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The Putnam Special Services District is soliciting bids for Police Dispatch Equipment

The bid is for a 2 position dispatch console

All bidders must be properly licensed and insured

There will be a mandatory pre bid walk through on August 5th 2022 at 9:00am at the Putnam Police Department. Any prospective bidders are required to attend.

Questions for the purpose of clarifying this bid must be submitted in writing to justin.lussier@putnampolice.com prior to August 5th 2022. All prospective bidders will be required to supply an email address at the walk through. Each prospective bidder will receive an email with all questions and answers.

Bids must be received August 15th 2022 at 4:00pm.

The successful bidder shall be authorized dealers able to sell, install, configure, train and maintain all equipment.

The successful bidder must be able to have the project substantially completed by September 30th 2022 due to grant funding spending requirements.

It shall be the responsibility of the selected respondent to verify the completeness of the system and any utilities needed by Putnam Special Services District to meet the intent of the specifications and final operations to provide a reliable working console. Any additional services, labor, components needed to accomplish this will be provided at no additional cost to the Putnam Special Services District.

Must have physical brick and mortar office within 45 miles of Putnam, Ct

Must own and operate a 24x7x365 support services

All software, utilities, and application programs offered shall be the latest version and shall meet and exceed all specifications and standards. Any exceptions must be indicated in the respondent's proposal. Failure to do so shall be grounds for rejection of the proposal.

On-Site Training to be provided on all equipment.

Two hard copies and one electronic copy of system drawings including model numbers, serial numbers, equipment location, user names, passwords, IP addresses and wiring shall be provided to the Chief of Police within ninety days of completion of project.

All equipment, labor and services will carry a minimum of 3 year warranty from the date of completion. This is to include all phone support as well as in house services.

A list of any subcontractors must be provided.

It is the responsibility of the bidder to ensure all subcontractors are insured per the Towns requirements. Proof of insurance will be required.

All bidders must bid the bid in its entirety. The Town will not accept bids for separate items.

Any exceptions to the bid must be documented on a separate sheet.

Any software related annual maintenance fees must be clearly identified and included in the bid for 3 years.

RADIO DISPATCH CONSOLE

The town requirements for radio dispatch console must include:

- Two positions.
- Four speakers per position (1-select and 3-unselect)
- Interface and control 12 base/control stations. (tone or local control)
- All Base station interface panels must be rack mounted.
- Control 20 auxiliary devices such as doors.
- Display door indicator status.
- Include wireless headset interface for each position, tied into the Console and phone.
- Radio dispatch console must be manufactured to the following minimum specifications, expansion capabilities, and available options. Although many features listed will not be used at this time, all features must be standard or upgradeable for future expansion:

The Dispatch System must support the following radio interfaces:

- 1) Local – Direct connection to fixed radio resources, supporting TX/RX audio paths, Channel change (Logic, BCD or Serial), PTT and COR logics.
- 2) Tone – Generation of industry standard PTT tones on 2 or 4 wire circuits.
- 3) E&M – 6 wire interfaces, balanced TX/RX audios, PTT and COR Logics.
- 4) P25 CSSI – Support the TIA-102 BACA-2 Console Subsystem Interface (CSSI) standard, connecting console to the P25 Trunking system.
- 5) P25 DFSI - Support the TIA-102 BAHA Fixed Station Interface (FSI) standard, allowing up to 25 consoles to be connected to a single DFSI endpoint.

- 6) P25 AFSI – Support Analog Fixed Station Interface, using either EF Johnson, Kenwood or Tait mobile radios.
- 7) Kenwood NEXEDGE Direct IP Interface for both Trunking and Conventional systems, allowing up to 10 consoles to be connected to each site and 100 total.
- 8) DMR-AIS Direct IP Interface to radio systems using the AIS standard employing AMBE vocoder.
- 9) DMR – Using either Hytera, Kenwood or Tait mobile radios.
- 10) Motorola MOTOTRBO – Analog, Digital, Capacity Plus, Linked Capacity Plus and Connect Plus.
- 11) Motorola WAVE7000 – Using Sonim XP8 LTE handheld.
- 12) NXDN – Using either NEXEDGE or IDAS mobile radios.
- 13) iDEN – Motorola Harmony systems.
- 14) TETRA – Support Sepura, Hytera or PowerTrunk mobile radio interfaces.

The GUI based dispatch console must support the following basic functions:

- 1) The console must function on a standalone computer with its only connection for radio control being IP network based.
- 2) The console must operate on either Microsoft 8.1 or WIN10 Professional 64 Bit.
- 3) The console must support standard commercial LCD and Touch screens ranging from 15” in size and up.
- 4) The console must support up to 200 lines of audio sources with unlimited number of consoles.
- 5) The console must support both Unicast and Multicast packet transport.
- 6) The console must support multicast based VoIP communications on the network and utilize at least IGMP v3.
- 7) The console must support multiple audio compression Vocoders and be selectable on a line by line bases.
- 8) The console must overcome network latency and packet loss; the use of jitter/packet buffers is an acceptable means to overcome this issue.
- 9) The console must be completely configurable in terms of its look and feel. Required user definable elements must include: Button color in up and down positions, text color in up and down positions, text in up and down positions, icon in up and down position, button border color, and button font typeface and size.
- 10) The console must be able to create logical groupings of buttons to be hidden in windows that can be accessed as required by the dispatcher. The ability to open these button windows on activity must be supported.
- 11) The console must be completely configurable in the ability for a Dispatcher to close, move, resize, minimize or maximize the console application.
- 12) The console must preclude a Dispatcher from changing screen designs.
- 13) The console must support using standard Dispatcher style accessories to include: Headset (wired or wireless), desk microphones and footswitch.
- 14) The console must support using standard PC speaker sets. Up to 3 sets or 6 total speakers supported.

The GUI based dispatch console must support the following basic features:

- 1) The console must support at the Per-Line level: Select, channel change, volume control, Mute, Call Recording and Instant PTT (Push to Talk) functions.
- 2) The console must support Group Select, Pre-programmed Group and TX ALL functions.
- 3) The console must support Master Select, UnSelected and NENA Phone volume controls with selectable gain and position (Horizontal or Vertical).
- 4) The console must support Parallel console TX Monitor, Cross-mute and Cross-patch functions.

