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# **AFRRCS Agency Handbook**

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**Section:** Purchasing

## **Contents**

1. Permitted Radio List V13
2. Subscriber Units Requirements and Testing
3. Agency Voice Logging Requirements and Testing
4. Agency Console Requirements and Testing

**HANDBOOK REVISION HISTORY**

| <b>Version</b> | <b>Date</b>     | <b>Modified By</b> | <b>Section Revised</b>         |
|----------------|-----------------|--------------------|--------------------------------|
| 0.1            | July 22, 2015   | BS                 | First Draft                    |
| 1.0            | January 5, 2016 | BS                 | First version, removed drafts. |
| 2.0            | July 09 2018    | CB                 | Permitted Radio List (Updated) |

# **AFRRCS Policies and Procedures**

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## **Section: Permitted Radio List**

**DOCUMENT REVISION HISTORY**

| <b>Version</b> | <b>Date</b>       | <b>Modified By</b> | <b>Section, Page (s), Text Revised</b>   |
|----------------|-------------------|--------------------|--|
| 0.1            | October 2, 2012   | BS                 | Initial Draft  |
| 0.2            | October 4, 2012   | CB                 | Revision of Draft Document   |
| 0.3            | February 14, 2013 | BS                 | Add contacts & firmware version  |
| 0.4            | October 4, 2013   | BS                 | Add EF Johnson radios, update user   |
| 0.5            | March 7, 2014     | BS                 | Add RELM KNG-M800, P800 radios   |
| 0.6            | April 7, 2014     | BS                 | Add Harris XG25  |
| 0.7            | October 14, 2014  | BS                 | Add process for accessing Standing Offer   |
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| 0.9            | April 7, 2015     | BS                 | Update Harris contacts   |
| 1.0            | April 22, 2015    | BS                 | Update EF Johnson model information  |
| 1.1            | May 20, 2015      | BS                 | Update EF Johnson contacts & products, TAIT  |
| 1.2            | July 24, 2015     | BS                 | Update Harris, Motorola contacts   |
| 1.3            | October 1, 2015   | BS                 | Add Motorola APX1500 Mobile, APX1000 portable, APX4500 mobile. APX3000 undercover, APX8000 portable tri-band |
| 1.4            | November 9, 2015  | BS                 | Add Harris XG15P, update firmware version requirements   |
| 1.5            | February 25, 2016 | BS                 | Add Kenwood NX5200, 5400, 5700, Update 5900 series Update Kenwood contact information                        |
| 2.0            | March 31, 2016    | KC                 | Added radio programming template requests to radio   |
| 3.0            | May 19, 2016      | BS                 | Add Harris XL-200, Aeronautical Category, TAIT 9400 Series   |
| 4.0            | June 24, 2016     | KC                 | Updated the standing offer radio pricing contact.<br>Delete Kenwood TK series                                |

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|      |                    |    |   |
|------|--------------------|----|---|
| 5.0  | August 15, 2016    | KC | Add RELM KNG2 models.<br>Update Harris contacts   |
| 6.0  | September 28, 2016 | BS | Field test advisory for EFJ radios<br>Updated standing offer contact  |
| 7.0  | December 20, 2016  | KC | Removed field advisory for the EFJ radios and updated the required firmware.  |
| 8.0  | January 25, 2017   | KC | Added permitted pager category.   |
| 9.0  | March 21, 2017     | KC | Updated the email address for Unication   |
| 10.0 | September 20, 2017 | AS | Added Motorola APX 8500<br>Added Motorola APX 2000<br>Added JVCKenwood radios<br>Updated aeronautical permitted radio licensing requirement |
| 11.0 | October 2017       | AS | Updated Harris and Tait contact info;<br>Remoted Tait TP9100 and TM9100   |
| 12.0 | January 2 2018     | CB | Removed Appendix 6 upon expiry of GoA Standing Offer  |
| 13.0 | June 2018          | AS | Added ISED license number; Updated previous testing result format; Added 2018Testing section;   |

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## 1. Permitted Radio List Background

The Alberta First Responders Radio Communications System (AFRRCS) is a province wide open standards two-way radio network for public safety first responder agencies, including police, fire and ambulance. AFRRCS provides these agencies with a common radio network to communicate with one another, and improve the coordination between different agencies.

Harris Canada Systems Inc. (Harris) was selected to design and build the AFRRCS P25 infrastructure. A prime objective was to create a system that allow first responder agencies to use other manufacturer's P25 compliant devices on the network. AFRRCS performs subscriber equipment testing to confirm these equipment would operate seamlessly on the AFRRCS network while meeting the basic communication and safety requirements of first responders.

