



Waynesville Police Department Communication Center

Bid Proposal FBR 275-23-2

The Waynesville Police Department is soliciting formal proposals for equipment, products and services that meet the general needs of their Communication Center.

Bid packets can be downloaded from the Town's website at waynesvillenc.gov

Bid submission envelopes must be sealed and clearly marked, "Communication Equipment Bid"

Closing date for acceptance of sealed bids will be 2:00 PM, Wednesday, January 18, 2023. Bids will be opened by the Purchasing Supervisor directly afterward at Public Works, 129 Legion Drive, Waynesville, NC 28786.

The Purchasing Supervisor will present the bids for discussion to the Waynesville Police Department on January 19, 2023. Final award will be made by the Board of Alderman in February 2023.

Specifications, descriptions, and conditions upon which the quote request is based are attached.

The Town of Waynesville reserves the right to reject any and all bids, to waive any irregularities and further, reserves the right to accept any bids or parts of bids, which it deems will best serve the interest of the Police Department.

A message from the Town of Waynesville

The Town of Waynesville is fully committed to provide Small Local Business Enterprises (SLBE's) and Minority Business Enterprises (MBE's) an equal opportunity to participate in all aspects of the Town's contracting including, but not limited to participation in the procurement of contracts relating to the construction of and improvements to facilities throughout the Town. It is also the policy of the Town to prohibit discrimination against any person or business in pursuit of these opportunities on the basis of race, sex, color, religion, or national origin and to conduct its contracting and purchasing programs to prevent such discrimination. The Town is also committed to follow all applicable State and Federal law as they relate to procurement practices.

The Town will actively seek and identify qualified SLBE's and MBE's to offer them the opportunity to participate in the procurement of contracts for all Town purchasing and service contracts as well as construction and repair contracts.

The Town aspires to spend 10% of its eligible contract dollars with Minority Business Enterprises and contractors.

For more information or questions about the MBE Outreach policy, please contact the Purchasing Department at 828-456-3706.

Notice to Bidders Instructions for Bid Proposals

Examination of Bid Specifications

Before submitting a bid proposal, each bidder shall carefully examine the specifications to be fully informed as to all existing conditions and limitations.

Bidders shall submit a bid proposal price based on the full equipment and installation cost for a Dispatch Console System outlined in the specifications. Bidders must include a 5-year service plan with equipment.

All current equipment to be replaced as part of this bid specification is available for inspection by the bidder. All inspection requests shall be made by appointment through the Waynesville Police Department.

Withdrawal of Bid Proposal

Any bid proposal may be withdrawn at any time before the scheduled deadline by written request to the Purchasing Supervisor.

Bid Form

Each bid proposal shall be made in an itemized format to the Town of Waynesville and shall be submitted in a sealed envelope bearing the name of the bidder and clearly marked "Communication Equipment Bid".

Any modifications or deviations from the bid specifications must be specified in writing.

Bid Proposals shall be submitted by the date and time indicated under "Bid Proposal". It is the sole responsibility of the bidder to ensure that their respective bid proposal is received by the closing date and time. Bid Proposals received after the closing date will be returned unopened to the bidder and will not be considered.

Bid Opening

Bid Proposals will be opened publicly and read aloud at Public Works, 129 Legion Drive, Waynesville, NC 28786 as indicated on page one of this agreement by the Purchasing Office.

Bid Proposal Conflicts

In the event of a difference between the stipulated amount written in numbers and the amount written in words, the stipulated amount written in words shall govern.

Insurance

Each bid proposal shall be accompanied with proof that the bidder is currently covered by Workers Compensation, Employee Liability, Comprehensive Public Liability, Bodily Injury and Property Damage insurance policies.

Duration of Contract

The quote contract will be in force throughout the installation and set-up process until such time as the Waynesville Police Department and the vendor agree that normal operation has been reached and minor adjustment phase has been completed. The equipment will then be maintained under a general radio maintenance contract with the vendor for a period of 5 years.

Vendor must be able to respond to repair calls within one (1) hour when notified of problem.

Eligibility

Company must have the necessary training to install the system to specifications. A certified technician must be hands-on available for the duration of installation and setup.

Listing of FCC Approved Equipment

The bidder shall show a list of FCC approved frequency and modulation measuring equipment that is available to them. This shall include model and serial numbers of each piece of equipment.

List of Technicians/References

The bidder shall provide a list of their certified technicians.

The bidder shall supply WPD with a current list of customers that are utilizing systems comparable to theirs.

Exceptions

Bidders may take exceptions to any of the specifications as listed in this agreement. A letter explaining the reason for each exception must be included as part of the bid proposal. The letter must be clearly marked "Exceptions to the Bid Specifications".

Hourly Rate

The bidder shall provide the hourly rate for work performed outside of this proposal for the term of this agreement.

Evaluations

The Town of Waynesville reserves the right to select the proposal which best meets its needs, regardless of the cost of that proposal relative to other proposals received.

The evaluation process will begin after the proposals are due and is anticipated to take a couple of weeks. During this review process, the evaluators may request additional clarifying information from the vendor.

Evaluation criteria include the following:

- Completeness – Did the vendor provide everything which was requested and in the proper format?
- Functionality – Does the proposed solution include the functionality which is essential to Waynesville Police Department.
- Cost – Does the proposed solution provide the needed functionality at a reasonable cost to WPD?
- Maintenance and Support – Thoroughness of support program, reputation of company with customer’s responsiveness, thoroughness of testing, and availability and overall cost of support and upgrades. Response time will be an important consideration in the evaluation process.
- References and Experience– Quality of overall System, experience with implementation, experience with existing WPD systems, degree to which projects went over budget/schedule, company references.
- As part of the evaluation process, the evaluators may request site visits and demonstrations or oral presentations (in person or via teleconference) on the part of the vendor.

Special Terms and Conditions for Town of Waynesville

Summary: Bidders please note: This Request for Bids and Proposals includes provisions for the Town of Waynesville. Bids are to be submitted in accordance with the enclosed specifications and these Special Terms and Conditions, both of which require doing all that is necessary, proper, or incidental to the furnishing of the materials identified herein. All things not expressly stated in the attached specifications or Special Terms and Conditions but involved in carrying them out must be included in bidder's proposal as though they were specifically stated.