- 5) The console must support Supervisory line takeover function, password support must be required.
- 6) The console must support Channel Change functions using either individual buttons or Up/Down arrow methods.
- 7) The console must support Intercom function between other positions or remote tower sites.
- 8) The console must support Monitor (CTCSS), open Squelch functions when using either an on-screen button or external input logic.
- 9) The console must support VU Meter Indicators at both the Per-Line and Main level.
- 10) The console must support Mute of individual, All, and pre-programmed groups of lines.
- 11) The console must support a Master PTT function, pressing will key and route microphone audio to selected line(s). Using keyboard spacebar, foot switch or PTT button on screen are acceptable methods to accomplish feature.
- 12) The console must support a Last Call PTT function, pressing this button will transmit on the last active channel.
- 13) The console must support a Call Queue window for incoming radio calls.
- 14) The console must have the ability to execute (run) other applications via a button press.
- 15) The console must support Scan control on radios supporting scan. The console must also update its display based on the channel upon which the radios stops scanning to play receive audio. Note: Function requires radio with scan function and advanced interface to retrieve channel information during Scan stop.
- 16) The console must support Coded/Clear (Encryption) control on radios supporting this feature. **Note:** Function requires radio with Encryption function and advanced interface to operate.
- 17) The console must support an RX Block feature, used to mute other geography-separated lines with same RF frequency from feeding back into console during PTT operation. An RX Block Off delay timer must be supported for network latency.
- 18) The console must support Primary and backup line options for redundant radio connections. Console must be able to display which line is currently active and allow for manual or automatic switching of radio control.
- 19) The console must support remote relay closure and input monitoring via network.
- 20) The console must support the display of web pages with a variable refresh interval.
- 21) The console must display ANI for Kenwood Fleet Sync, Motorola MDC1200, DTMF, iDEN, P25, MOTOTRBO, DMR, TETRA, NXDN and IDAS.
- 22) The console must support translating ANI information into Alias names for display on Select buttons and in call logs, it should have a minimum 6000 unit database.

The GUI based dispatch console must support the following Audio routing features:

- 1) The console must support the ability to operate in Full Duplex.
- 2) The console must support the ability to sum Selected and Unselected audio to the headset, Mute both Unselect and Select RX audio during PTT operation.
- 3) The console must support the ability to route RX audio to any of 6 speakers.

The GUI based dispatch console must support the following Call Queue features:

1. The console must support placing incoming radio calls into a Call Queue window based on the following call types: Call Alert, Group Call, Private or Selective call and Group Status type calls. These calls can come from a variety of signaling types to include: MDC, Fleet Sync, MOTOTRBO, NEXEDGE Direct IP, 5/6 Tone, DTMF and serial controlled control stations.
2. The console system shall support that any call status changed on one console will be updated on parallel consoles. These changes will include: Processing and Complete.
3. The Call Queue window must have the ability to select and show the following information: Date, Time, Frequency, Console ID, Line Name, Status and ANI information fields.

4. The Call Queue window must have the ability to sort entries by Time or Status ID.
5. The Call Queue Window shall support the ability for dispatcher to move and resize.

The GUI based dispatch console must support the following Telephone features:

- 1) The console must support telephone resources accessible on the network. Connection to a SIP Server must be supported.
- 2) The console must support the following Telephone features: Call, Answer, Call Waiting, Call Transfer (Blind or Consultation), Call Forwarding, 3-Way Conference Do Not Disturb, Flash-hook, Hold, Mute, Autodial and Volume control.
- 3) The console must support a store and forward function for Telephone dialing.
- 4) The console must support a phone book directory with up to 5000 users with 6 sub-directory phone books.
- 5) The console must support selectable ring tones per line and the ability to program the ring tone to play on a specific speaker.

The GUI based dispatch console must support the following Group and Crosspatch features:

- 1) The console must support up to 30 concurrent Crosspatches.
- 2) The console must support Pre-programmed Crosspatches – The ability to create a pre-determined crosspatch with the press of one button.
- 3) The console must support the following manual Crosspatch operations: Setup, Teardown, PTT and Block.
- 4) The console must support Radio to Radio and Radio to Phone Crosspatches
- 5) The console must support dispatcher selected Simulcast groups.
- 6) The console must support Pre-programmed groupings (Simul-selection) of lines and frequency that are activated with a single button push.
- 7) The console must support programmable groupings (Simul-selection) of lines and frequency that can be programmed and activated with a single button push by the dispatcher.

The GUI based dispatch console must support the following Emergency Call features:

- 1) The console must support Emergency functions including audible and visual alarms of a supported ANI emergency call from the field. Inter-console Acknowledge and Resolve features must be supported. Supported formats are; P25, DMR, MOTOTRBO, NXDN, MDC1200, FleetSync, iDEN, TETRA, DTMF and 5/6 Tone.
- 2) The console must support Active Emergency Call and Emergency Call History windows.

The GUI based dispatch console must support the following IRR and Call History features:

- 1) The console must support Instant Recall Recorder (IRR) with a minimum of 10 minutes of receive audio played on any installed speaker. Audio must be accessible on a call by call basis from the call history screen, or by pressing a button to play the last X seconds of audio, where X is between 1 and 600 seconds.
- 2) The console must support a Global Call History window and must show the following information: Date, Time, Call Duration, Frequency, Talk-Group, Comments, Status and ANI information fields. The feature to playback any audio stored for the last 10 minutes of calls must be supported.
- 3) The console must support Per-Line Call History windows; these must have the ability to show the following information: Date, Time, Call Duration, Frequency, Talk-Group, Comments, Status and ANI information fields.
- 4) The console must support as an option, Per-Line Call Playback for up to 100 lines in the console. Each line will support 60 minutes of RX and TX audio recording with the ability to Pin and Comment the audio file.

The GUI based dispatch console must support the following Over the Air MSK ANI Decode and Encode features:

- 1) The console must support the following ANI formats: MDC1200 and FleetSync.
- 2) The console must display ANI values as either the number itself or by an alias table lookup. The information must be programmable to remain on the line select button until the next call is received.
- 3) The console must support encoding of Motorola MDC1200 messages; Messages must include; ANI, Status, Stun, Revive, Selective Call, Pre-Canned Text, Remote Monitor, Emergency Receive and Acknowledge.
- 4) The console must support encoding Kenwood FleetSync messages; Messages must include; ANI, Emergency Receive, Status, Text, Stun, Revive and Selective Call.

