County of Henry

P.O. BOX 7
COLLINSVILLE, VIRGINIA 24078-0007
http://www.co.henry.va.us/

TELEPHONE (276) 634-4670
FAX (276) 634-4535

MEMBER OF
VAGP
NIGP

PURCHASING DEPARTMENT

JANUARY 4, 2016
REQUEST FOR PROPOSAL
RFP# 16-02043-A167
HENRY COUNTY PURCHASING DEPARTMENT

The Martinsville-Henry County 911 Center (MHC911) solicits firms to submit proposals for "**VoIP Radio Dispatch Console System**." The **original** and **three (3)** submittals **(FOR A TOTAL OF FOUR (4) PROPOSALS),** marked **"VoIP Radio Dispatch Console System" RFP# 16-02043-A167** will be received in a sealed envelope not later than **3:00 p.m., Local Prevailing Time, February 4, 2016, in the:**

Purchasing Department, Room 210
Attn: Carole Jones, Chief Purchasing Agent
Henry County Administration Building
P.O. Box 7 (Postal Service)
3300 Kings Mountain Road (UPS or FedEx)
Collinsville, VA 24078-0007

Facsimile and/or electronic proposals will not be accepted. Proposals received after the announced time and date of receipt, by mail or otherwise, will be returned unopened. Nothing herein is intended to exclude any responsible firm or in any way restrain or restrict competition.

On the contrary, all responsible firms, local, faith-based, minority-owned and female-owned are encouraged to submit a proposal.

The County/PSA reserves the right to reject any or all of the proposals, to waive informalities and to award in part or in whole any or all proposals. Any proposal submitted MUST be signed by an individual authorized to bind the offeror.

Enclosed is a ***"Proposal Requirements and Non-Collusion Statement"*** that must be signed and returned with the proposal or proposal may be rejected.

If you desire not to quote on this proposal, please forward your acknowledgement of NO PROPOSAL SUBMITTED to the above address. Otherwise, your name shall be removed from our bidders list after three (3) non-responses.

Contract Period

A notice of award will be signed and publicly posted once this RFP has been approved. The date on the notice of award will be when the RFP becomes effective (not date of service). Initial contract shall be for 1 year starting July 1, 2016 and ending June 30, 2017. However, we reserve the right to negotiate each year with the awarded vendor for four (4) additional 1 year terms starting each year on July 1. In addition this contract could last until June 30, 2021. However the County of Henry reserves the right to extend potential services to awarded vendor that are like or similar until June 30, 2021. Under the VA Procurement Act, the County/PSA reserves the right to negotiate extending this contract for not more than one (1) additional year after original contract terms. **The above terms shall override any other written terms in this RFP and/or verbal comments made during negotiations, unless authorized by Chief Purchasing Agent.**

Piggy Back Clause

This contract shall be available for piggy backing for any other state and local agency or government agency.

Illegal Aliens

Vendor promises they will not hire illegal aliens. By signing this proposal document the vendor confirms this promise.

Permits/Licenses

Vendors shall be responsible for acquiring all the proper permits/licenses required by local and state authorities in conjunction with this proposal. Proposal prices shall include these fees and no additional costs are to be accessed to the County/PSA. Vendor's attention is directed to the requirements of title 54, chapter 11, of the code of Virginia pertaining to registration of contractors.

Contact for RFP

Please contact JR Powell, 911 Director, by calling (276) 632-7677, or emailing at vpowell@co.henry.va.us for any questions pertaining to this RFP.

RFP# 16-02043-A167 **SPECIAL TERMS AND CONDITIONS**

During the performance of any contract awarded pursuant to this RFP, the contractor agrees as follows:

A. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, or handicaps, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the operation of the contractor. The Contractor agrees to post in conspicuous places, available to provisions of this nondiscrimination clause.

B. The Contractor, in all solicitations or advertisements for employees placed on behalf of the contractor, will state that such contractor is an equal opportunity employer.

C. Notices, advertisements, and solicitations placed in accordance with federal law, rule or regulations shall be deemed sufficient for the purpose of meeting the requirements of this section.

The Contractor shall include in provisions of the foregoing paragraph A, B, and C in every subcontract or purchase order over $5,000 so that the provisions will be binding upon each subcontractor or vendor.

PROPOSAL REQUIREMENTS AND NON-COLLUSION STATEMENT

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth.
My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the Code of Virginia as amended. Futhermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, the Virginia Bid Rigging Act, and Virginia Antitrust Act, and Federal Law, and can result in fines, prison sentences, and civil damage awards.

I hereby certify that I am authorized to sign as a Representative for the Firm:

NAME OF FIRM _____

ADDRESS _____

_____

SIGNATURE _____

NAME (TYPE/PRINT) _____

TITLE _____

DATE _____

TELEPHONE( ) _____

FAX( ) _____

RFP# 16-02043-A167

THE 2007 SESSION OF THE VIRGINIA GENERAL ASSEMBLY, PASSED THE HB 1707/SB 1346 BILL, EFFECTIVE ON JULY 1, 2007. HENRY COUNTY IS REQUIRING ALL VENDORS TO ABIDE BY THE FOLLOWING NEW LEGISLATION.

