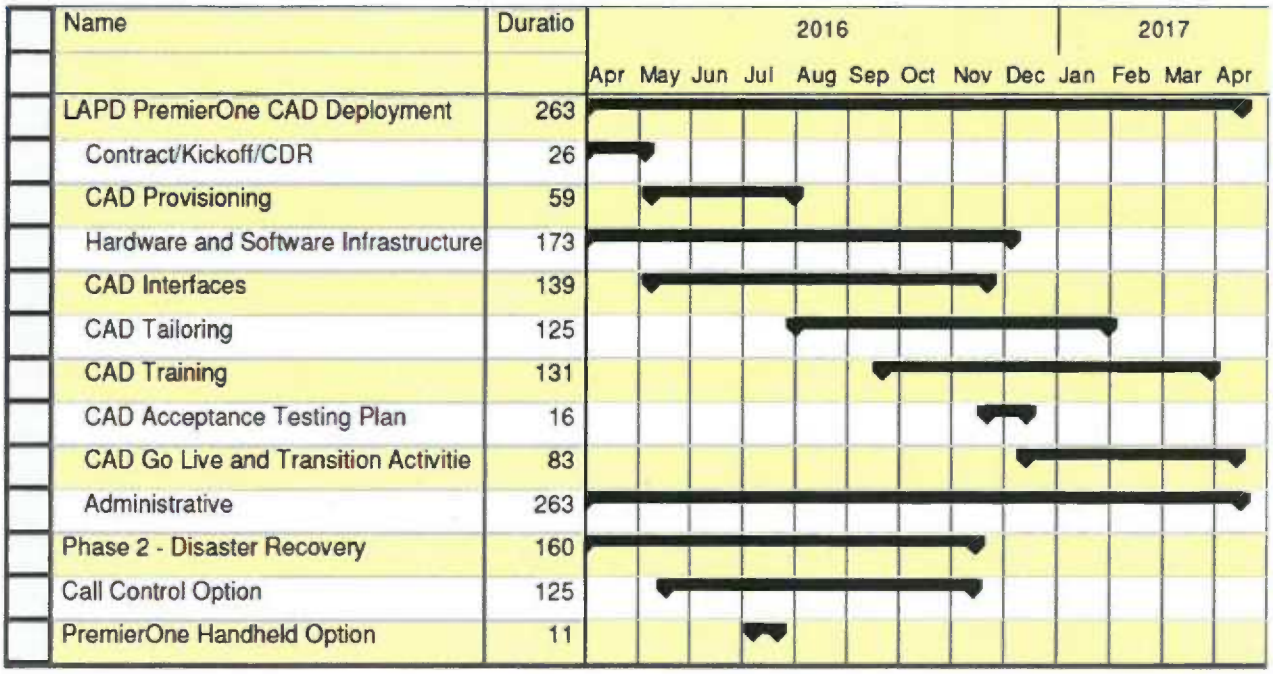
PERFORMANCE SCHEDULE

The following pages provide the estimated Performance Schedule.

The Duration column shows the approximate window during which the task is to occur. The activity will not necessarily occupy the entire Duration shown.

Task order and timeframes can and will be modified by Project Manager to meet expected customer milestones.

LAPD_P1 CAD MOB MIG CAP15P105J - Gantt Chart (Read-Only)



SECTION 5

TRAINING PLAN

5.1 COURSE LISTING

The following matrix delineates the classes that have been proposed for the PremierOne product line. The matrix includes the number of classes per course type, the maximum number of participants per class and the location of each of the classes. Additional class modules may be obtained by the Customer for an additional fee.