The GUI based dispatch console must support the following Motorola MOTOTRBO features:

- 1) The console system must support allowing up to 10 consoles to be connected to each physical control point radio.
- 2) The console must support the following MOTOTRBO features for Digital, Capacity Plus and Link Capacity Plus systems: Group and Private Calls, ANI, Channel change, GPS, Radio Disable / Enable, Status Messaging, Text Messaging – Precanned and Short, Remote Monitor, Emergency Receive and Acknowledgement.
- 3) The console must support the following MOTOTRBO features for Connect Plus Systems: Group and Private Calls, ANI, Channel change, Radio Disable / Enable, Status Messaging, Remote Monitor, Emergency Receive and Acknowledgement.

The GUI based dispatch console must support the following P25 features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The GUI based dispatch console must support the following DMR features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The GUI based dispatch console must support the following NXDN features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The GUI based dispatch console must support the following Motorola iDEN features:

- 1) iDEN Radio Features – operation allows connection to an iDEN Network, such as Southern LINC, Motorola Harmony, etc. Operating features supported are Direct Connect, Group Call, Emergency Group Call and Call Alert. **Note:** Additional equipment for connectivity to iDEN device will be allowed.

The GUI based dispatch console must support the following TETRA features:

- 1) TETRA Radio Features – operation supports an interface to a TETRA Digital Trunked system using the Peripheral Equipment Interface (PEI). This interface allows dispatch access to TETRA radio assets. Supported operating modes are Direct Mode Group Call (DMO), Trunked Group Call, Trunked Half Duplex Private Call, Trunked User Defined Scan List (UDSL) and Trunked Full Duplex Private Call. **Note:** Supported features can vary based on selected radio, please see release notes.

The GUI based dispatch console must support compatibility with the TIA-102 BAHA Fixed Station Interface (FSI) standard or P25 DFSI functionally:

- 1) The console system must support allowing up to 25 consoles to be connected to a single DFSI endpoint.
- 2) The console system must support allowing for console positions to be configured to work as Standalone, Server, Client or as a Back-Up Server/Client.
- 3) The console system must support auto-switching to a backup DFSI endpoint if connections to the primary fail.
- 4) The console must support the ability to select transmitter and receiver channel, including NAC code and Talkgroup.
- 5) The console must support the ability to Display selected channel name in alpha-numeric format.
- 6) The console must support the ability to Display active received channel(s).
- 7) The console must support the ability to Display received mode (digital or analog) and signal status (clear or encrypted).
- 8) The console must support the ability to Display received NAC code in hexadecimal format and alpha-numeric Alias.
- 9) The console must support the ability to Display received Talkgroup and Unit ID in decimal format, and alpha-numeric Alias.
- 10) The console must support the ability to place and receive unit-to-unit individual/private calls.
- 11) The console must support the ability to do both Multicast and Unicast IP.
- 12) The console must support the ability to perform text messaging.
- 13) The console must support the ability to support Busy Channel lockout on parallel consoles, with indication.
- 14) The console must support the ability to perform unit paging/call alert with acknowledgement.
- 15) The console must support the ability to receive and transmit analog and digital DTMF.
- 16) The console must support emergency call status display and alarm with display retention, showing unit ID/Alias of unit sending emergency signal.
- 17) The console must support Channel patching without double Vocoding.
- 18) The console must support Unique Unit ID and IP address for each console.
- 19) The console must support Controllable receive audio level with muting.
- 20) The console must support the ability to select a specific transmitter on a voting system.
- 21) The console must support Selective squelch using NAC and Talkgroup.
- 22) The console shall have the capability to select receive and transmit talk groups. This provides the console operator the ability to monitor only the desired talk groups on a shared network.

The GUI based dispatch console must support compatibility with the TIA-102 BACA-2 Console Subsystem Interface (CSSI) standard or P25 CSSI functionally:

- 1) The console system must support 1 console to be connected to a single P25 trunking system.
- 2) The console must support the ability to monitor and talk on up to 24 talk-paths.
- 3) The console must support the ability to select transmitter and receiver channel, including NAC code and Talkgroup.

- 4) The console must support the ability to Display selected channel name in alpha-numeric format.
- 5) The console must support the ability to Display active received channel(s).
- 6) The console must support the ability to Display signal status (clear or encrypted).
- 7) The console must support the ability to Display received Talkgroup and Unit ID in decimal format, and alpha-numeric Alias.
- 8) The console must support the ability to place and receive unit-to-unit individual/private calls.
- 9) The console must support the ability to perform short format text messaging.
- 10) The console must support the ability to perform unit paging/call alert with acknowledgement.
- 11) The console must support emergency call status display and alarm with display retention, showing unit ID/Alias of unit sending emergency signal.
- 12) The console must support Channel patching without double Vocoding.
- 13) The console must support Controllable receive audio level with muting.
- 14) The console shall have the capability to select receive and transmit talk groups. This provides the console operator the ability to monitor only the desired talk groups on a shared network.

The GUI based dispatch console must support encryption for P25 DFSI and P25 CSSI as an option:

- 1) The feature should support 256-bit AES and DES algorithm with ON/OFF capabilities.
- 2) The feature should be FIPS 140-2 Compliant
- 3) The feature should support 100 Keys and 50 Profiles
- 4) The feature should load using either Motorola and Tait encryption key loaders (Motorola KVL 3000, Motorola KVL 4000 and Tait Key Fill Device)

The GUI based dispatch console must support Kenwood NEXEDGE Trunking features using a Direct IP interface:

- 1) The console system must support allowing up to 10 consoles to be connected to each site and up to ten Sites for a maximum of 100 total.
- 2) The features should include: Narrow (12.5Khz) or Very Narrow (6.25Khz) Channel Spacing. Support up to 24 Talk Paths per Console. Selectable Talk Group, Broadcast, Group and Unit Calls. Emergency Call Decode with Acknowledgement Capabilities, Radio Remote Monitor with Supervisor Password, Over-The-Air-Aliasing, Radio Status Decode and Encode, Radio Status Request, Radio Remote TG Re-Grouping, Radio Stun and Revive, GPS Decode with IP Interface, Text Messaging and Alert Call.

The GUI based dispatch console must support Kenwood NEXEDGE Conventional features using a Direct IP interface:

- 1) The console system must support allowing up to 10 consoles to be connected to each site and up to ten Sites for a maximum of 100 total.
- 2) The console shall support Conventional with and without NXDN signaling while also supporting RAN coding.
- 3) The features should include: Narrow (12.5Khz) or Very Narrow (6.25Khz) Channel Spacing. Support up to 24 Talk Paths per Console. Selectable Talk Group, Group and Unit Calls. Emergency Call Decode with Acknowledgement Capabilities, Radio Remote Monitor with Supervisor Password, Over-The-Air-Aliasing, Radio Status Decode and Encode, Radio Status Request, Radio Stun and Revive, GPS Decode with IP Interface, and Alert Call.