> HB 1707/SB 1346
> PROVIDES THAT AS A CONDITION OF AWARDING A CONTRACT FOR THE PROVISION OF SERVICES THAT REQUIRE THE CONTRACTOR OR HIS EMPLOYEES TO HAVE DIRECT CONTACT WITH STUDENTS ON SCHOOL PROPERTY DURING REGULAR SCHOOL HOURS, THE SCHOOL BOARD MUST REQUIRE THE CONTRACTOR TO PROVIDE CERTIFICATION THAT ALL EMPLOYEES WHO WILL HAVE DIRECT CONTACT WITH STUDENTS HAVE NOT BEEN CONVICTED OF A FELONY OR ANY OFFENSE INVOLVING THE SEXUAL MOLESTATION OR PHYSICAL OR SEXUAL ABUSE OR RAPE OF A CHILD. THE BILL ALSO PROVIDES THAT THE REQUIREMENT BE WAIVED IN EMERGENCY SITUATIONS WHEN IT IS REASONABLY ANTICIPATED THAT THE CONTRACTOR OR HIS EMPLOYEES WILL HAVE NO DIRECT CONTACT WITH STUDENTS.

PLEASE INDICATE APPROPRIATE BOX BELOW.

_____ I AGREE TO ABIDE BY THIS LEGISLATION HB 1707/SB 1346.

_____ THIS LEGISLATION DOES NOT APPLY TO THIS SOLICITATION.

THE AWARDED VENDOR MAY BE REQUIRED TO PROVIDE ADDITIONAL PAPERWORK BUT ONLY A SIGNATURE IS NECESSARY AT THIS TIME.

_____ _____
AUTHORIZED VENDOR SIGNATURE DATE

_____
COMPANY NAME

_____
PRINTED NAME AND TITLE

RFP# 16-02043-A167

Subcontractor Information

Must fill form out completely even if no subcontractors are being used.

You must check appropriate box below and list any subcontractors that will be used for this RFP# **16-02043-A167** for **VoIP Radio Dispatch Console System for 911 Communications- JR. Powell 276-632-7677**.

_____I will be using subcontractors. (See list below)

_____I may or may not be using subcontractors. Not sure at this time. If you are the awarded vendor, you are responsible for contacting Commissioner of Revenue's Office at (276-634-4691) with subcontractor information. Payment of invoices is contingent upon receiving required information.

_____I will not be using subcontractors.

1.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

2.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

3.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

4.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

5.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

6.) Subcontractors Company Name_____

Contact Person _____Telephone # _____

Vendors Company Name _____

Vendors Authorized Signature _____**Date:** _____

Vendors Telephone #_____ **Federal ID #** _____

*Note- Add a separate sheet if you need additional space for subcontractors

Henry County Administration Bldg
3300 Kings Mountain Rd
P.O. Box 7
Collinsville, VA 24078-0007

JR Powell, Director
vpowell@co.henry.va.us
(276) 638-8751

Request for Proposal- RFP#16-02043-A167

Seven position Voice over Internet Protocol (VoIP) based radio dispatch console with an option for two remote VoIP consoles.

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1. Introduction

The Martinsville-Henry County 911 Center (MHC911) is soliciting proposals to establish a term contract with one qualified source that can furnish, install, and support all hardware and software licensing for a Voice over Internet Protocol (VoIP) based dispatch radio console system for seven (7) positions, with an option for two (2) remote positions, supporting radio resources.

2. Background

2.1 Location

Martinsville-Henry County 911 Center (MHC911) is located in the Henry County Administration Building at 3300 Kings Mountain Road, Martinsville, Virginia, 24112. MHC911 is the E-911 Center and Public Safety Answering Point (PSAP) for the City of Martinsville, and County of Henry. MHC911 is responsible for the emergency dispatching of police, fire, and emergency medical services to three law enforcement agencies, five volunteer EMS agencies, eight volunteer fire agencies, one career staffed fire agency, and one career staffed EMS agency. MHC911 has twenty-four (24) full time Emergency Medical Dispatchers on staff, with no part time positions. MHC911 also has a backup 911 Center located at 1024 Dupont Rd., Martinsville, VA.

2.2 Existing Radio Dispatch Console (Orbacom Radio Dispatch Consoles)

MHC911 currently utilizes seven (7) Orbacom radio dispatch consoles, with twenty-four (24) total radio channels/endpoints used to dispatch police, fire, EMS, communicate with school buses for City and County schools, monitor weather radios, ability to operate door closures and communicate through speaker boxes at center entrances, ability to activate fire and EMS tones for twenty-six (26) paging tones. It is the intent of MHC911 to have the option of deploying two additional VoIP radio consoles at the backup Center located at 1024 Dupont Rd., Martinsville, VA.