Course Module	Maximum No. Attendees Per Class	Number of Classes Included	Total Users Trained	Location	Not To Exceed (hours) per Class
Importing GIS Data into PremierOne	4	1	4	Customer	16
PremierOne CAD Provisioning Training	6	1	6	Customer	48
PremierOne CAD Client Installation	6	1	6	Customer	4
PremierOne CAD Overview	6	1	6	Customer	40
PremierOne CAD Provisioning Verification	6	1	6	Customer	24
PremierOne Computer Aided Dispatch Train-the-Trainer	12	3	36	Customer	32
PremierOne CAD System Administrator	4	1	4	Customer	16
Ad Hoc Report Builder Training in PremierOne for CAD	6	1	6	Customer	24
Data Feed Framework Training	4	1	4	Customer	16
Premier MDC Train-the Trainer	12	9	108	Customer	8
Intelligent Data Dashboard Training	4	1	4	Customer	24

5.2 TRAINING OVERVIEW

Motorola considers training to be an extremely important aspect of the system installation and requires working closely with the Customer. Prior to the start of training, the Customer will designate a Customer Training Representative. This individual must be familiar with the Customer's daily

operations and must attend each Motorola educational course. Motorola trainers will rely on this representative to be the one point of contact for Motorola staff when policy and procedural questions arise, act as course facilitator, and act as the Customer's educational monitor. The Customer will also identify the personnel who will serve as trainers. These individuals must participate in all the Train-the-Trainer courses. In addition to the skills described below, the Customer's trainers must have prior experience as a classroom instructor and a thorough understanding of the Customer's operations. Other courses will require participants from different areas of the Customer's operations as shown in the individual course descriptions, detailed in Motorola training course descriptions.

As it relates to user training, Motorola's proposal includes nine (9) 1-day PMDC Train the Trainer courses, as described in the Training Plan. Up to twelve (12) field training officers may attend each course, resulting in up to 108 FTOs being trained. Motorola estimates the end user training will be approximately 4-5 hours. The number of end users that the FTOs can train is dependent on the number of devices which will be available for training and officer scheduling. For example, if 10 FTOs conducted two classes per shift of 5 users per class (50 mobile devices would have to be simultaneously available), 100 users would be trained per shift. If training is conducted during 3 shifts per day, 300 users will be trained per day and 6000 users can be trained in 20 days. The Motorola Project Manager and the LAPD Project Manager will review the end-user training schedule once the availability of mobile devices for training is known and update the project schedule accordingly.

5.2.1 System Administrator

The Customer will be obligated to appoint a key individual to act as the System Administrator. This individual will be responsible for reporting/verifying problems, completing and maintaining application configuration, and performing system administrative duties such as system back-ups, archives, etc. The designated individual should be proficient in the prerequisite technologies. These technologies are embedded in the Motorola applications; however, training in these technologies is not provided by Motorola. Below is a suggested list of courses supporting Microsoft technologies.

PremierOne clients operate on Windows 7.

Microsoft

Technologies:

- Windows Administration
- SQL Server 2012
- SQL Server Reporting Services
- System Center 2012 (SCOM)

Suggested Courses:

- 10967A Fundamentals of a Windows Server Infrastructure
- 6292 Installing and Configuring Windows 7 Client
- 10775 Administering Microsoft SQL Server 2012 Databases
- 55021 Configuring and Administering Hyper-V in Windows Server 2012
- 50273 Planning and Designing Microsoft Virtualization Solutions
- 55006 System Center Operations Manager 2012

5.2.2 Training Facilities and Schedules

The Customer shall provide facilities for training courses which are alcohol and smoke-free. Both the classroom and workshop classes will require a white-board for instructor's use and shall accommodate student note taking. The workshop format also requires multi-monitor student

workstations. Students and instructors will dedicate class time to training and will not be subject to interruptions. At least two days prior to each training course, the instructor shall have access to the training facility and all workstations for setup and workstation configuration. All training will be held at the Customer's site; the instructor shall notify the Customer in advance of any teaching about aids such as chalkboards or overhead projectors which will be required in the facility.

Motorola and the Customer shall mutually agree to training schedules to accommodate the Customer's shift operations and other site-specific requirements. Evening courses will end by 10:00 p.m.