The GUI based dispatch console must support Kenwood NEXEDGE 15bit encryption for Direct IP interfaces:

- 1) The features should support any of 16 pre-programmed keys with Selectable ON/OFF capabilities.

The GUI based dispatch console must support the following Paging, Alert Tone and Annunciation (.wav) features:

- 1) The console must support the following paging formats: DTMF, Knox, 2-Tone 100 or 1000, Quickcall II, 5/6 Tone and manually entered tones must be supported.
- 2) The console must support the following paging functions: One Touch, Page Stack, Send and Cancel.
- 3) The console must support playing Annunciation files to selected or pre-programmed lines when a button is pressed or directed by Input logic.
- 4) The console must support the ability to close programmed relays when a page or Annunciation button is pressed.
- 5) The console must support Alert tones with the following audio formats: Constant tone, Pulsed tone, and Hi-Lo warble. Timing and frequencies must be programmable.
- 6) The console must support Per-line Marker Tone generation; timing and frequencies must be programmable.

The GUI based dispatch console must support an API interface to 3rd party applications supporting key functions:

- 1) The console must support the following API features: Main PTT, Line Select, Line PTT, Group Select, Clear Lines, Crosspatch Select and Clear, Private Call, ANI, Paging Functions, Event Notification Subscription, Channel change, Forward GPS Data, Remote Monitor, Forward Emergency Event.

Dispatch Accessory Adaptor Specification

The Dispatch Accessory adaptor must support the following basic features:

- 1) Dispatch Accessory adaptor must be remote mountable from console PC. It must be mountable on top or under a desktop, either horizontally or vertically using optional brackets.
- 2) The accessory adaptor connection to PC must be by a USB data cable.
- 3) The accessory adaptor must have an addressable IP NIC port for configuration and firmware updates.
- 4) The accessory adaptor must be powered by +12 Vdc, a supplied 110/220Vac to 12 Vdc switching power supply is acceptable.
- 5) The accessory adaptor dimensions must be no larger than 2" H x 8.25" D x 11" W.
- 6) The accessory adaptor must support up to 3 sets of standard computer speakers via 3 1/8" stereo jacks offering a total of 6 speaker tracks.
- 7) The accessory adaptor will support a single dual 1/4" headset input and have option for at least 2 additional jack boxes. Microphone audio will be steered from the headset that has the active PTT button.
- 8) Each headset jack will have a volume control and be configurable for both 4 and 6 wire dual 1/4" plug headsets.
- 9) The accessory adaptor will support single and dual speaker headset models. This should include Telex Dispatch ANR single and dual speaker headset models.
- 10) The accessory adaptor will support connection to all standard non-amplified microphone types.
- 11) The accessory adaptor will support connection to an external audio source using 1/8" stereo jack allowing operator to hear external audio in headset or speaker.
- 12) The accessory adaptor will support connection to a desk microphone. Desk microphone input will support both powered and non-powered microphones. This must include Electret and Dynamic microphones.

- 13) The accessory adaptor must support connection to NENA compliant telephones. Audio must be routed to the headset and from the microphone of the device based on the off-hook status of the phone and the PTT button of the headset.
- 14) The accessory adaptor must contain two relays for miscellaneous purpose for control by attached GUI based console.
- 15) The accessory adaptor must contain two diode blocked inputs to be monitored by attached GUI based console.
- 16) The accessory adaptor must support a footswitch input. Both PTT and Monitor functions must be supported.
- 17) The accessory adaptor must switch automatically between desk microphone and headset input when headset is connected for externally generated PTT operation.
- 18) The accessory adaptor must support connection to analog recording solutions, provide a balanced 600 ohm level adjustable output that has summed Selected, Unselected and microphone audio's.
- 19) The accessory adaptor must support connection of NENA audio interfaces (per NENA Technical Document NENA-04-001). When connected and off-hook, all microphone/headset audio must be routed to the phone (NENA port), except during PTT operations when selected radio line(s) must be routed microphone audio.

VoIP Audio Gateway Adaptor Specifications

The Gateway adaptor must support the following basic features:

- 1) The gateway adaptor must provide a means to connect up to at least two independent audio sources for control over an Ethernet based network utilizing VoIP technology.
- 2) The gateway adaptor must support primary and secondary NIC ports for backup network connections. The feature shall support auto role-over using Ping commands for connectivity testing. If primary port loses connection device auto switches to secondary.
- 3) The gateway adaptor must support multiple audio compression Vocoders.
- 4) The gateway adaptors Bandwidth requirement for one simplex audio stream via VoIP, must be configurable between 34kbit and 82kbit on a standard Ethernet network.
- 5) The gateway adaptor must support both Unicast and Multicast packet transport.
- 6) The gateway adaptor must support multicast based VoIP communications on the network and utilize at least IGMP v3.
- 7) The gateway adaptor must support Quality of Service (QOS) functions.
- 8) The gateway adaptor must overcome network latency and packet loss; the use of jitter/packet buffers is an acceptable means to overcome this issue.
- 9) The gateway adaptor must have a menu driven front panel LCD display allowing programmability and adjustability of settings.
- 10) The gateway adaptor must support auto configuration of jumpers and levels based on line type operation and serial controlled radio selected. Physical or solder jumpers are not allowed.
- 11) The gateway adaptor must be powered by +12 Vdc and be Hot-Swappable.
- 12) The gateway adaptor dimensions must be no larger than 1.625" H x 11.5" D x 8.5" W.
- 13) All functions of the gateway adaptor must be programmable via a web browser or manufactures system management application from any location on the network.
- 14) The gateway adaptor must be able to clone its configuration from one device too another or too a computer on the network for archival purposes.
- 15) The gateway adaptor must be able to locally store up to 5 per-saved configurations with the ability to restore or delete using the web browser interface.
- 16) The gateway adaptor must be able to load per-saved configurations from a networked PC using the web browser interface.