Notice to Bidders: All bids are subject to the provisions of the Special Terms and Conditions specific to this Request for Quotation and the Specifications. The Town of Waynesville objects to and will not evaluate or consider any additional terms and conditions submitted with a bidder response. This applies to any response appearing in or attached to the document as part of the bidder's response. This applies to any response appearing in or attached to the documents as part of the bidder's response. **DO NOT ATTACH ANY ADDITIONAL TERMS AND CONDITIONS.** By execution and delivery of a proposal, the bidder agrees that any additional terms and conditions, whether submitted purposely or inadvertently, shall have no force or effect. It shall be the bidder's responsibility to read this entire document, review all enclosures and attachments, and comply with all requirements specified herein.

Issuing Office: This bid is issued by the Town of Waynesville Purchasing Department, 129 Legion Drive, Waynesville, North Carolina 28786. All correspondence and inquiry should be made to this address. Telephone number (828) 456-3706, Fax Number (828) 456-2005.

Clarifications/Interpretations: Any and all questions regarding this document must be addressed to the Town of Waynesville Purchasing Department. Any and all revisions to this document shall be made only by written addendum from the Town of Waynesville Purchasing Department. Therefore, no oral statements by any person shall modify or otherwise affect the terms, conditions, or specifications stated in this request for bids and proposals. The bidder is cautioned that the requirements of this bid can be altered only by written addendum and that verbal communications from whatever source are of no effect.

Minor Deviations/Exceptions to Specifications: Minor deviations from the provisions of these specifications may be considered to permit manufactures to follow their standard manufacturing processes; however, all proposed minor deviations must be explained in detail and submitted within the exceptions to specifications, time frame identified herein.

The Town of Waynesville reserves the right to postpone bid openings for its own convenience.

Nonconforming Terms and Conditions: A bid response that includes terms and conditions in this bid document is subject to rejection as non-responsive. The Town of Waynesville reserves the right to permit the bidder/vendor to withdraw nonconforming terms and conditions from its bid response prior to a determination by the Town of Waynesville of non-responsiveness.

Bidders Submittals: Bidder must furnish all information requested herein including descriptive literature and/or complete specifications covering the products offered. Reference to literature submitted with a previous bid will not satisfy this provision. Bids which do not comply with these requirements will be subject to rejection. All documents submitted should bear the name of the bidder.

Expenses incurred in Preparing Bid: The Town of Waynesville accepts no responsibility for any expense incurred by the bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the bidder.

Tax Exemptions: The Town of Waynesville is exempt from Federal Excise Tax, but not State and Local Sales Tax. Sales tax should not be included in bid prices but may be added as separate items.

Evaluation and Selection of Bids: The evaluation of bids shall center on the match between the stated specification requirements in the final bid request and the vendor's proposed materials/equipment including selection of the lowest responsible/responsive bidder with consideration of past performance, service record and reliability.

The statutory provisions controlling purchasing by local governments in N.C. (RE: G.S. 143) includes selection standards for use in making awards. The provision reads, "A: contracts shall be awarded to the lowest responsible bidder taking into consideration quality, performance and the time specified in the bids for performance of the contract.

The Town of Waynesville reserves the right to accept or reject any or all bids and proposals further specifically reserves the right to make award to multiple vendors if in the best interest of the Town of Waynesville.

Indemnification: The bidder/vendor covenants to save, defend, keep harmless and indemnify the Town of Waynesville and all of its officers, departments, agencies, agents and employees from and against all claims, loss, damage, injury, fines, penalties, and cost-including court costs and attorney's fees, charges, liability and exposure, however caused

resulting from, arising out of, or in any way connected with the bidder's/vendor's negligent performance or nonperformance of the terms of the contract.

Assignment: During the performance of the contract, the bidder/vendor shall not assign, transfer, convey, sublet, or otherwise dispose of any award of or any or all of its rights, title, or interest therein, without the prior written consent of the Town of Waynesville.

All bids shall be made firm for no less than ninety (90) days.

Invoices and Payments: All invoices and packaging slip must bear Purchase Order number issued for that order. The Town is not exempt from sales tax. The tax must be shown as separate items on invoice.

Iran Divestment Certification: The Consultant certifies that it currently complies with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes, and that at all times during the term of this Contract, it will continue to comply with these requirements. Consultant also certifies that it will require that all of its subcontractors that perform any work pursuant to this Contract to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. Violation of this section shall be deemed a material breach of this Contract.

E-Verify Employer Compliance: Employers and their subcontractors with 25 or more employees as defined in Article 2 of Chapter 64 of the NC General Statutes must comply with E-Verify requirements to contract with governmental units. E-Verify is a federal program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law. E-verify can be accessed via this link: <http://www.uscis.gov/e-verify/employers>

Drug-Free Workplace: The Town of Waynesville has adopted a Drug-Free Workplace Policy requiring the contractor to ensure that a drug-free workplace is provided in the performance of this agreement. The requirements of that policy are included in the invitation to bid and included in the agreement for the construction of the Project.

Minority/Woman Business Enterprise (M/WBE) Policy Statement: It is the policy of the Town of Waynesville to ensure that all businesses, including M/WBEs, are afforded the maximum practical opportunity to participate in the Town's purchasing and contracting processes. Therefore, the Town will not enter into a contract or be engaged in a business relationship with any business entity that has discriminated in the solicitation, selection, hiring or commercial treatment of vendors, suppliers, Subcontractors, or commercial customers on the basis of race, color, religion, national origin, sex, age, or handicap.

Insurance Requirements: Insurance during the performance of the services under this Agreement, the Consultant shall maintain the following insurance.

General Liability Insurance, including but not limited to coverage for all premises and non-premises operations, independent contractors, broad form property damage coverage, including explosion, collapse and underground property damage hazards, personal injury liability protection including coverage relating to employment of persons, contractual liability protection, and products and completed operations coverage. This insurance shall provide bodily injury limits of not less than \$1,000,000 for each occurrence and not less than \$2,000,000 in the aggregate, and with property damage limits of not less than \$500,000 for each occurrence and not less than \$500,000 in the aggregate. The General Liability Insurance shall name the Town of Waynesville as an additional insured, and the insurance shall be primary and non-contributory to any other insurance that may be available to the Town.

Professional Liability Insurance with limits of not less than \$1,000,000 for each occurrence and not less than \$2,000,000 in the aggregate. This Professional Liability Insurance shall provide coverage for the claims concerning the Contractor's errors and omissions for the scope of services provided to the Town under this Agreement, including but not limited to, claims concerning the preparing, approving, or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders, or drawings and specifications, and claims relating to supervisory, inspection, architectural or engineering activities.