5.2.3 Training Methods and Procedures

Motorola offers two types of training classes:

1. Administrative workshops; focused on providing specialized users with in-depth knowledge on the features, operational, and administrative functions of the system.
2. Train-the-Trainer; instructor-led classroom training that provides key individuals with extensive hands-on use of the system utilizing true-to-life incident scenarios so they can develop and provide training to new users.

Students must have a typing proficiency of 25 wpm, knowledge of PCs and Microsoft Windows, and have completed course prerequisites as listed in the course descriptions.

Designated Motorola Business Analysts will provide application instruction using several techniques and materials.

- Instructor Lesson Plan: The instructor's tool for planning the detailed course content on a module-by-module basis.
- Training Course Agenda: The student handout that outlines the course sequence of events including duration, and course modules.
- Training Course Objectives: The instructor's predefined course objectives. These are provided for Train-the-Trainer classes only.
- Training Observation Forms: The instructor's tool for tracking the student's ability to perform the skills taught in the class. These are provided for Train-the-Trainer classes only. Motorola instructors will complete the observation forms and provide them to the Customer Training Representative upon completion of the course. Motorola does not make a pass/fail determination for participating students.
- Evaluations: On the final day of a training class, the students will be asked to complete an Instructor Evaluation form. They are optional forms and anonymity is acceptable.
- Certificates of Attendance: Students completing the Train-the-Trainer class will receive Certificates of Attendance.
- Attendance Rosters: Customers will provide to the Motorola instructor a roster listing the names of training participants ten (10) days prior to the start of the course. Instructors will complete Attendance Rosters of actual participants for each day of training.
- Motorola PremierOne User Documentation: An electronic copy of the applicable Motorola Reference Manuals and documentation will be provided prior to training. The Customer is responsible for duplicating and delivering manuals to participating students prior to class commencement.

5.2.4 Training Subsystem

PremierOne has a fully functional training environment that will enable the Customer's trainers to provide on-going end-user training. This training subsystem allows training to continue without interruption of the real time operations. Use of the training subsystem is covered in the Train-the-Trainer classes.

5.2.5 Session Attendance

Motorola is committed to providing a quality training experience and desires that the Customer receives the maximum benefit from each training session. Each training session has been sized to provide the optimal training environment that meets the needs of the students in relation to the complexity of the material being presented. Given the nature of the material being presented and the intensity of the training, it is imperative that maximum course numbers not be exceeded. In the event the number of students in attendance exceeds the published maximum number of students and the list of participants identified on the training roster, Motorola will take corrective action, ensuring the integrity of the session is maintained and the student's ability to learn is protected. Motorola corrective action may include:

- Delaying the start of training until the number of students in attendance is in line with the maximum number of students allowed for the session.
- Splitting the class into multiple sessions. In such a case, the Customer will be charged for multiple occurrences of the class plus additional expenses, including travel related expenses, incurred by Motorola.

5.3 COURSE DESCRIPTIONS

The following tables provide detailed descriptions of training courses that will be provided as part of the system at the location indicated.

Table 5-1. Managing GIS Data with PremierOne Import Tool

Goal:	This course offers the skills and practice necessary to use the PremierOne Import tool and create the required databases and mxd docs for CAD. The module covers the use of the import tool to build the required file and SDE Geodatabases for the PremierOne CAD system.
Location:	Customer's facilities
Format:	Combined classroom and workshop
Course Materials:	PremierOne GIS System Administrator Training Guide
Duration:	Up to 8 hours in a single business day
Participants:	GIS personnel and GIS System Administrator(s)
Class Size:	Maximum of 4 students
Prerequisite:	Computer knowledge and PC skills including DOS and Microsoft Windows, and basic PC functionality. Completion of Windows tutorials or equivalent training. Basic understanding of geographical data and proficient in the use of ArcGIS. A day of prep to ensure a working SDE connection to the PremierOne server from the machine the GIS import tools are installed on.
Instructor:	Motorola GIS Mapping Business Analyst