- 17) The gateway adaptor must be able to update firmware from a networked PC using the web browser interface.
- 18) The radio adaptor must support Admin and User login; user will have limited access to configuration pages.
- 19) The gateway adaptor must support both COR and VOX based operation.
- 20) The gateway adaptor must support software based level controls for a wide range of audio In and Out of the unit.
- 21) The gateway adaptor must support a TX delay, RX delay, and Squelch tail delay for the purposes of delaying transmit audio, receive audio (to eliminate first syllable loss when using VOX), and for muting the squelch tail of some radios when they key down from transmission.
- 22) The gateway adaptor must provide for a locally controlled crosspatch between the two attached radios. This feature must support a selectable Function Tone enable and disable feature. This feature shall support bidirectional or selectable routing between ports 1 and 2.
- 23) The gateway adaptor must support the direct decode of MDC1200 or Kenwood FleetSync OTA signaling protocols for the purposes of supplying ANI and emergency status back to the console. Either or both must be enabled via software setup.
- 24) The gateway adaptor must support the direct encode of MDC1200 or Kenwood FleetSync OTA signaling protocols for the purposes of supplying FSK tones to any make/model radio. Either or both must be enabled via software setup.

The Gateway adaptor must support the following Modes of operation:

- 1) Local radio control - operation must support direct connection via balanced or unbalanced audio pairs. PTT and Monitor function must be supported via dry contact relay closure. Channel steering of at least 1000 channels must be supported via BCD or serial control. CTCSS tone generation must be supported; selectable tones and adjustable level are required.
 - a. Must support the following radios via serial control:
 - i. BK Technologies KNG Series
 - ii. EF Johnson RS-5300, ES and VM -x00 and -x000 Series
 - iii. Hytera MT-680 (TETRA)
 - iv. ICOM IDAS IC-506x/606x Series
 - v. Kenwood TK-x80, -x90, -x150, -x180, -5x10, -5x30, and NX-700/800/3x20/5000 Series.
 - vi. Motorola MOTOTRBO XPR and Falcon Series (iDEN)
 - vii. PowerTrunk MDT-400 (TETRA)
 - viii. Sepura SRG Series (TETRA)
 - ix. Tait TM-91/93/94xx series mobile radios.
- 2) Tone generation mode - operation must support standard 2-Wire and 4-Wire connectivity with TX monitor. In addition, levels up to +10dbm must be supported. Parallel connection to existing tone control lines must be supported with seamless integration of the VoIP based consoles in parallel with the tone control consoles. The tone frequencies must be programmable to multiple common PTT and function tone frequencies and support dual function tones.
- 3) Console Decode – operation must support decoding industry standard tones from existing legacy consoles, convert it to Ethernet traffic and send it to another gateway adaptor that regenerates the industry standard tones for control of existing remote tone and IP adaptors. This mode must also support hardware based crossmute and supervisory features from legacy tone console system.

Network Relay and Logic device Specification

The network relay and logic device must support the following basic functions:

- 1) The network relay and logic device must be a LAN/WAN connected unit that support ten (10) individual relay outputs and ten (10) individual logic inputs.
- 2) The network relay and logic device must support 10/100 Mbit per second Ethernet connections.
- 3) The network relay and logic device must support multicast based VoIP communications on the network and utilize at least IGMP v2.
- 4) The network relay and logic device must be powered by +12Vdc.
- 5) The network relay and logic device must be 19 inch rack mountable and 1U high.
- 6) The network relay and logic device must have front panel indications for each input and output state.
- 7) The network relay and logic device connections to inputs and outputs must be via RJ45. 10 total RJ45's must be available for this purpose on the rear of the unit.
- 8) The network relay and logic device must support reliable TCP control of its output relays.
- 9) The network relay and logic device outputs will grant full wiring access to both sets of legs of a DPDT relay. This includes common, normally open, and normally closed, for a total of 6 pins.
- 10) The network relay and logic device relays must support rated at 125Vac at 1 Amp.
- 11) The network relay and logic device inputs must be diode blocked to support input voltages up to 18Vdc.
- 12) The network relay and logic device must support programmable de-bounce setting per input.
- 13) The network relay and logic device must support up to 10 channels of echo packet functionality.
- 14) The network relay and logic device must support initial configuration setup of the unit via a serial port.
- 15) All functions of the gateway adaptor must be programmable via a web browser or manufactures system management application from any location on the network.
- 16) The network relay and logic device must be able to clone its configuration from one device to another or to a computer on the network for archival purposes.

Hardware/GUI Based Dispatch Console – IP-30xx Units

The Dispatch console must support the following hardware specifications:

- 1) The console must be a single desktop unit supporting the ability to lay flat, tilt using incline mechanism or mount using standard VESA mounting.
- 2) The console must be powered by +12 Vdc, a supplied 110/220Vac to 12 Vdc switching power supply is acceptable.
- 3) The console must include a LCD and Touch screen 21 inches size.
- 4) The console must support up to 200 lines of audio sources with unlimited number of consoles.
- 5) The console must operate on Microsoft WIN10 IoT 64 Bit.
- 6) The console must include a master PTT button, gooseneck and handset with PTT function.
- 7) The console must include a Footswitch Input function.
- 8) The console must include two integrated speakers (Select and Unselect) with hardware volume control.
- 9) The console must include 16 programmable hardware keys allowing one touch operation of programmed functions. Additional groups of 32 keys can be added as option.
- 10) The console must support the following certifications and approvals EN 55032:2012, EN-55024:2010, EN-61000-3-2:2014, EN-61000-3-3:2013, FCC Part 15, Canada's ICES-003 Issue 6, RoHS, REACH and N2580

The Dispatch System must support the following radio interfaces:

- 1) Local – Direct connection to fixed radio resources, supporting TX/RX audio paths, Channel change (Logic, BCD or Serial), PTT and COR logics.
- 2) Tone – Generation of industry standard PTT tones on 2 or 4 wire circuits.

- 3) E&M – 6 wire interfaces, balanced TX/RX audios, PTT and COR Logics.
- 4) Motorola MOTOTRBO – Analog, Digital, Capacity Plus, Linked Capacity Plus and Connect Plus.
- 5) Motorola WAVE7000 – Using Sonim XP8 LTE handheld.
- 6) P25 AFSI – Support Analog Fixed Station Interface, using either EF Johnson, Kenwood or Tait mobile radios.
- 7) NXDN – Using either NEXEDGE or IDAS mobile radios.
- 8) iDEN – Motorola Harmony systems.
- 9) TETRA – Support Sepura, Hytera or PowerTrunk mobile radio interfaces.
- 10) Kenwood NEXEDGE Direct IP Interface for both Trunking and Conventional systems, allowing up to 10 consoles to be connected to each site and 100 total.
- 11) DMR-AIS Direct IP Interface to radio systems using the AIS standard employing AMBE vocoder.
- 12) DMR – Using either Hytera, Kenwood or Tait mobile radios.
- 13) P25 CSSI – Support the TIA-102 BACA-2 Console Subsystem Interface (CSSI) standard, connecting console to the P25 Trunking system.
- 14) P25 DFSI - Support the TIA-102 BAHA Fixed Station Interface (FSI) standard, allowing up to 25 consoles to be connected to a single DFSI endpoint.