Worker's Compensation Insurance in accordance with statutory requirements and Employer's Liability Insurance with limits of not less than \$100,000 for each occurrence. In case any work is sublet under this Agreement, the Consultant shall require the subcontractor similarly to provide Worker's Compensation and

Employer's Liability Insurance for all of the subcontractor's employees to be engaged in such work. This Agreement shall be void and of no effect unless the Consultant shall secure and keep in effect during the term of this Agreement the Consultant's compliance with the provisions of the Worker's Compensation laws of the State of North Carolina.

Conflict of Interest: No officer, employee or agent of the Town, and no sub-grantee or sub-recipient of any federal or state funds from the Town shall participate in the selection or in the award or administration of a contract supported by federal, state, or City funds if a conflict of interest, real or apparent, would be involved. Such a conflict of interest would arise when any of the following persons or entities has a financial or other interest in the firm selected for the award:

1. The employee, officer, agent
2. Any member of his immediate family
3. His or her partner; or
4. An organization which employs, or is about to employ, anyone listed in (1) through (2) above.

The grantee or sub-grantee's officers, employees or agents will not solicit or accept gratuities, favors or anything of monetary value from contractors, potential contractors, or parties to sub-agreements except as may be allowed in the Town's Gift Policy.

Divestment from Companies Boycotting Israel Certification: As of the date of this Agreement, the Contractor certifies that it is not listed on the Final Divestment and Do-Not Contract List of Restricted Companies Boycotting Israel created by the State Treasurer pursuant to N.C.G.S. 147-86.81 and that the Contractor will not utilize any subcontractor found on the State Treasurer's Final Divestment and Do-Not-Contract List. All individuals signing this Contract on behalf of the Contractor certify that they are authorized by the Contractor to make this certification.

Federal Funding: If the source of funds for this contract is federal funds, the following federal provisions apply pursuant to 2 C.F.R. § 200.326 and 2 C.F.R. Part 200, Appendix II (as applicable):

Equal Employment Opportunity (41 C.F.R. Part 60); Davis-Bacon Act (40 U.S.C. 3141-3148); Copeland "Anti-Kickback" Act (40 U.S.C. 3145); Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708); Clean Air Act (42 U.S.C. 7401-7671q.) and Federal Water Pollution Control Act (33 U.S.C. 1251-1387); Debarment and Suspension (Executive Orders 12549 and 12689); Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). Procurement of Recovered Materials (2 C.F.R. § 200.322); and Record Retention Requirements (2 CFR § 200.324).

Uniform Guidance procurement policy: Contracts funded with federal grant or loan funds must be procured in a manner that conforms with all applicable Federal laws, policies, and standards, including those under the Uniform Guidance (2 C.F.R. Part 200).

Force Majeure: Neither party shall be deemed to be in default of its obligations hereunder if and so, as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

Non-Collusion Declaration

To be executed by bidder and submitted with bid

The undersigned declares:

I am the _____ (Title) of _____
(Company), the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham.

The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder.

All statements contained in the bid are true. The bidder has not, directly, or indirectly, submitted his or her bid price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the applicable laws that the foregoing is true and correct and that this declaration is executed on

_____ (Month) _____ (Day) of _____ (Year),
at _____ (City), _____ (State).

Signature of Declarant: _____

Printed name of Declarant: _____

Name of Bidder (Company): _____

Title or Office: _____

Federal Tax ID _____

REFERENCES

Provide, at a minimum, three (3) references in which your company has provided the specific systems preferably with government entities within North Carolina.

Agency/Company _____

Name: _____

Address: _____

Phone _____

Years Using System _____

Agency/Company _____

Name: _____

Address: _____

Phone _____

Years Using System _____

Agency/Company _____

Name: _____

Address: _____

Phone _____

Years Using System _____

Provide, at a minimum, three (3) references in which your company has provided the specific systems preferably with government entities within North Carolina.



FBR 275-23 Communication Equipment

Bidder: _____

Furnish, Deliver, and Install:

DESCRIPTION	BID AMOUNT
Dispatch Communication Center 2-person per specifications with an extended five (5) year service plan	
All additional equipment needed to make console fully integrated and operational with existing equipment in the Dispatch Center (such as but not limited to antennas, connectors, cable boxes, coaxial cable, and Type-C Trunking equipment etc.)	
License Key fees for all software programs	
Labor and programming charges of Console and other necessary equipment	
Shipping and handling charges estimation	
TOTAL BID AMOUNT	\$

Hourly labor cost for work not covered under the Service Plan	\$
Vendor must be able to respond to repair calls within one (1) hour when notified of problem	Yes _____ No _____

Company Name	Bid Submitted By (Signature)
Address	Printed Name and Title
City State Zip	Email Address
Telephone No.	Federal Taxpayer ID No.
Delivery _____ calendar days after receipt of order	<u>Payment Terms are Net 30.</u> No payment discounts apply in determining award.

TABLE OF CONTENTS

1. GENERAL REQUIREMENTS.....	17
1.1 QUALITY.....	17
1.2 CERTIFICATION AND REGULATORY APPROVALS	17
1.3 WARRANTY	17
1.4 REPLACEMENT PART AVAILABILITY.....	17
1.5 SYSTEM DOCUMENTATION.....	17
2. SYSTEM REQUIREMENTS.....	18
2.1 CONSOLE SYSTEM ARCHITECTURE.....	18
2.2 ENVIRONMENTAL.....	18
2.3 POWER	18
2.4 CONSOLE EQUIPMENT	19
2.5 TELEPHONE RADIO HEADSET INTEGRATION (TRHI).....	19
2.6 SYSTEM MAINTENANCE	20
2.7 HIGH AVAILABILTY THROUGH REDUNDANCY	20
3. INTERFACE AND CONTROL REQUIREMENTS	20
3.1 TONE REMOTE CONTROL.....	20
3.2 DC CONTROL	21
3.3 LOCAL/E&M CONTROL.....	21
3.4 JVCKENWOOD MOBILE RADIO INTERFACE.....	21
3.5 JVCKENWOOD NXIP RADIO NETWORK INTERFACE	21
3.6 DIU 3000	22
3.7 MOTOROLA MOBILE RADIO INTERFACE	22
3.8 HARRIS RADIO INTERFACE	22
3.9 DMR APPLICATION INTERFACE SPECIFICATION (AIS).....	22
3.10 PROJECT 25 DIGITAL FIXED STATION INTERFACE (DFSI)	22
3.11 PROJECT P25 CONSOLE SUBSYSTEM INTERFACE (CSSI PER TIA.102-BACA).....	22
3.12 TONE SIGNALING.....	23
3.13 MDC 1200/FLEETSYNC SIGNALING	23
3.14 GE-STAR SIGNALING.....	23
3.15 TELEPHONE INTERFACE.....	23
3.16 LOGGING RECORDER OUTPUT	23
3.17 TIME SYNC INPUT	24
4. FUNCTIONAL REQUIREMENTS.....	24
4.1 GENERAL USER INTERFACE.....	24
4.2 AUX I/O	25
4.3 RADIO CONTROL	25
4.3.1 Select.....	25
4.3.2 Transmit	25
4.3.3 Instant Transmit	25
4.3.4 Receive.....	25
4.3.5 Monitor, Idle States.....	26