Table 5-2. PremierOne CAD Client Installation

Goal:	Provide selected personnel with sufficient knowledge to install PremierOne CAD client software on workstations. Includes prerequisite third-party software. If the customer desires, an imaging solution can be presented.
Course Materials:	Course Outline
Location:	Customer's facility
Duration:	4 hours of training Contract may include time for Motorola to install on a maximum of 10 workstations
Participants:	IT staff who are responsible for installing workstation software
Class Size:	Maximum of four (4) students
Prerequisite:	Knowledge of Microsoft operating systems and basic software installation practices
Instructor:	Motorola Business Analyst
Environment Setup:	Each workstation should have a network connection to the PremierOne servers. Each workstation should meet the specifications of the appropriate set of Release Notes. Each workstations should have an operating system installed that is supported by PremierOne (as detailed in the Release Notes)

Table 5-3. PremierOne CAD Provisioning Training

Goal:	Provide detailed instruction on Computer Aided Dispatch (CAD) provisioning data files.
Course Materials:	PremierOne CAD Provisioning Guide Course Outline
Location:	Customer's facility
Duration:	Up to 24 hours per week over two consecutive weeks
Participants:	Those responsible for making the decisions on configuration options.
Class Size:	Maximum of six (6) students
Prerequisite:	Knowledge of current CAD application and configuration and agency SOPs. Microsoft and Esri proficiency as defined in the Prerequisites Section.
Instructor:	Motorola Business Analyst
Environment Setup:	One (1) workstation for each participant Instructor's workstation(s) Projector White board (if possible) Microsoft Excel should be installed on at least one training workstation
NOTE:	Allow a minimum of four weeks from the end of provisioning training and the beginning of Train-the-Trainer so that the customer can complete provisioning changes and updates.
Motorola Staff Days:	6 days (3 days onsite per week for 2 week period)

PremierOne CAD/Mobile Overview

Goal:	Provide selected personnel with sufficient functional knowledge to verify system provisioning.
Course Materials:	CAD User Guide Course Outline
Location:	Customer's facility
Duration:	Up to 24 hours over three consecutive business days
Participants:	Users that have participated in the business process review and provisioning process.
Class Size:	Maximum of six (6) students
Prerequisite:	Knowledge of current CAD application and customer operations.
Instructor:	Motorola Business Analyst
Environment Setup:	A workstation for each participant with network connection Instructor's workstation(s) with network connection Projector White board (if possible)
Motorola Staff Days:	One (1) day of preparation on site Three (3) days training

Table 5-4. PremierOne CAD Provisioning Verification

Goal:	Provide an opportunity for the customer to vet their provisioning decisions in a hands-on class that demonstrates PremierOne CAD functionality.
Course Materials:	PremierOne CAD Provisioning Guide PremierOne User Guide Course Outline
Location:	Customer's facility
Duration:	24 hours
Participants:	Those responsible for making the decisions on configuration options. Power users of the current CAD system.
Class Size:	Maximum of eight (8) students
Prerequisite:	Knowledge of current CAD application and configuration and agency SOPs.
Instructor:	Motorola Business Analyst
Environment Setup:	One (1) workstation for each participant Instructor's workstation(s) Projector White board (if possible) Microsoft Excel should be installed on at least one training workstation
NOTE:	This class will follow within a short time after the completion of the PremierOne CAD Provisioning Training, allowing the customer to make any desired changes early in the process.
Motorola Staff Days:	3 days

Table 5-5. PremierOne Computer Aided Dispatch Train-the-Trainer

Goal:	Provide selected personnel with sufficient knowledge to support a comprehensive end user training program.
Course Materials:	CAD User Guide Course Outline
Location:	Customer's facility
Duration:	Up to 32 hours over five consecutive business days
Participants:	Instructors who are responsible for the in house training of employees and for ongoing user training.
Class Size:	Maximum of twelve (12) students
Prerequisite:	Knowledge of current CAD application and customer operations.
Instructor:	Motorola Business Analyst
Environment Setup:	A workstation for each participant with network connection Instructor's workstation(s) with network connection Projector White board (if possible)
NOTE:	Allow two weeks from the end of train-the-trainer to the beginning of end user training to allow customer to build site-specific documentation and outline for end user classes. The Motorola Business Analyst will be available for remote consultation in producing documentation and outline.