The Hardware based dispatch console must support the following basic functions:

- 1) The console must function on a standalone appliance with its only connection for radio control being IP network based.
- 2) The console must support both local and remote programming.
- 3) The console must support both Unicast and Multicast packet transport.
- 4) The console must support multicast based VoIP communications on the network and utilize at least IGMP v3.
- 5) The console must support multiple audio compression Vocoders and be selectable on a line by line bases.
- 6) The console must overcome network latency and packet loss; the use of jitter/packet buffers is an acceptable means to overcome this issue.
- 7) The console must be completely configurable in terms of its look and feel. Required user definable elements must include: Button color in up and down positions, text color in up and down positions, text in up and down positions, icon in up and down position, button border color, and button font typeface and size.
- 8) The console must be able to create logical groupings of buttons to be hidden in windows that can be accessed as required by the dispatcher. The ability to open these button windows on activity must be supported.
- 9) The console must preclude a Dispatcher from changing screen designs.

The Hardware based dispatch console must support the following basic features:

- 1) The console must support at the Per-Line level: Select, channel change, volume control, Mute, Call Recording and Instant PTT (Push to Talk) functions.
- 2) The console must support Group Select, Pre-programmed Group and TX ALL functions.
- 3) The console must support Master Select, UnSelected and NENA Phone volume controls with selectable gain and position (Horizontal or Vertical).
- 4) The console must support Parallel console TX Monitor, Cross-mute and Cross-patch functions.
- 5) The console must support Supervisory line takeover function, password support must be required.
- 6) The console must support Channel Change functions using either individual buttons or Up/Down arrow methods.
- 7) The console must support Intercom function between other positions or remote tower sites.
- 8) The console must support Monitor (CTCSS), open Squelch functions when using either an on-screen button or external input logic.
- 9) The console must support VU Meter Indicators at both the Per-Line and Main level.

- 10) The console must support Mute of individual, All, and pre-programmed groups of lines.
- 11) The console must support a Master PTT function, pressing will key and route microphone audio to selected line(s). Using keyboard spacebar, foot switch or PTT button on screen are acceptable methods to accomplish feature.
- 12) The console must support a Last Call PTT function, pressing this button will transmit on the last active channel.
- 13) The console must support a Call Queue window for incoming radio calls.
- 14) The console must have the ability to execute (run) other applications via a button press.
- 15) The console must support Scan control on radios supporting scan. The console must also update its display based on the channel upon which the radios stops scanning to play receive audio. **Note:** Function requires radio with scan function and advanced interface to retrieve channel information during Scan stop.
- 16) The console must support Coded/Clear (Encryption) control on radios supporting this feature. **Note:** Function requires radio with Encryption function and advanced interface to operate.
- 17) The console must support an RX Block feature, used to mute other geography separated lines with same RF frequency from feeding back into console during PTT operation. An RX Block Off delay timer must be supported for network latency.
- 18) The console must support Primary and backup line options for redundant radio connections. Console must be able to display which line is currently active and allow for manual or automatic switching of radio control.
- 19) The console must support remote relay closure and input monitoring via network.
- 20) The console must support the display of web pages with a variable refresh interval.
- 21) The console must display ANI for Kenwood Fleet Sync, Motorola MDC1200, DTMF, iDEN, P25, MOTOTRBO, DMR, TETRA, NXDN and IDAS.
- 22) The console must support translating ANI information into Alias names for display on Select buttons and in call logs, it should have a minimum 6000 unit database.

The Hardware based dispatch console must support the following Audio routing features:

- 1) The console must support the ability to operate in Full Duplex.
- 2) The console must support the ability to sum Selected and Unselected audio to the handset, Mute both Unselect and Select RX audio during PTT operation.

The Hardware based dispatch console must support the following Call Queue features:

- 1) The console must support placing incoming radio calls into a Call Queue window based on the following call types: Call Alert, Group Call, Private or Selective call and Group Status type calls. These calls can come from a variety of signaling types to include: MDC, Fleet Sync, MOTOTRBO, NEXEDGE Direct IP, 5/6 Tone, DTMF and serial controlled control stations.
- 2) The console system shall support that any call status changed on one console will be updated on parallel consoles. These changes will include: Processing and Complete.
- 3) The Call Queue window must have the ability to select and show the following information: Date, Time, Frequency, Console ID, Line Name, Status and ANI information fields.
- 4) The Call Queue window must have the ability to sort entries by Time or Status ID.
- 5) The Call Queue Window shall support the ability for dispatcher to move and resize.

The Hardware based dispatch console must support the following Telephone features:

- 1) The console must support telephone resources accessible on the network. Connection to a SIP Server must be supported.
- 2) The console must support the following Telephone features: Call, Answer, Call Waiting, Call Transfer (Blind or Consultation), Call Forwarding, 3-Way Conference Do Not Disturb, Flash-hook, Hold, Mute, Autodial and Volume control.
- 3) The console must support a store and forward function for Telephone dialing.

- 4) The console must support a phone book directory with up to 5000 users with 6 sub-directory phone books.
- 5) The console must support selectable ring tones per line and the ability to program the ring tone to play on a specific speaker.

The Hardware based dispatch console must support the following Group and Crosspatch features:

- 1) The console must support concurrent Crosspatches.
- 2) The console must support Pre-programmed Crosspatches – The ability to create a pre-determined crosspatch with the press of one button.
- 3) The console must support the following manual Crosspatch operations: Setup, Teardown, PTT and Block.
- 4) The console must support Radio to Radio and Radio to Phone Crosspatches
- 5) The console must support dispatcher selected Simulcast groups.
- 6) The console must support Pre-programmed groupings (Simul-selection) of lines and frequency that are activated with a single button push.
- 7) The console must support programmable groupings (Simul-selection) of lines and frequency that can be programmed and activated with a single button push by the dispatcher.

The Hardware based dispatch console must support the following Emergency Call features:

- 1) The console must support Emergency functions including audible and visual alarms of a supported ANI emergency call from the field. Inter-console Acknowledge and Resolve features must be supported. Supported formats are; P25, DMR, MOTOTRBO, NXDN, MDC1200, FleetSync, iDEN, TETRA, DTMF and 5/6 Tone.
- 2) The console must support Active Emergency Call and Emergency Call History windows.