4.3.6	Radio ID & Alias	26
4.3.7	Time Stamp	26
4.3.8	Alert tone.....	26
4.3.9	Multi-select (Simulselect)	26
4.3.10	Frequency/Talkgroup Change	26
4.3.11	Patch.....	26
4.3.12	Permanent groups.....	27
4.3.13	Dynamic groups	27
4.3.14	Priority/Channel Marker	27
4.4	TELEPHONE CONTROLS	27
4.4.1	Answer/Release.....	27
4.4.2	Outgoing Call	27
4.4.3	Redial	27
4.4.4	Caller ID.....	27
4.4.5	Mute	27
4.4.6	Hold.....	28
4.4.7	Call Monitor	28
4.4.8	Join Call	28
4.4.9	Patch Telephone to Radio	28
4.5	PAGING CONTROL.....	28
4.5.1	Instant Call Page	28
4.5.2	Page Steering.....	28
4.5.3	Page Transmission	28
4.6	GENERAL CONTROLS & SYSTEM FUNCTIONS	28
4.6.1	Volume – individual, master	28
4.6.2	Volume Boost.....	28
4.6.3	Mute	28
4.6.4	All Mute	28
4.6.5	Console Voice Intercom.....	29
4.6.6	Console Text Messaging	29
4.6.7	Call History	29
4.6.8	Event Replay	29
4.6.9	Parallel Status.....	29
4.6.10	Console Cross Mute	29
4.6.11	Channel Cross Mute.....	29
4.7	CONTACT-BASED DISPATCHING.....	30
4.8	MAP-BASED DISPATCHING.....	30
4.9	SHARING INFORMATION WITH 3 RD PARTY DEVICES (CAD, MAPPING...)	30

1. GENERAL REQUIREMENTS

1.1 QUALITY

Proposed equipment shall meet or exceed industry standards for quality and reliability. All materials, parts, assemblies, etc. shall be new, and be free of corrosion, blemishes, or other cosmetic defects. Design and construction shall be consistent with current best engineering practices.

The proposed equipment shall comply with the European Union issued directives on the Restriction of Hazardous Substances (RoHS), Directive 2015/863/EU and Waste Electrical and Electronic Equipment (WEEE), Directive 2012/19/EU.

1.2 CERTIFICATION AND REGULATORY APPROVALS

The equipment provider shall be ISO 9000 certified and shall comply with the applicable US Federal Communications Commission (FCC) rules and regulations for telecommunications equipment.

All equipment proposed in which microprocessors are used shall have undergone comprehensive testing and shall meet 47 CFR, Part 15, Subpart "B" of the Federal Communications Commission rules for Class "A" computing devices.

1.3 WARRANTY

Bidder shall warrant all equipment to be free from defects in material and workmanship, and to operate in accordance with these specifications. Software shall have a warranty for a period of not less than one (1) year from date of acceptance, if within 3 months from the date of shipment and Hardware will have a warranty for a period of not less than 3 years from the date of acceptance, if within 3 months from the date of shipment.

Hardware replacement for the first 90 days will be handled by advance shipment of hardware (replacement hardware will be shipped as soon as an agreement is reached that it is faulty).

1.4 REPLACEMENT PART AVAILABILITY

The manufacturer of the proposed console equipment shall prepare a comprehensive spare listing for delivery with the system or maintain a stock of critical repair components for the system capable of supporting the system for a period of not less than five (5) years after initial delivery. Stocked critical parts shall be available for shipment on an expedited basis.

1.5 SYSTEM DOCUMENTATION

The console system shall include user documentation that addresses the following functions or activities:

1. Hardware Installation
2. System Configuration
3. Console Operation
4. Console Screen Design

A copy of the system documentation shall be provided in electronic format via applicable storage medium.

2. SYSTEM REQUIREMENTS

2.1 CONSOLE SYSTEM ARCHITECTURE

The console system shall be an IP based system which utilizes an IP network as the backbone to transport system messages and media.

The fundamental architecture of the system shall allow for console system devices (e.g., console positions, interface gateways) to be placed in multiple geographic locations. Dispersed system devices shall be capable of utilizing the same feature set as if they were co-located in the equipment room. The architecture shall also allow for related, independently managed console systems within the radio network to communicate with one another and control radio resources at all locations.

As part of the console system architecture, the system shall provide an option to connect remote console system devices and multiple site locations via a multicast to unicast translation application. This removes the need to transport multicast traffic across the span between the dispersed console system devices and/or locations. Therefore, conventional IP networking (including VPN technologies) may be used for such remote connections without concern for multicast routing and transport issues.

Maintenance and system software upgrades shall be handled by dealers or qualified end users. Factory support shall be available on an as needed basis.

A single console system architecture shall support as a minimum:

Consoles: 40

Radio lines: 250

Phone lines: 12 lines per telephone gateway, multiple telephone gateways shall be allowed.

AUX I/O points: 400 per AUX I/O service, multiple AUX I/O services shall be allowed to extend this capacity.

2.2 ENVIRONMENTAL

The system shall operate over the temperature range 0 to 50°C.

2.3 POWER

Any centralized equipment of the console system shall be equipped with dual power inputs in order to allow for power integrity in the system design.

The console system's power supply shall be configured in a 1+1 configuration, such that the loss of single power feed or the loss of a single power supply component shall not cause a disruption in service.

Radio gateways for the system should not draw more than 480mA in a standby condition (powered up but not receiving or transmitting).

Centralized hardware shall not draw more than 15 watts of power, have an SSD and no fan.

2.4 CONSOLE EQUIPMENT

2.4.1.1 Consoles shall be PC based and the console software application shall support Windows 7 , 8.1 or 10 - 64-bit operating systems. Console PCs shall support network teaming (NIC Bonding) and support dual display monitors.

2.4.1.2 A widescreen monitor shall be utilized to display the console user interface and shall support a minimum resolution of 1920x1080. The dispatcher shall be able to perform all dispatch operations by using the combination of the display screen and a mouse.