The existing Orbacom consoles have a unique setup/interface in place to obtain Unit ID and Emergency Alert activation information from the Henry County Motorola radio system. Currently, EF Johnson radios are in place monitoring each channel setup to provide Unit ID and Emergency Alert information. The EF Johnson radio's receive every transmission from the Officers in the field, delivers the unit ID information and/or emergency alert information to a Gen Watch computer application. Gen Watch deciphers the data received from the Motorola field radios, and delivers the unit ID information and/or emergency alert information to the Orbacom radio equipment.

Note: It is the intent of MHC911 to eliminate the use of proprietary equipment that requires the need for third party equipment to translate data for end users.

3. Scope of Required Services

MHC911 is seeking one vendor to procure a seven (7) position VoIP dispatch console system, with the option of two (2) additional remote consoles, interconnected with industry-standard Ethernet-based IP infrastructure. No loss of system functionality shall be suffered due to geographic separation of components. A system requiring proprietary back-room equipment is not acceptable. The system shall support a centralized configuration database configured with dedicated administrator software, and shall allow the administrator software to be run from multiple locations on the network. The administrator software shall allow the system elements to be divided into groups to assist in the management of geo-diverse deployments. It shall be possible to assign each individual administrator rights, or privileges, to access and edit each portion of the system database.

The proposed system shall be capable of deploying configuration changes to the Console Positions over the network and take effect immediately without restarting system elements. Solutions that require each system element to be separately administered are not acceptable due to maintainability issues.

Endpoints are a combination of vendor and third-party radio and telephone resources that are accessed by the console positions. The proposed system architecture shall be flexible and open to support endpoint technologies from multiple vendors. Preference will be given to a proposed design that uses a software-based approach to endpoint interface and management.

3.1 System Console Positions

Each console position shall physically consist of a Windows PC, a dedicated hardware or software IP media processor, audio peripherals, and a touch monitor. A keyboard or mouse shall not be required to operate the console.

The monitor shall display a graphical representation of endpoints, menus, controls, and system resource icons. Control of the user interface shall be via touchscreen or any Windows compatible pointing device.

To ensure proper audio quality, designs using PC soundcards for media processing shall not be acceptable. A dedicated hardware or software-based IP media processor shall be provided to perform audio processing, management, and presentation. A PC-based console utilizing an internal sound card for media processing is not an acceptable solution due to limited number of channels, inconsistent audio performance, and long-term maintainability concerns.

3.2 Hardware Console Equipment

3.2.1 Speakers

The console speakers shall be individual, stackable units with a single cable providing audio and power from the IP media processor. Each speaker shall have an individual

volume control. The speaker shall be configurable so the volume control cannot fully mute the speaker output. Each speaker shall feature a multi-colored LED to indicate power and receive audio activity.

3.2.2 Headset Jack Box

The headset jack box shall be designed to mount under a desktop surface and accommodate headsets and handset devices with an industry standard tip/ring/sleeve plug. The jack box shall be equipped with a single Ethernet patch cable providing audio and power from the IP media processor. It shall be possible to mount the jack box up to fifty (50) feet from the associated console. The jack box shall provide an industry standard PJ 327 dual tip/ring/sleeve jack supporting 4W and 6W (PTT) operation. The jack box shall provide an input for a hanger/hookswitch for use with handsets.

3.2.3 PTT Footswitch

A rugged PTT footswitch with a non-skid weighted base shall be provided. The cable shall not require a proprietary connector to connect to the console position. When activated, the footswitch shall initiate a general PTT function on the selected endpoint.

3.3 System Gateway

The system shall be provided with redundant PC-based gateways which interface to all system endpoints and consoles using IP. The gateways must be based on non-proprietary PC hardware and support automatic fail-over. Vendor shall state whether the PC hardware may be optionally supplied by customer.

The gateway will perform all conversion functions to open and proprietary radio protocols that may be required. The gateway shall employ a modular software-based architecture to support new types of communication protocols and resources without requiring proprietary hardware. All gateway features shall be software based; no special or proprietary hardware shall be required. The gateway shall contain all the software necessary to interface the external endpoint devices directly through the enterprise network.

Gateway administration shall be protected by user authentication. All updates and modifications shall take effect immediately after editing. Rebooting the gateway and/or console positions to enable a configuration change is unacceptable.

3.4 Conventional Radio Endpoints

The vendor shall propose solid-state embedded RoIP (Radio over Internet Protocol) controllers that interface non-VoIP radio equipment to an IP network. Controllers must be remotely administered and protected via user authentication. The ability to remotely download firmware updates and upload/download configuration files shall be supported.

The radio controller shall perform analog-to-digital conversion of the audio as well as remote monitoring and control. The device shall work in conjunction with the gateway to provide interoperability with radios from different manufacturers. PC-based radio controllers are not acceptable due to security and maintenance liabilities. Controllers using potentiometers for audio level control are not acceptable.

3.5 Native IP Endpoints

The following native IP-based endpoints shall be supported via direct IP interface from the system gateway to the endpoint.