The Hardware based dispatch console must support the following IRR and Call History features:

- 1) The console must support Instant Recall Recorder (IRR) with a minimum of 10 minutes of receive audio played on any installed speaker. Audio must be accessible on a call by call basis from the call history screen, or by pressing a button to play the last X seconds of audio, where X is between 1 and 600 seconds.
- 2) The console must support a Global Call History window and must show the following information: Date, Time, Call Duration, Frequency, Talk-Group, Comments, Status and ANI information fields. The feature to playback any audio stored for the last 10 minutes of calls must be supported.
- 3) The console must support Per-Line Call History windows; these must have the ability to show the following information: Date, Time, Call Duration, Frequency, Talk-Group, Comments, Status and ANI information fields.
- 4) The console must support, Per-Line Call Playback for all lines in the console. Each line will support 60 minutes of RX and TX audio recording with the ability to Pin and Comment the audio file. External storage would be required.

The Hardware based dispatch console must support the following Over the Air MSK ANI Decode and Encode features:

- 1) The console must support the following ANI formats: MDC1200 and FleetSync.
- 2) The console must display ANI values as either the number itself or by an alias table lookup. The information must be programmable to remain on the line select button until the next call is received.
- 3) The console must support encoding of Motorola MDC1200 messages; Messages must include; ANI, Status, Stun, Revive, Selective Call, Pre-Canned Text, Remote Monitor, Emergency Receive and Acknowledge.
- 4) The console must support encoding Kenwood FleetSync messages; Messages must include; ANI, Emergency Receive, Status, Text, Stun, Revive and Selective Call.

The Hardware based dispatch console must support the following P25 features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The Hardware based dispatch console must support the following DMR features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The Hardware based dispatch console must support the following NXDN features:

- 1) Channel/Talk-group Change, ANI Decode, Emergency Decode, Individual/Private or Group Calls, Status Messaging, Status Request, Radio Check, Monitor, Scan, Remote Monitor, Radio Enable/Disable, GPS and Text Messaging. **Note:** Supported features can vary based on selected radio, please see release notes.

The Hardware based dispatch console must support the following Motorola iDEN features:

- 1) iDEN Radio Features – operation allows connection to an iDEN Network, such as Southern LINC, Motorola Harmony, etc. Operating features supported are Direct Connect, Group Call, Emergency Group Call and Call Alert. **Note:** Additional equipment for connectivity to iDEN device will be allowed.

The Hardware based dispatch console must support the following TETRA features:

- 1) TETRA Radio Features – operation supports an interface to a TETRA Digital Trunked system using the Peripheral Equipment Interface (PEI). This interface allows dispatch access to TETRA radio assets. Supported operating modes are Direct Mode Group Call (DMO), Trunked Group Call, Trunked Half Duplex Private Call, Trunked User Defined Scan List (UDSL) and Trunked Full Duplex Private Call. **Note:** Supported features can vary based on selected radio, please see release notes.

The Hardware based dispatch console must support the following Paging, Alert Tone and Annunciation (.wav) features:

- 1) The console must support the following paging formats: DTMF, Knox, 2-Tone 100 or 1000, Quickcall II, 5/6 Tone and manually entered tones must be supported.
- 2) The console must support the following paging functions: One Touch, Page Stack, Send and Cancel.
- 3) The console must support playing Annunciation files to selected or pre-programmed lines when a button is pressed or directed by Input logic.
- 4) The console must support the ability to close programmed relays when a page or Annunciation button is pressed.
- 5) The console must support Alert tones with the following audio formats: Constant tone, Pulsed tone, and Hi-Lo warble. Timing and frequencies must be programmable.
- 6) The console must support Per-line Marker Tone generation; timing and frequencies must be programmable.

The Hardware based dispatch console must support compatibility with the TIA-102 BAHA Fixed Station Interface (FSI) standard or P25 DFSI functionally:

- 1) The console system must support allowing up to 25 consoles to be connected to a single DFSI endpoint.

- 2) The console system must support allowing for console positions to be configured to work as Standalone, Server, Client or as a Back-Up Server/Client.
- 3) The console system must support auto-switching to a backup DFSI endpoint if connections to the primary fail.
- 4) The console must support the ability to select transmitter and receiver channel, including NAC code and Talkgroup.
- 5) The console must support the ability to Display selected channel name in alpha-numeric format.
- 6) The console must support the ability to Display active received channel(s).
- 7) The console must support the ability to Display received mode (digital or analog) and signal status (clear or encrypted).
- 8) The console must support the ability to Display received NAC code in hexadecimal format and alpha-numeric Alias.
- 9) The console must support the ability to Display received Talkgroup and Unit ID in decimal format, and alpha-numeric Alias.
- 10) The console must support the ability to place and receive unit-to-unit individual/private calls.
- 11) The console must support the ability to do both Multicast and Unicast IP.
- 12) The console must support the ability to perform text messaging.
- 13) The console must support the ability to support Busy Channel lockout on parallel consoles, with indication.
- 14) The console must support the ability to perform unit paging/call alert with acknowledgement.
- 15) The console must support the ability to receive and transmit analog and digital DTMF.
- 16) The console must support emergency call status display and alarm with display retention, showing unit ID/Alias of unit sending emergency signal.
- 17) The console must support Channel patching without double Vocoding.
- 18) The console must support Unique Unit ID and IP address for each console.
- 19) The console must support Controllable receive audio level with muting.
- 20) The console must support the ability to select a specific transmitter on a voting system.
- 21) The console must support Selective squelch using NAC and Talkgroup.
- 22) The console shall have the capability to select receive and transmit talk groups. This provides the console operator the ability to monitor only the desired talk groups on a shared network.

The Hardware based dispatch console must support compatibility with the TIA-102 BACA-2 Console Subsystem Interface (CSSI) standard or P25 CSSI functionally:

- 1) The console system must support 1 console to be connected to a single P25 trunking system.
- 2) The console must support the ability to monitor and talk on up to 24 talk-paths.
- 3) The console must support the ability to select transmitter and receiver channel, including NAC code and Talkgroup.
- 4) The console must support the ability to Display selected channel name in alpha-numeric format.
- 5) The console must support the ability to Display active received channel(s).
- 6) The console must support the ability to Display signal status (clear or encrypted).
- 7) The console must support the ability to Display received Talkgroup and Unit ID in decimal format, and alpha-numeric Alias.
- 8) The console must support the ability to place and receive unit-to-unit individual/private calls.
- 9) The console must support the ability to perform short format text messaging.
- 10) The console must support the ability to perform unit paging/call alert with acknowledgement.
- 11) The console must support emergency call status display and alarm with display retention, showing unit ID/Alias of unit sending emergency signal.
- 12) The console must support Channel patching without double Vocoding.
- 13) The console must support Controllable receive audio level with muting.
- 14) The console shall have the capability to select receive and transmit talk groups. This provides the console operator the ability to monitor only the desired talk groups on a shared network.