Table 5-6. PremierOne CAD System Administrator Training

Goal:	Provides practical techniques for system administration and maintenance of the CAD components of the PremierOne system.
Course Materials:	CAD System Administration Guides Course Outline
Location:	Customer's facility
Duration:	Up to 16 hours over two consecutive business days
Participants:	Personnel responsible for the day to day management of the system.
Class Size:	Maximum of four (4) students
Prerequisite:	Knowledge of customer site network, IT policies and operations. Microsoft proficiency as defined in the Prerequisites Section.
Instructor:	Motorola Business Analyst
Environment Setup:	Instructor's workstation(s) with network connection. Projector White board (if possible)
Motorola Staff Days	One (1) day of preparation on site Two (2) days training

Table 5-7. Ad Hoc Report Builder Training in PremierOne CAD

Goal:	Provide selected personnel with knowledge on how to create ad hoc reports against the PremierOne Report Data Warehouse using Microsoft's SQL Server Reporting Service (SSRS) software.
Course Materials:	SSRS Training Guide
Location:	Customer's facility
Duration:	Up to 24 hours over three consecutive business days
Participants:	Personnel who will create ad hoc reports
Class Size:	Maximum of six (6) students
Prerequisite:	Some knowledge of creating ad hoc reports
Instructor:	Motorola SSRS and Reports specialist
Environment Setup:	A workstation for each participant with network connection Instructor's workstation(s) with network connection Projector White board (if possible)
Note:	Sufficient sample data will need to be present in order to build realistic reports during class. It is recommended that this class take place after CAD Train-the-Trainer to facilitate this need.
Motorola Staff Days:	One (1) day prep Three (3) days training

Table 5-8. Data Feed Framework Training

Goal:	Provide selected personnel with knowledge on how to export data from PremierOne CAD to third-party products using Microsoft's SQL Server Integration Services (SSIS) software
Course Materials:	Microsoft SSIS Documentation Course Outline
Location:	Customer's facility
Duration:	Up to 16 hours over two consecutive business days
Participants:	Personnel who will be responsible for managing export of data from the PremierOne CAD reports data warehouse
Class Size:	Maximum of two (4) students
Prerequisite:	Database administration experience, knowledge of data structures, data mapping, and a familiarity with Customer's operation. SQL Server administration and programming experience in SQL recommended. Working knowledge of Transact SQL and SQL Server Integration Services (SSIS) required.
Instructor:	Motorola Business Analyst
Environment Setup:	A workstation for each participant with network connection Instructor's workstation(s) with network connection The course will consist of up to sixteen (8) hours of instruction and the remaining time will be used for on-hands use of the tool with instructor support.
Motorola Staff Days:	Two (2) days training

Table 5-9. Optional NG-ICC (Call Control) Provisioning Training

Goal:	Provide detailed instruction on provisioning data files to support Next Generation Integrated Command and Control
Course Materials:	PremierOne CAD Provisioning Guide Course Outline
Location:	Customer's facility
Duration:	Up to 16 hours over two consecutive business days
Participants:	Those responsible for making the decisions on configuration options.
Class Size:	Maximum of six (6) students
Prerequisite:	Knowledge of current radio application and configuration and agency SOPs.
Instructor:	Motorola Business Analyst
Environment Setup:	One (1) workstation for each participant Instructor's workstation(s) Projector White board (if possible)
NOTE:	Allow one week from the end of provisioning training and the beginning of Train-the-Trainer for customer to complete provisioning changes and updates.
Motorola Staff Days:	One (1) day of preparation on site Two (2) days training