2.4.1.3 The following items shall be offered as options for dispatch operation:

1. Footswitch
The footswitch shall be used by the dispatcher to key the selected radio channel(s).
2. Maximum of 8 speakers
Each speaker shall be in an individual enclosure and have separate volume control knob. Speakers shall also have a minimum volume level and be equipped with LEDs indicating power to the device and receive voice activity.
3. Desk microphone
The desk microphone shall have a physical button that when pressed shall cause the microphone to be live on the selected radio channel(s) and a button to monitor select radio channels
4. Headset Jack box
The jack box shall be compatible with either 4 or 6 wire headsets. Inserting the headset plug into the jack box shall automatically route the select audio to the headset and mute the select speaker. If an external telephone system is utilized and connected to the console system such that the dispatcher can use one headset to operate both, separate volume knobs shall be provided on the jack box to control radio volume and telephone volume.
5. Laptop Operation
The console software shall run on a laptop that complies with the specifications of the desktop PC position. This option shall allow the dispatcher to use only the console software and a USB headset to perform their dispatching functions.

2.5 TELEPHONE RADIO HEADSET INTEGRATION (TRHI)

The console system shall support the integration of telephone and radio dispatch audio such that the dispatcher can use one headset for operating both an external telephone and the dispatch console.

2.5.1.1 When the telephone is “on-hook” (i.e., telephone not in use), the select audio of the console shall be routed to the earpiece of the headset. When PTT is depressed, the headset microphone audio shall be routed to the selected channel(s).

- 2.5.1.2 An “off-hook” (i.e., placed in use) indication from an external telephone device shall cause the Telephone/Radio Headset Interface to route the select audio into the select speaker and present the user with telephone audio in the earpiece. The microphone audio is routed to the telephone such that the user can converse with the caller in full duplex without the need to press the transmit button. When the user needs to answer a radio call on the console, activation of PTT shall cause the microphone audio to momentarily be routed to the select channel(s). During PTT muting of transmitted audio to the telephone caller shall be selectable.
- 2.5.1.3 When the external telephone returns to an “on-hook” condition, the Telephone/Radio Headset Interface shall return the select audio to the headset earpiece.

2.6 SYSTEM MAINTENANCE

- 2.6.1.1 The console system shall provide a general indication on the dispatch console screen of the health of the IP network on which it resides and allow for a technician to access additional log information to assist in troubleshooting IP network performance issues.
- 2.6.1.2 There shall be a centralized method of device discovery and provisioning of device IP network addresses, and all associated parameters for that device, such that it eliminates the need to access each device separately.
- 2.6.1.3 All primary settings and adjustments on the backroom equipment shall be accomplished via software control.
- 2.6.1.4 It shall be possible to configure the console system from anywhere on the network on which it resides. A technician shall not be required to physically connect to a device in order to perform configuration and maintenance tasks.

2.7 HIGH AVAILABILTY THROUGH REDUNDANCY

- 2.7.1.1 All console system hardware and software shall support NIC Bonding for Redundancy, allowing 2 Ethernet connections with only one active at a given time.
- 2.7.1.2 The architecture of the console system shall support optional redundancy of critical components and/or application services such that a failure in the component shall not cause disruption of service to the system as a whole.

3. INTERFACE AND CONTROL REQUIREMENTS

3.1 TONE REMOTE CONTROL

3.1.1.1 The console system shall be capable of generating, on a channel-by-channel basis, Tone Remote Control (TRC) compliant with TIA.102-BAHA Fixed Station Interface Messages & Procedures, Section 7.2.

- In addition to supporting a single function tone sequence, with a capability of selecting up to 15 functions, including up to 8 radio channels, the console system shall also optionally support dual function tones, with a capability of selecting up to 99 radio channels. The dual function tone

capability shall also support Motorola's Digital Voice Privacy (DVP) and Positive Mode Control (PMC) to ensure that all transmissions are in the intended encryption mode.

- In addition to the 15 standard function tones ranging from 650 to 2050 Hz, the console system shall also support extended function tones including 350, 450, 550, 2250 and 2350 Hz. Guard Tone frequencies shall be field selectable including the following tones: 2100, 2175, 2300, 2325, 2600, 2800, and 2970 Hz.
- The duration of the High-Level Guard Tone shall be adjustable between 60 and 1000 milliseconds in 10 millisecond steps. Function Tone Duration shall be field adjustable between 10 and 250 milliseconds in 10 millisecond steps. The amplitude of each sequential tone shall be independently field configurable between -40 and +10 dBm. The tone frequency accuracy shall be +/- 0.2%, and timing accuracy shall be +/- 1.0%.

3.1.1.2 The transmit path of console system circuits used for TRC shall be capable of monitoring transmissions of other paralleled wireline control equipment when the console is not transmitting on the circuit. This path shall have a notch filter for Guard Tone to prevent the operator from hearing the Guard Tone generated by paralleled equipment. This path shall also be capable of decoding TRC sequences such that when a parallel device changes the radio fixed station's parameters using TRC, the console system shall update its display to the dispatcher to allow the operator's display to reflect the fixed station's current state. This shall include the ability to see transmit state, and changes to the fixed station's channel. Also, in support of paralleled wireline equipment, the console's wireline interface shall support selectable high/low impedance.

3.2 DC CONTROL

The console system shall also be capable of generating, on a channel-by-channel basis, EIA standard DC control currents. The currents shall be programmable between +15mA and -15mA in 0.5mA increments.

3.3 LOCAL/E&M CONTROL

The console shall be capable of controlling radios using local and E & M methods compliant with TIA.102-BAHA Fixed Station Interface Messages & Procedures, Section 7.1. To support this, the console system shall provide, on a channel-by-channel basis, a "normally open" output capable of being wired in support of an E&M "M-lead". In addition, console circuits that use E&M control shall also support the use of an optically isolated incoming receive indication signal which can be wired in support of an E&M "E-lead".

3.4 JVC KENWOOD MOBILE RADIO INTERFACE

The console shall be capable of controlling the following JVC Kenwood mobile radios for specific interface needs: TK-x180 for analog/conventional systems, TK-5x10 for P25 CAI conventional and trunking systems, and NX-700/800/900 for NEXEDGE® systems, and NX-5x00 for P25 and NEXEDGE® systems. The following functions shall be available through the console interface: channel/talk group select, group call, individual call, emergency call, PTT-ID, scan, and receipt of status messages.