- P25 Conventional radios via the P25 DFSI standard (TIA-102.BAHA); exclusive use of proprietary protocols will not be acceptable.
- P25 Trunked Radio systems via the P25 CSSI standard (TIA-102.BACA); exclusive use of proprietary protocols will not be acceptable.
- MOTOTRBO Conventional radios (IP Site Connect) via direct IP connectivity to the repeaters; control station interfaces are not acceptable.
- MOTOTRBO Trunked radios (Linked Capacity Plus), single or multi-site, via direct IP connectivity to the repeaters; control station interfaces are not acceptable.
- MOTOTRBO Trunked radios (Connect Plus) via direct IP connectivity to the system controller; control station interfaces are not acceptable.
- TaitNET MPT1327 Trunked Radio systems.
- Session Initiation Protocol (SIP) telephony directly to Cisco, Avaya, and third-party IP-PBXs.
- Daniels Universal Interface Card (UIC) protocol.
- ICOM iDAS Conventional radios via direct IP connectivity to the system controller; control station interfaces are not acceptable.
- Kenwood NEXEDGE Trunked radios via direct IP wireline connection; control station interfaces are not acceptable.
- Tier III DMR radios via the Application Interface Specification (AIS) standard; control station interfaces are not acceptable.
- ED-137 radios via direct IP wireline connection; control station interfaces are not acceptable.

Native IP-based endpoints shall support the ability to send answerback tones and keying tones, and shall support inbound DTMF decoding. IP-based endpoints using the IMBE vocoder shall support sending alert tones via commands to the vocoder, in lieu of sending them in an analog format, in order to preserve the tone's fidelity when heard by field personnel.

3.6 RoIP/Serial Protocol Endpoints

The following endpoints shall be supported via serial tunneling over IP from the RoIP endpoint to the system gateway.

- Sytech iSpace Nextel control station radio
- Sprint Direct Connect control station radio
- Harris M7100 control station radio
- Motorola URC-200 conventional radio
- Tait TM8255 control station radio
- Tait TM9155 control station radio
- Tait TM9300 control station radio
- Tait TM9455 control station radio
- Kenwood TK-5710 control station radio
- SmartNet/SmartZone control station radio

3.7 Auxiliary I/O Endpoints

The vendor shall propose solid-state Form C relays and isolated inputs to accomplish integrated remote control and detecting of external devices including door locks. Contractor must be a DCJS licensed private security business for lock control integration. A minimum of 24 each shall be proposed. It shall be possible to easily expand the number of I/O endpoints with the addition of expansion cards.

3.8 Legacy Console Migration

It shall be possible to connect the IP-based console system in parallel with the existing legacy console system and radio subsystem for simultaneous operation to allow for training of console operators on the new system and to minimize risk of migration. Vendors will state their ability to operate the new system in parallel.

4. System Capabilites

4.1 User Interface

Each console position shall be capable of enabling user authentication to provide security as well as free seating of console operators. The free seating feature shall allow console operators to log in at any console and receive their unique configuration. Each console position shall be configurable to display and/or access multiple unique user screens. These screens shall present the console operator with the endpoints, controls, and informational resources in the form of "electronic push buttons" labeled with names and status colors. Each screen shall be administrator configurable to display any combination of endpoints and/or controls, screen change shortcut pads, pop-up windows, call queues, activity history or a variety of other functions at any location on a screen. Button size, colors, text, and fonts shall be programmable on a per object basis. Background highlights, images and selectable colors shall be available to accent application workspace groupings. Optionally, the system shall be configurable to allow operators to choose from a pre-defined list of their console configurations.

Screens shall be comprised of a combination of endpoint, control, and informational resource graphics. Endpoint graphic shall display the authorized endpoints available to the operator at a particular console. Each endpoint graphic shall support a minimum of two lines of text to easily identify the endpoint.

Each endpoint shall have an individual volume setting for the Select state and the Unselect state. This volume level shall be retained when toggling the endpoint between different states and have an administrator configurable minimum level to prevent muting entirely. The volume level shall only affect a single console position.

A location configurable endpoint receive audio indicator window shall be present to aid in visual identification of active audio on a specific endpoint. The endpoint activity window background, normally white, shall be yellow when Receive Audio is present and shall be red during active TRANSMIT. The proposed system shall allow configurable

icons to be added to endpoint pads enabling visual call indication to associate the call with the corresponding endpoint.

The system shall support the display of multiple programmable 12/24 hour clocks, a master PTT status bar, and VU meter.

It shall be possible to synchronize the time of day clock to an external time source using industry standard Network Time Protocol method.

4.2 Integrated Headset Functionality

The system shall support a NENA compatible E911 headset sharing interface on a per console position basis. This shall consist of a dedicated four-wire, 600 ohm audio connection and a signaling input to the console to indicate the telephone desk set is off-hook. When an operator answers an emergency call on the console system, the system will automatically connect the incoming and outgoing audio to the phone system. The console position shall automatically enable the E911 audio to the operator headset and permit simultaneous radio operation. The NENA headset interface shall incorporate an echo reduction function to eliminate reflected audio on less than optimum telephone connections.