The Hardware based dispatch console must support encryption for P25 DFSI and P25 CSSI as an option:

- 1) The feature should support 256-bit AES and DES algorithm with ON/OFF capabilities.
- 2) The feature should be FIPS 140-2 Compliant
- 3) The feature should support 100 Keys and 50 Profiles
- 4) The feature should load using either Motorola and Tait encryption key loaders (Motorola KVL 3000, Motorola KVL 4000 and Tait Key Fill Device)

The Hardware based dispatch console must support Kenwood NEXEDGE Trunking features using a Direct IP interface:

- 1) The console system must support allowing up to 10 consoles to be connected to each site and up to ten Sites for a maximum of 100 total.
- 2) The features should include: Narrow (12.5Khz) or Very Narrow (6.25Khz) Channel Spacing. Support up to 24 Talk Paths per Console. Selectable Talk Group, Broadcast, Group and Unit Calls. Emergency Call Decode with Acknowledgement Capabilities, Radio Remote Monitor with Supervisor Password, Over-The-Air-Aliasing, Radio Status Decode and Encode, Radio Status Request, Radio Remote TG Re-Grouping, Radio Stun and Revive, GPS Decode with IP Interface, Text Messaging and Alert Call.

The Hardware based dispatch console must support Kenwood NEXEDGE Conventional features using a Direct IP interface:

- 1) The console system must support allowing up to 10 consoles to be connected to each site and up to ten Sites for a maximum of 100 total.
- 2) The console shall support Conventional with and without NXDN signaling while also supporting RAN coding.
- 3) The features should include: Narrow (12.5Khz) or Very Narrow (6.25Khz) Channel Spacing. Support up to 24 Talk Paths per Console. Selectable Talk Group, Group and Unit Calls. Emergency Call Decode with Acknowledgement Capabilities, Radio Remote Monitor with Supervisor Password, Over-The-Air-Aliasing, Radio Status Decode and Encode, Radio Status Request, Radio Stun and Revive, GPS Decode with IP Interface, and Alert Call.

The Hardware based dispatch console must support Kenwood NEXEDGE 15bit encryption for Direct IP interfaces:

- 1) The features should support any of 16 pre-programmed keys with Selectable ON/OFF capabilities.

The Hardware based dispatch console must support the following Motorola MOTOTRBO features:

- 1) The console system must support allowing up to 10 consoles to be connected to each physical control point radio.
- 2) The console must support the following MOTOTRBO features for Digital, Capacity Plus and Link Capacity Plus systems: Group and Private Calls, ANI, Channel change, GPS, Radio Disable / Enable, Status Messaging, Text Messaging – Precanned and Short, Remote Monitor, Emergency Receive and Acknowledgement.
- 3) The console must support the following MOTOTRBO features for Connect Plus Systems: Group and Private Calls, ANI, Channel change, Radio Disable / Enable, Status Messaging, Remote Monitor, Emergency Receive and Acknowledgement.

Two Line VoIP Console Specification

The two line VoIP console must have the following basic features:

- 1) The console must support two lines of radio control via 10/100 Base T/Tx Ethernet connection utilizing VoIP protocols.
- 2) The console bandwidth requirement for one audio stream, via VoIP must not exceed 50kbit on a standard Ethernet network.
- 3) The console must support multicast based VoIP communications on the network and utilize at least IGMP v2.
- 4) The console must support Quality of Service (QOS) functions.
- 5) The console must overcome network latency and packet loss; the use of jitter/packet buffers is an acceptable means to overcome this issue.
- 6) The console must be powered by +12 Vdc, a supplied 110/220Vac to 12 Vdc switching power supply is acceptable.
- 7) The console must be a desktop unit and support a wall mounting option.
- 8) The console must have a 2x20 character vacuum florescent display (VFD).
- 9) The console must contain a master speaker for select and unselect audio. The speaker must have a master volume control, and the output must be a minimum of 800 mwatts.
- 10) The console must support operation with handset or panel microphone, an option to support a desk microphone is a must.
- 11) The console must support control of radio lines as well as function for telephone use on the network.
- 12) The console must support a telephone dialing directory.
- 13) The console must have a single internal speaker with summed select and unselect audio. Selected line audio is routed to earpiece when handset is taken off-hook.
- 14) Each radio line must support separate Select, Mute and Release buttons. Buttons must change color based on button setting.
- 15) The console must support Per Line volume controls, including separate volumes for select, unselect and earpiece audio.
- 16) The console must support incoming DTMF select call with unique codes for each line.
- 17) The console must support channel up down control as well as direct entry for up to four frequency channel. In addition, a channel button will allow for direct entry of any of up to 100 channels.
- 18) The console must support crosspatch of its two lines, including crosspatch to a mapped active phone line.
- 19) The console must support Instant Recall Recorder (IRR) with a minimum of last 15 seconds of both select and unselect audio.
- 20) The console must support a full 16 digit DTMF keypad.
- 21) The console must support an AUX audio and PTT input.
- 22) The console must provide 600 Ohm balanced outputs for connection of an analog recording solution.
- 23) The console must support the follow paging formats; Quickcall II, Manual tone entry and DTMF formats.
- 24) The console must support stacked pages of any combination of supported pages.
- 25) The console must support Scan control on radios supporting scan. The console must also update its display based on the channel upon which the radios stops scanning to play receive audio.
Note: Function requires radio with scan function and advanced interface to retrieve channel information during Scan stop.
- 26) The console must support intercom on the selected line(s).
- 27) The console must display ANI for Kenwood Fleetsync, Motorola MDC1200, DTMF, iDEN, P25, TETRA, NXDN and IDAS.
- 28) The console must support the display of an alias based on the received ANI number.

- 29) The console must support initial IP setup via serial port, or direct entry through the front panel keypad.
- 30) All functions of the gateway adaptor must be programmable via a web browser or manufactures system management application from any location on the network.
- 31) The console must support configuration using any standard web browser, this must include IP information, paging tables, and line characteristics.
- 32) The console must be able to clone its configuration from one device to another or to a computer on the network for archival purposes.