3.5 JVC KENWOOD NXIP RADIO NETWORK INTERFACE

The console shall be capable of interfacing to and controlling the following JVC Kenwood repeaters using the NXIP IP-based protocol: NXR-700/800 and NXR-710/810 for NEXEDGE® Conventional systems. The following functions shall be available through the console interface: channel/talk group select, group call, individual call, emergency call, PTT-ID, scan, and receipt of status message

3.6 DIU 3000

The console shall be capable of interfacing to the Motorola Quantar with DIU-3000 to support P25 conventional systems. The following functions shall be available through the console interface: channel select, group call, emergency call and PTT-ID.

3.7 MOTOROLA MOBILE RADIO INTERFACE

The console shall be capable of controlling the following Motorola mobile radios for specific interface needs: XTL-5000, XTL-2500, APX-7500 and APX-6000 supporting Analog FM (with MDC or DTMF signaling), Project 25 trunked and conventional, and SmartNet/SmartZone trunking modes. The following functions shall be available through the console interface: channel/talk group select, group call, individual call, emergency call, PTT-ID, scan, and coded/clear.

3.8 HARRIS RADIO INTERFACE

The console shall be capable of controlling the Harris M7300, XG75 and XG100 radios via CAN Bus translation for specific interface needs: for analog/conventional systems, for P25 CAI conventional and trunking systems, and for EDACS and EDACS Pro-Voice Systems. The following functions shall be available through the console interface: channel/talk group select, group call, individual call, emergency call, PTT-ID, scan, and receipt of status messages.

3.9 DMR APPLICATION INTERFACE SPECIFICATION (AIS)

The console shall be capable of interfacing to and controlling the following Digital Mobile Radio (DMR) systems using the open DMR Association, Application Interface Specification (AIS) interface:

- DMR Tier III (Trunking)
- DMR Tier II (Conventional)

The following functions shall be available through the console interface: all call (conventional), broadcast call (trunking), call alert, channel select, emergency call, group call, individual call, PTT ID, radio check, radio inhibit, radio uninhibit.

3.10 PROJECT 25 DIGITAL FIXED STATION INTERFACE (DFSI)

The console shall be capable of interfacing to and controlling Project 25 base stations and repeaters using the published Fixed Station Interface standard, TIA 102.BAHA. The connection shall be digital (IP-based). The following P25 functions shall be available through the console interface: call alert, channel select, digital/analog air mode, emergency alert, emergency call, encryption, group call, individual call, PTT ID, radio check, radio inhibit, radio uninhibit, remote monitor, scan, and status request.

3.11 PROJECT P25 CONSOLE SUBSYSTEM INTERFACE (CSSI PER TIA.102-BACA)

The Console shall be capable of interfacing to an APCO P25 CSSI. The interface shall be compliant per TIA .102-BACB and shall support, as a minimum, the following features over the CSSI interface:

Unit ID Display
Talk group selection
Group calls (incoming/outgoing)
Incoming emergency group call
Individual calls (incoming/outgoing)
Incoming emergency individual call
Incoming emergency alert
Incoming call alert

Emergency Acknowledgement
AES and DES Encryption
Manual encryption key load
KVL encryption key load support
Long term voice logging support for voice and associated metadata
Patching of talk groups by operator
Consistent visual UI indications for transmit, receive, audio routing, call state
IRR playback for all voice transmissions with current implementation will not change Console pre-empt

3.12 TONE SIGNALING

The console shall be capable of supporting the following tone signaling formats:

- Motorola Two-Tone
- Motorola Quick-Call 2 (1+1)
- GE® Two-Tone
- Reach Two-Tone
- Plectron (Two-Tone w/ non-standard frequencies, durations, and gaps)
- DTMF
- Knox DTMF
- 5/6 Tone

To avoid tone distortion due to IP related issues, selective calling/paging tones used for signaling devices shall be generated and/or decoded at the radio interface device and not transported through the system as VoIP audio.

3.13 MDC 1200/FLEETSYNC SIGNALING

The system shall support encode and decode of MDC 1200 and Fleetsync. The interface to MDC 1200 or Fleetsync radios shall use a 4W analog interface and tone remote signaling. The following features shall be supported: PTT ID for individual radios and groups, Emergency alert, call alert, selective call, status request/report, radio availability check, radio enable/disable, and remote radio monitor.

3.14 GE-STAR SIGNALING

The following GE-Star formats shall be supported: multi-System 0 12-bit decode, Multi-System 1 12-bit decode, Multi-System 2 12-bit decode, Multi-System 3 12-bit decode, Standard 11-bit decode, Mobile/Portable 12-bit decode, Mobile/Portable 13-bit decode, GE-Star #4 14-bit decode, GE-Star #3 14-bit decode, ID Star #1 14-bit decode. The following features shall be supported: PTT ID for individual radios and groups [Rx&Tx], Emergency alert [Rx], status report [Rx]

3.15 TELEPHONE INTERFACE

The system shall support an interface to one or more analog (POTS) telephone lines. The interface shall be compatible with lines terminated at a central office or at a local PBX fitted with an analog port.

3.16 LOGGING RECORDER OUTPUT

The system shall provide both 2-wire analog logging recorder outputs and an interface to an IP voice logger system.

The analog logging recorder output shall record on a per channel basis.

In addition to all voice transmissions, the following data items, if available in the system, shall be made available to the external IP logging system: PTT ID/Caller ID, Radio Channel ID, Privacy code ID, encryption key, encrypted status, telephone line ID.

3.17 TIME SYNC INPUT

The console system shall have the capability to accept a master clock data input which utilizes NTP protocol. The master clock source shall be used to keep all displayed time/date fields synchronized.

4. FUNCTIONAL REQUIREMENTS

4.1 GENERAL USER INTERFACE

- 4.1.1.1 The user interface shall support the configuration of multiple workspaces for a dispatch screen. Workspaces shall allow for “on the fly” configuration by dispatch personnel such that they may add and delete resources to and from the workspace, move resources around within the workspace and resize certain resources.
- 4.1.1.2 There shall be an option provided to a technician or system administrator level to lock each individual workspace such that nothing may be moved, added, or deleted from the workspace. There shall also be an option to lock each visual control and system resource displayed on the screen such that a workspace that is unlocked may have locked items on it to prevent a dispatcher from changing them while the console is running.
- 4.1.1.3 The user interface shall have the ability to support multiple roles each with a different screen layout and radio resource list. The role-based configuration shall be made available at every console workstation such that a user may log in at any workstation and begin using the layout appropriate for their role.
- 4.1.1.4 In order to minimize visual distractions to the dispatcher, the user interface shall be capable of being configured such that information and indications appear only when applicable to an event. It shall not be necessary to have every indication constantly visible on the screen regardless of its state in order for the dispatcher to access it.
- 4.1.1.5 The dispatcher shall have access to system resources in the system that may not be permanently displayed on their screen including:
 - Adding a radio channel to their workspace for as long as the dispatcher requires.
 - Allowing for an instant transmit or access to receive notifications for radio channels that they do not add to the workspace.
 - Adding Aux, I/O sensors, and controls to their workspace for as long as the dispatcher requires.
- 4.1.1.6 The user interface shall allow the ability to associate individual, customized images to represent each entity stored in the console system data repository.
- 4.1.1.7 The console software shall allow for the ability to display the dispatch center’s name, logo, or other graphic icon on all screens.