4.3 Conventional Radio Integration

Conventional radios shall be interfaced by a Radio Controller which shall communicate to the gateway via standard LAN/WAN equipment and be equipped for dual port operation. Each port's interface shall be capable of controlling a "direct connected" local radio or a tone remote controlled radio (locally or over a telephony circuit, 2W or 4W). In addition, each radio interface shall also be equipped with a serial data port to support open and proprietary radio-specific protocols.

When interfacing a radio, the Radio Controller shall perform the following functions under software control:

- Interface analog audio to/from the radio
- Convert audio to/from RoIP supporting a minimum of six CODEC choices to allow optimization of bandwidth use
- Support an audio delay to avoid clipping of transmissions
- Decode DTMF digits
- Generate tones for transmission by the radio, either as an answerback event or upon a command from the dispatcher
- Generate single or dual function tones, and for dual function tones generate them either simultaneously or sequentially
- Detect a carrier operated relay (COR) signal from the radio
- Provide push-to-talk (PTT) control to the transmitter
- Select a frequency of the transmitter, if the station supports this function
- Provide LED indications of TX and RX status as well as network status
- Support serial connectivity for control/status of radio technologies requiring such an interface
- Provide sharable remote Aux Input connections
- Provide sharable remote Relay Contact closures

4.4 Advanced Radio Integration

The system shall be capable of integrating radio functionality necessary to interface digital radio systems. The proposed product must support at a minimum: group and individual calls, emergency display and clear, call alerting, call progress tones, and radio ID display. If available, subscriber unit stun/revive and audio encryption is desirable.

4.4.1 P25 Support

The system shall support integration to P25 radio interfaces utilizing the APCO approved DFSI (TIA-102.BAHA) and CSSI (TIA-102.BACA) standards. Exclusive use of proprietary protocols will not be acceptable.

4.4.2 MOTOTRBO Support

The system shall support Motorola's IP Site Connect™ (Conventional), Linked Capacity Plus™ and Connect Plus™ (Multi-site trunked) MOTOTRBO systems. The system shall interface via direct "wire-endpoint" IP connectivity into the MOTOTRBO infrastructure. Third party interfaces for conversion shall not be acceptable.

4.4.3 ICOM IDAS Support

The system shall support ICOM's IDAS single and multi-site conventional systems. The system shall interface via direct "wire-endpoint" IP connectivity into the IDAS infrastructure. Third party interfaces for conversion shall not be acceptable.

4.4.4 Kenwood NEXEDGE Support

The system shall support Kenwood's NEXEDGE single site systems. The system shall interface via direct "wire-endpoint" IP connectivity into the NEXEDGE infrastructure. Third party interfaces for conversion shall not be acceptable.

4.5 Redundant Endpoints

The system shall allow redundant Radio Controllers to be configured for selected endpoints. The system shall detect the availability these endpoints, and automatically switch to the backup endpoint in case of a loss. The system shall also allow a console user to force a switch over to the redundant equipment.

4.6 Centralized Administration

The system shall provide a single administrator software application that provides for remote configuration and diagnostics for consoles, gateways, and endpoints. The administrator software shall support user authentication to prevent unauthorized access. The administrator software shall support live "push" configuration changes from a centralized database to any or all console positions without requiring users to log off. Systems that require individual, local console position configuration shall not be acceptable.

The administrator software must permit user interface changes to be created and tested in an off-endpoint state. The off-endpoint testing shall include the screen layouts/navigation, graphical elements, browser addressing, and contact groupings to eliminate the risk of

errors before distributing the changes. Once the reviewed designs are approved, the new configuration can be "pushed" or distributed to the live consoles.

Every screen element, from graphical backgrounds to pad sizes, colors, and fonts, must be configurable by the administrator software. It shall be easy to design, maintain, and deploy new console screens using the software.

The administrator software shall provide a user login capability for security. Each configured login shall provide varying levels of access for each component of the maintenance tool.

4.7 Logging Recorder Interfaces

The proposed system shall support recording of console and/or endpoints. Both Analog and IP recorders shall be supported.

Consoles shall be configurable to output the following audio sources:

- Select and Microphone audio, mixed together
- Unselect audio
- Radio audio

These audio sources shall be available in either traditional two-wire, 600-ohm analog output on the rear of the console or in standard streaming Real Time Protocol (RTP) format. For IP recording, the console shall transcode the IP audio into a user-selectable CODEC format. A minimum of three (3) CODECs shall be available to optimize bandwidth.

The proposed Radio Controller shall have an option to present an analog recording output on the second radio port. Any paging tones sent by the Radio Controller shall be present in both the analog and IP recording outputs.

Both the console and endpoint logging recorder outputs shall include descriptive metadata. The metadata shall include information about the call such as Console ID, User Login Name, Endpoint Name and Endpoint Type. Depending on the endpoint type other data should present such as Radio Unit ID. The console vendor shall describe the metadata available and identify recorder vendors that are certified for using the metadata.

4.8 Diagnostics

The proposed system shall include easy to use diagnostics for each component to assist in troubleshooting problems. Each of these components must be accessible via a standard Web browser, or through the administrator software. Detailed log files shall be stored on the console position PCs to ensure the ability to easily pinpoint issues.