4.1.1.8 The console software shall allow the selection of at least 100 different colors for channel modules, allowing quick identification of the function by the dispatcher.

4.2 AUX I/O

4.2.1.1 The console system shall support connection to auxiliary digital inputs (for receiving status from external equipment) and digital outputs (for external device control).

4.2.1.2 Input shall be capable of showing at least two indication states within the same indicator on the console screen in order to reflect different status levels.

4.2.1.3 Output controls shall be available in latching and momentary operation. The output control shall be capable of showing at least two indication states.

4.2.1.4 A combined input and output control shall be available such that the dispatcher views the input status and controls the output from a single visual control. Activation of the output would send activation but only change the indication based on state of input.

4.3 RADIO CONTROL

4.3.1 Select

The dispatcher shall have the ability to place a channel into the selected state via a single operation. When a radio channel is placed into the selected state, that audio is routed to the appropriate device, either the select speaker or the headset or both. Microphone audio is routed to either the headset microphone or a desk microphone depending on the console configuration. There shall be a visual indication that the dispatcher has placed a channel into the selected state.

4.3.2 Transmit

The system shall support the ability to transmit on a selected channel or channels. The user interface shall provide visual feedback to the dispatcher that the transmission is either successful or blocked. When transmitting on multiple selected channels, if any channel is busy or unavailable, this shall not prevent transmission on non-busy channels.

4.3.3 Instant Transmit

The system shall allow the dispatcher to perform an instant transmit on a radio channel without the need to place the channel into a selected state. An instant transmit on a channel shall not result in a transmission on currently selected radio channels.

4.3.4 Receive

The user interface shall provide a visual indication that there is incoming audio traffic on a radio channel. If the channel is selected, the audio is routed to the applicable device (headset or select speaker).

The user interface shall provide a method for dispatchers to see that there is an incoming call on a channel(s) that is not visible in their primary workspace. This method shall allow the dispatcher to interact (select and/or transmit) with that radio channel if necessary. Which channels appear to the dispatcher via this method shall be configurable by a technician or system administrator.

4.3.5 Monitor, Idle States

The user interface shall allow the dispatcher to place audio from a specified radio in a monitor speaker. The user interface shall be capable of allowing the dispatcher to change which monitor speaker the audio is routed to at any time.

The user interface shall allow the dispatcher to view activity and visual indications on a radio channel on their screen without requiring the audio to be present in the select or monitor speakers.

4.3.6 Radio ID & Alias

When available, the PTT ID shall be displayed on the user interface for an incoming radio transmission. When available, the contact entry name shall be displayed for the matching PTT ID from the console system's data repository.

4.3.7 Time Stamp

The user interface shall display the time that an incoming or outgoing radio transmission occurs.

4.3.8 Alert tone

The system shall be capable of transmitting a predefined alert tone on the selected channel(s).

4.3.9 multi-select

The user interface shall support multi-channel selection where selecting a channel does not change the state of a previously selected channel. The user interface shall support this without requiring the dispatcher to change modes or screens. Multi select shall be activated by a single mouse click or touch. While multi-selected a dispatcher shall be able to instant transmit to a group or individual in the multi-select with a single mouse click or touch.

The user interface shall allow the dispatcher to see who is in the multi-Select and add or remove entities with a single mouse click or touch.

4.3.10 Frequency/Talk group Change

The system shall allow the dispatcher to change the frequency or talk group on a radio channel if allowed by the base station. The system shall support the ability for a technician or administrator to label the radio frequencies/talk groups to a desired name. When the dispatcher changes the frequency on a radio channel, the change shall be reflected on all consoles.

4.3.11 Patch

The system shall support the ability to connect two or more channels together such that the receive audio of one channel is repeated on all other channels who are members of the patch. Each radio channel that is a member of a patch shall clearly display that they are in a patch, and of which patch they are a member. This indication shall be shown on all consoles displaying that channel.

Dispatchers shall have the ability to add and delete individual radio channels to and from an active patch. They shall also have the ability to tear down the entire patch all at once.

Dispatchers shall have the ability to become active members of the patch or remove themselves from the member list.

Dispatchers shall have the ability to instant transmit on a group or individual within the patch by a single mouse click or touch.

The user interface shall provide a list of the patch members. The dispatcher shall be able to view the members in all system patches.

4.3.12 Permanent groups

The console system shall allow for a pre-defined group of radio channels to be established and saved permanently in the system. This group shall be represented on the user interface via a single visual element. Selecting and transmitting on the visual control operates the same as if the dispatcher had individually selected each channel.

4.3.13 Dynamic groups

The console system shall allow for a dispatcher to create a group of radio channels dynamically during their console session.

4.3.14 Priority/Channel Marker

The system shall allow for a priority marker to be placed on any and all analog channels in the system as desired on a channel-by-channel basis. The frequency, duration, interval, and amplitude of the priority marker shall be adjustable in software.

4.4 TELEPHONE CONTROLS

4.4.1 Answer/Release

The user interface shall allow the dispatcher to answer an incoming telephone call. It shall not be necessary to have a telephone line resource present on screen in order to receive and answer an incoming call. The dispatcher shall have the ability to terminate the call via a user interface control.

4.4.2 Outgoing Call

The user interface shall allow the dispatcher to place an outgoing call via a dialer from their console screen. It shall not be required to have the dialer permanently displayed on the screen in order for the dispatcher to place the call. The system shall support the ability to also dial from a keypad at the console position.

The system shall support the ability for the dispatcher to place an outgoing call from a predefined contact entry.

4.4.3 Redial

The user interface shall allow the dispatcher to redial the last number used for an outbound call without the need to re-enter the digits. The user interface shall display the call information before placing the call.