A diagnostic logger shall be available to centrally correlate the alarm and/or anomaly events within the proposed system. The diagnostic logger shall denote the date/time of an event, the source component of the alarm or event, the alarm type, such as "Alarm" or "Event," display the status of the event and include the severity of each such as Major or Minor for Alarms, and Low or High for system event anomalies. New arriving alarms shall be indicated on selected console positions with visual and audible alerts.

The diagnostics logger shall contain a “system view” that provides a snapshot of the system’s networked components. Pertinent information shall be provided for each component, allowing a quick way to check system health.

4.9 SNMP Alarms

The proposed system shall generate SNMP traps to enable monitoring by 3rd party SNMP management software.

4.10 Network Configuration and VoIP Quality of Service (QOS)

VoIP consoles shall be capable of communication across an enterprise WAN or private allocated network dedicated to the console system. IP network connectivity shall be 100Mb/s to interconnect all of the elements, from the consoles, to the gateways, to the VoIP endpoints. LAN segments shall support multicast.

The system shall support the QoS technique Differentiated Services Code Point (DSCP). Packets are marked using the Type of Service (ToS) field in the packet header. The network infrastructure shall be compatible and configured to recognize DSCP marked packets and act on them accordingly to ensure the proper QoS.

The gateways shall communicate to all endpoints via unicast. For efficiency on the LAN, the gateway shall forward the unicast packets from the endpoint to the console positions via multicast.

Latency between network-based devices shall be controlled through adjustable buffers. The jitter buffer settings must be user-tunable on a per-device basis; both the endpoint and operator software must support this capability. Proposed solutions must support variable packet sizes down to 20ms, allowing the buffer to be variably set to a maximum of at least 60ms.

4.11 WAN Deployment

The system shall have the capability to be deployed across Wide Area Networks (WANs) that are incapable of being configured to carry multicast traffic. Network traffic shall be optimized to enable remote console/endpoint deployment on low-bandwidth network segments. Proposals shall describe the methods used to enable this capability.

4.12 Software Updates

The system’s software shall be capable of silent push deployment to allow administrators to install and update software from a central location.

4.13 Auxiliary Input / Output Control

System shall be capable of IP-based remote controllable auxiliary inputs and outputs. The system shall scale to support over 1,000 IP accessible I/O connections in multiple locations across an Enterprise network. Outputs shall be “Form C,” configurable as momentary or latched relays. Inputs shall be optically isolated and trigger on detection of voltage, ground, or a contact closure. The inputs and outputs shall be 19 inch rack mountable devices that are locally powered.

4.14 Encryption

The proposed console system shall be capable of supporting industry standard encryption algorithms, including AES and DES when required by the deployed radio infrastructure. P25 Key Fill Devices (KFD) shall be supported to allow loading of encryption key sets from the KFD. Selection of the appropriate key for each endpoint shall be permitted from each console position. Individual radio endpoints shall be configurable to always have encryption enabled. There shall be an option to allow endpoints using encryption to automatically change the encryption key being used for the next outbound transmission to match the inbound encrypted audio's key.

4.15 Console Monitoring

The system shall provide a Console Monitor capability for designated supervisor console positions. When configured, this function shall allow the supervisor's console to activate the function and select one or more other consoles to monitor. While activated, the monitoring console shall hear all conversations in the monitored console's selected endpoints. Multiple supervisor consoles shall be able to monitor a single console.

4.16 Tone and Voice Paging

The system shall provide paging controls integrated into each console position supporting all formats in the table below. Stacking and steering of pages as well as one-touch paging stacks shall be supported. Paging tones shall be produced in the RoIP Radio controller to ensure fidelity when low bit-rate CODECs are used.

When stacks of pages are sent, the system shall have a configuration to allow alert tones to be played either at the end of the stack, or after every page in the stack. When pages in a stack are going to more than one endpoint, the system shall allow the sending of those pages to be in parallel, reducing the total paging time.

Paging Formats	
Format	**Call Sequence**
Motorola 2 + 2, Quick Call 1 (Series Y)	Individual Call Group Call
Motorola 1 + 1 Quick Call 2 (General) Quick Call 2 (Modified) Quick Call 2 (Extended)	Individual Call Tone & Voice Group Call Tone Only Battery Save
Reach Two Tone	Reach Slow Reach Fast Reach Group Call Two Tone
Reach Single Tone	Reach Single Tone Battery Save
Avcall 2 + 2 (SELCAL)	Unit Call
General Electric	GE Type 99

Paging Formats	
Format	**Call Sequence**
Plectron Single Tone Duotone Fast Duotone Slow Motorola	Individual Call
DTMF	Individual Call Group Call
5/6 Tone	Unit Call
Knox	Tone Only
Customized	Individual Call Group Call

4.17 Time Synchronization

The system shall synchronize its internal time of day clock with an external time source using the Network Time Protocol (NTP) servers.

5. Console GUI Controls

The following configurable controls and capabilities shall be available in the system. The owner, through the use of a centralized administration tool may incorporate any of these parameters into the console screen design according to their functional requirements. A single screen shall have the capacity to display any combination of endpoint or controls, at any location on a screen. The size, fonts, colors, and icons shall be owner configurable. Owner configurable background highlights shall be supported utilizing different colors to accent application workspace grouping.

Tabbed modules shall be definable allowing easy access to endpoints and controls when required. All tabbed backgrounds and the tabs themselves shall be administratively configurable for color, text, font, and size and the addition of icons when required.

Required pad and functions are listed below in alphabetical order followed by a brief description of the associated operation.

5.1 Action Pads

These pads when placed on the operator screen shall provide a navigation feature enabling the dispatcher to switch screens or invoke a “pop-up” screen with a single pad selection. These pads shall be configurable and shall contain the text necessary to identify the action to be taken.

5.2 Alert Tones

These pads shall provide the control for generation of owner-programmable alert tones. Each shall be owner-programmable for frequency, duration, and level. When

touched/clicked, the tone will be applied to all selected endpoints and will be indicated on the VU bar graph.

5.3 Auto Contacts

Auto contact pads shall allow the dispatcher to automatically page a contact or group of contacts (for example, a pre-defined paging stack) by touching a pad on their screen.

5.4 Aux Control

The system shall be capable of providing “Form C” contact closures to perform external control functions. Each “Form C” contact shall be titled in the system database, and programmed for latched or momentary function. Each auxiliary control pad shall visually indicate a change in state when activated.

5.5 Browser Control

These pads, when directed to a specific IP address, website or local document, such as online help manuals, streaming media, weather alerts, etc., shall invoke a screen within the operator’s display providing the pre-configured content. Configuration of the URL and/or content shall not be accessible to the dispatcher and will be administered by authorized personnel only. The operator shall have the ability to close browser screens when not in use.

5.6 Dynamic Group

Dynamic Group pads shall allow a dispatcher to interactively build Endpoint groups to allow functions to be performed on a group of endpoints. Touching/clicking the endpoint group pad will place all the endpoints in multi select and allow PTT on the entire group. Likewise, the entire group may be placed in unselect or patch, or reverted to default state with a single touch of the proper function button.

5.7 Encryption Enable/Disable

For radio endpoints that require control of encrypted audio, the encryption enable/disable pad shall cause a selected radio endpoint to activate/de-activate encryption algorithms supported within the system. It shall be possible to set certain radio endpoints to always be encrypted, disabling this control for that endpoint.

5.8 Group Pads

Endpoint group pads shall allow functions to be performed on a preset group of endpoints. Touching/clicking the endpoint group pad will place all the endpoints in multi select and allow PTT on the entire group. Likewise, the entire group may be placed in unselect or patch, or reverted to default state with a single touch of the proper function button.

5.9 PTT (On-Screen)

This pad shall automatically invoke a “Push-to-Talk” transmit action on the Select or Simul Select endpoints.

5.10 PTT Indicator

This graphic indicator shall display the PTT status of that specific console when the respective console is transmitting.

5.11 Release

This pad shall automatically cause the selected endpoint or group to revert to the default state, which may be configured for mute or unselect.

5.12 Simul Select

Touching/clicking the simul select function pad shall allow subsequently touched/clicked endpoints to act in parallel. Transmit endpoint audio and PTT functions shall be sent to all selected endpoints simultaneously. Touching/clicking the simul select pad again shall deactivate all of the selected endpoints.

5.13 System Clock

This module shall be placed on the screen and be configurable for 12- or 24- hour display formats. Multiple clocks shall be supported on the same or multiple screens and each shall support programming to a unique time zone if desired.

5.14 Alert Tones

This function will allow the operator to activate an alert tone across a selected endpoint(s). The system shall provide a minimum of five (5) alert tone options.

5.15 Volume Control

This function module shall allow the operator to adjust a selected endpoint's Select and Unselect audio levels. The Volume display shall indicate the name of the selected endpoint for clarity.

5.16 VU Meter

The operator screen shall support the display of a VU bar graph that depicts the measured audio amplitude of outbound audio from the dispatcher's console position. This module shall be configurable for size and may be located anywhere on the operator’s screen.

6. Training and Installation Assistance

Training shall be provided on site concurrent with installation assistance by vendor field engineering personnel. Training shall cover theory of operation, troubleshooting techniques, system database entry, and emergency restoration procedures. Maintenance training shall be conducted at a level of comprehension suitable for an electronic technician. Operator training shall also be provided.

The following types of training shall be provided:

6.1 Operator Training

On-site operator training shall be provided to all dispatchers and supervisors. Up to four (4) sessions over a two-day period of on-site Operator Training shall be available. This portion of the training period should not exceed two hours per session. All course materials shall be included.

6.2 Maintenance Training

As on option, on-site maintenance training shall be provided to maintenance personnel. This portion of the training period should not exceed two days per session. All course materials shall be included.

6.3 System Administration Training

On-site system administration training shall be provided to supervisory and/or maintenance personnel. This portion of training period should not exceed eight hours per session. All course materials shall be included.

7. Vendors Responsibilty

7.1 Vendor shall provide all VoIP dispatch console equipment, labor, materials and support necessary for complete installation and support ongoing.