4.4.4 Caller ID

When available the caller identification information shall be displayed on the user interface for an incoming call.

The contact entry shall be displayed on the user interface if the calling number matches an entry in the console system's data repository.

4.4.5 Mute

The user interface shall allow the dispatcher to mute their microphone source to the telephone caller. There shall be a visual indication that the microphone is muted.

4.4.6 Hold

The dispatcher shall have the ability to place a telephone call on hold. There shall be a visual indication that the call has been placed on hold. A technician configurable hold timer shall be available such that when the timer expires, the telephone call will re-ring at the position.

4.4.7 Call Monitor

The system shall allow for another position to monitor a telephone call. While monitoring a call the user can listen to the parties on the call but not have their microphone live as part of the telephone call.

4.4.8 Join Call

The system shall allow for another dispatcher to join an active telephone call.

4.4.9 Patch Telephone to Radio

The system shall provide the ability for a telephone call to be patched to one or more radio channels.

4.5 PAGING CONTROL

4.5.1 Instant Call Page

The system shall provide the ability to initiate a paging alert through activation of a single action. Instant calls may be pre-programmed with one or more pages with differing formats.

4.5.2 Page Steering

Instant call pages may be programmed to go out on pre-defined channels or programmed to go out on the selected channel(s).

4.5.3 Page Transmission

The console shall provide both audible and visual cues of the progress of the paging process. The dispatcher shall have the ability to stop the page transmission after initiation. There shall be an indication to the dispatcher if a page was transmitted successfully or not.

The system shall support the ability to simultaneously send different pages on multiple channels.

4.6 GENERAL CONTROLS & SYSTEM FUNCTIONS

4.6.1 Volume – individual, master

The user interface shall have increase/decrease volume controls that are adjustable by the dispatcher. There shall be controls to change the volume level on each individual channel independently from one another and controls to change volume level on all channels routed to a particular speaker.

4.6.2 Volume Boost

The user interface shall allow the dispatcher to boost the volume to a pre-defined level for each channel independently and for any speaker. A visual indication shall appear when that item is placed into the boosted state.

4.6.3 Mute

The user interface shall allow the dispatcher to mute the volume to a pre-defined level for each channel independently and for any speaker. However, muting of the selected channel(s) shall not be allowed.

A visual indication shall appear when that item is placed into the muted state.

4.6.4 All Mute

The user interface shall allow the dispatcher to mute all monitored channels (anything not selected) simultaneously to a pre-defined level. There shall be an indication on the screen that channels are in a

muted state. The all-mute function may be removed by either the dispatcher invoking the action or via a timer. The timer length shall be adjustable by a technician or administrator.

4.6.5 Console Voice Intercom

The system shall allow a console dispatcher to talk directly to one or more dispatchers within the console system. The user interface shall allow the dispatcher to select the destination console(s) from a list of logged in users.

4.6.6 Console Text Messaging

The system shall allow a console dispatcher to communicate with one or more dispatchers within the console system via freeform text messaging.

The user interface shall provide an indication that the dispatcher has an incoming and/or unread text message. In order to not disrupt the dispatcher from their current tasks, the dispatcher shall have the ability to read that message when desired versus immediately upon receipt.

For outgoing text messages, the user interface shall allow the dispatcher to select the destination console(s) from a list of logged in users or modify the destination console(s) when replying.

4.6.7 Call History

The system shall provide a history of all radio transmissions, incoming and outgoing, for each channel displayed on the screen regardless of its selected state. The dispatcher shall be able to perform an instant transmit to a caller from the activity entry. The following information shall be displayed for each transmission: time, Mobile ID or contact alias (when available), and status. The dispatcher shall have access to the transmission recording from the activity history. The dispatcher shall be able to sort by various type of calls and channels of the call. History shall allow saving for up to 24 hours.

4.6.8 Event Replay

The system shall provide short term recording/instant playback functionality for transmissions. The dispatcher shall have access to the individual transmission playback via the history window. The system shall also support the ability to playback recordings on a particular channel in succession without needing the dispatcher to individually initiate the playback of each recording. Event replay shall allow saving for up to 24 hours.

4.6.9 Parallel Status

The status of any system resource (e.g., Radio, Phone, Aux I/O) shall be indicated at all consoles where the resource is displayed.

The user interface shall display visual indication on a radio channel of transmissions from other dispatchers on the console system.

4.6.10 Console Cross Mute

The system shall provide a means of muting the transmit audio from one or more other consoles within the system on a console that is monitoring the channel on which the transmission occurred.

4.6.11 Channel Cross Mute

The system shall provide a means of muting incoming audio (both transmit monitor and receive) on one or more channels when the system is transmitting on a given channel and frequency.

4.7 CONTACT-BASED DISPATCHING

In addition to supporting traditional resource-based dispatching (where the dispatcher focus is on the gateway radios), the console shall also support contact-based dispatching that allows a dispatcher to instead focus on whom they wish to speak to, rather than the radio network, channel or media needed to contact the person or group. In support of this the console shall be capable of presenting icons for field units (both individual field users, as well as groups of field users) and those icons shall indicate the presence of traffic associated with the field unit (including talker ID and alias) and those icons shall allow the dispatcher to initiate transmissions to the field unit. This is desired in order to avoid the necessity of training dispatchers on the details of each radio network interfaced to their console.

4.8 MAP-BASED DISPATCHING

In addition to displaying field units on in a fixed matrix, those consoles interfaced to and equipped with Location Services (a.k.a. Automatic Vehicle Location – AVL), shall be capable of showing a map of the jurisdiction for which they dispatch. On the map shall appear an icon for any field user or group of users they are interested in seeing (if those user’s radios are equipped with location determining technology such as GPS receivers). The icons shall be placed on the map such that the dispatcher can see the location of the user. The icon shall also indicate the field user’s voice traffic status, emergency state, and the dispatcher shall be capable of clicking on the icon to initiate a voice transmission to the desired user. This is desired in order to help dispatchers see which responders are closest to an incident. It is also desired in order to locate a specific user in the event they declare an emergency.

4.9 SHARING INFORMATION WITH 3RD PARTY DEVICES (CAD, MAPPING...)

The console shall have a set of Application program interfaces (APIs). This is a set of routines, protocols, and tools for building software applications. An API specifies how software components should interact. Additionally, APIs are used when programming graphical user interface (GUI) components.

The APIs shall include call status, caller ids, Location information, ability to select pages and send them to selected groups, Paging status, PTT ability for any group programmed on the console, emergency acknowledge and clear capability, and console and system health.