7.2 Vendor shall perform work in compliance with local, State and National Electric Code regulations.

7.3 Potential vendors must be certified by system manufacturer to sell and support the proposed solution in the Commonwealth of Virginia.

7.4 The 24x7x365 nature of a 911 operations requires the vendor have fairly local, experienced, and proposed system certified technical support staff that can respond to problems in the contracted time frames. Vendor must provide a detailed technical response plane for system troubles when reported, as well as explain the system trouble reporting process.

7.4.1 Radio System Outage – Customer requires a one (1) hour on scene "and" remote access response time; not either or. Outage will be identified as a single channel outage or full system down outage.

7.4.2 Critical Equipment Failure – Customer requires a four (4) hour on scene response time and a one (1) hour remote access response time.

7.4.3 Non-Critical Equipment Failure and/or problem- Customer requires a six hour (6) hour on scene response time.

Customer also requires "vendor" to have full remote access to the proposed radio solution for remote diagnostics, troubleshooting, and equipment resets. Remote access shall not require a technician to be on sight prior to Vendor having remote access to the system.

All work shall be neat in appearance, secure in mounting, labeled and tested prior to acceptance.

8. Service

8.1 Response to RFP shall identify cost of year 1 service contract for 24x7x365 support meeting the response times and guidelines identified in Section 7.

8.2 Response to this RFP shall also include separately listed years 2 through 5 service contract pricing for 24x7x365 support meeting the response times and guidelines identified in Section 7.

If needed by MHC911, Vendor shall agree to an "annual" support contract, as needed, matching the annual amount proposed in the response to this RFP for years 2 through 5.

9. Pricing Schedule

9.1 Furnish all required VoIP Dispatch Console Equipment $_____

9.2 Provide Professional Services for Installation, Configuration and Training. $_____

9.3 Provide Support & Maintenance for first year. $_____

9.4 Provide Support & Maintenance for years 2 through 5, listed separately. $_____

9.5 Other expenses (explain). $_____

The vendor shall provide pricing on all items, maintenance, and support.

In addition, vendor shall provide percent discount off list for additional equipment needed. Equipment quantity may vary from that listed on the Pricing Schedule. Pricing shall remain in effect for one (1) year from execution of contract.

10. Other Requirements

10.1 Support Services

In response to this RFP, vendor shall clearly identify and define the ongoing technical support services that will be provided as part of the yearly support agreement. This

shall include guaranteed response times as well as explaining remote access ability of support team.

10.2 Spare Parts

The vendor must maintain or have quick access to spare parts for mission critical components of the solution and explain such in response to RFP.

10.3 No Interruption of Services

Vendor understands and agrees the existing radio consoles will not be disrupted during installation or cutover to the new system. Existing system must remain live during installation and cutover.

10.4 Integration with Existing MHC911 Recorder

The proposed radio console solution shall interface with MHC911's existing Higher Ground Digital Recording solution located at MHC911 as analog and/or VoIP.

10.5 Vendor qualifications and references

The vendor shall provide a detailed explanation of qualifications and experience in the radio console industry. Vendor shall provide a list of references where they have installed and/or maintained a radio system similar to the one being proposed.

11. Contract Period

The contract associated with this project will have two components.

11.1 The first component will be the contract for the purchase, installation, and training on the proposed radio console solution.

11.2 The second component of the contract will be the annual support agreement between Martinsville-Henry County 911 and the vendor for the required annual support of the radio system, meeting the response times identified in Section 7. The initial contract period will be for 1-year and available for annual renewal; and vendor must provide the option and pricing for multi-year. Specific terms of the support and maintenance contract should be presented by the vendor in your RFP response.

12. Selection Criteria

All responses to this RFP must include acknowledgement and acceptance to all requirements and standards contained within this RFP.

The vendor selected and awarded a contract for this project will be selected based on review of the following categories. Each category will be scored individually on a 1 through 10 point system with one being bad and ten being good. The weight of each category is listed below.

12.1 Overall price for initial purchase and installation. (15%)

12.2 Support costs for years 2 through 5 annually. (15%)

12.3 Ability to meet support needs, times, and expectations as explained in Section 7, including ability for support team to have remote access for monitoring, troubleshooting, and servicing the radio system remotely. (20%)

12.4 Vendor's qualifications, years in service, experience, as well as references as explained in section 10.5. (10%)

12.5 Vendor's work history and/or experience with Martinsville-Henry County 911 Center related to radio system installations and/or maintenance. (10%)

12.6 Vendor's ability to sell, install, and maintain the proposed system without the use of second or third party contractors/vendors. (15%)

12.7 Proposed system reputation in the industry, functionality, and user friendliness. (10%)

12.8 Proposal completeness and ease of understanding. (5%)

13. RFP Clarification

It is the responsibility of the vendor to request clarification concerning questions pertaining to the terms and conditions, specifications, scope of work, and definitions contained within this RFP no later than five days prior to the ending date. Contact information;

JR Powell, 911 Director
Email: vpowell@co.henry.va.us
Office: 276-632-7677