AFRRCS team developed a Subscriber Radio Test Procedure requirement document back in 2012. The previous version of the testing document included basic P25 features. All radios tested and approved based on this version of testing requirements are included in Section 3.

AFRRCS team developed a newer version of Permitted Radio Testing Procedure document in 2018. In addition to basic P25 trunking features, almost all manufacturer-advertised radio features will be tested. AFRRCS will include testing results to provide detailed information on what features are available on the AFRRCS network. All radios tested in or after 2018 are listed in **Section 4**.

All end user radios included in Section 3 of the Permitted Radio list are still valid. All new tests will follow the new 'Permitted Radio Testing Procedure' document.

## 2. Testing Process

Testing radios must be tested in one of the accredited P25 Compliance Assessment Program (P25 CAP) laboratories. Vendors will provide summary test reports from recognized laboratories along with declaration of compliance. Radios must have ISED ID.

Manufacturers will be invited to test in AFRRCS St. Albert lab after sending a testing request to AFRRCS. Testing will be in the lab and also in the AFRRCS operation environment. Reprogramming is expected during testing. The successful manufacturers and their products are contained in the Permitted Radio list in section 4 of this document.

All products on the Permitted List will be subject to additional testing as required to ensure ongoing functionality through version and system changes. Models on the Permitted Radio List will be tested as appropriate against the version or system changes to ensure the previously identified functionality and performance is consistent in the new environment. Any manufacturer whose model does not perform consistently through the changes will be requested to remedy the issue within the new environment. Any unit with specific isolated performance issues within the new environment will remain on the Permitted List but will be flagged with a notation that it did not operate reliability in the specified environment. New models will be accepted for testing on an ongoing basis.

The Permitted List will be a "living document" that reflects the addition of new equipment.



### 3. Permitted Radio List (Tested Before 2018)

| Manufacturer  | Contacts   | Model                                | Firmware       | ISED Certification Number |
|---------------|--|--------------------------------------|----------------|---------------------------|
| Harris & Tait | <p><b>1. Rick Wolochatiuk</b><br/>Regional Sales Manager, Harris Canada Systems, Inc.<br/>Tel: (716) 266-5611<br/><a href="mailto:wwolocha@harris.com">wwolocha@harris.com</a></p> <p><b>2. Brian Phillips</b><br/>Account Manager, Harris Canada Systems, Inc.<br/>Tel: (403) 831-2434<br/><a href="mailto:bphill08@harris.com">bphill08@harris.com</a></p> <p><b>3. Huntley R. Quinn</b><br/>Sales Representative, Harris Canada Systems, Inc.<br/>Tel: (587) 216-8841<br/><a href="mailto:Huntley.quinn@harris.com">Huntley.quinn@harris.com</a></p> <p><b>4. Pierre Langevin</b><br/>Technical Contact, Harris Canada Systems, Inc.<br/>Tel: (418) 628-8543<br/><a href="mailto:plangevi@harris.com">plangevi@harris.com</a></p> | XG100,                               | R5C05 or later | 122D-XG100P00             |
|               |  | XM100,                               | R5C05 or later | 122D-XG100M00             |
|               |  | XG25,                                | R5C05 or later | 3636B-0140                |
|               |  | XG75,                                | R5C05 or later | 3636B-0074                |
|               |  | P7300 series,                        | R5C05 or later | 3636B-0074                |
|               |  | M7300 series,                        | R5C05 or later | 3636B-0132                |
|               |  | XG15P,                               | R5C05 or later | 3636B-0134                |
|               |  | XL200,                               | R5C05 or later | 3636B-0145                |
|               |  |                                      |                |                           |
|               |  |                                      |                |                           |
|               |  |                                      |                |                           |
|               |  | Tait TP9400 Series                   | V9.27.0.2      | 737A-TPDK5A               |
|               |  | Tait TM9400 Series                   | V2.06          | 737A-TMBK5B               |
|               |  |                                      |                |                           |
| JVC-KENWOOD   | <p><b>Greg Cust</b><br/>Regional Sales<br/>Phone: 780-818-8116<br/><a href="mailto:gcust@ca.jvckenwood.com">Email: gcust@ca.jvckenwood.com</a></p>   | * Viking VP900 700/800/VHF Multiband | 8.16.13        | 933B 242570               |
|               |  | * Viking VP600 700/800 models        | 8.16.13        | 933B-2425770              |
|               |  | VM600 (700/800)                      | 8.16.13        | 933B-2425M70              |
|               |  | VP5230 (VHF)                         | 8.16.13        | 282F-431400               |
|               |  | VP5430 (700/800)                     | 8.8.21         | 282D-442000               |

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|          |   |                        |                            |               |
|----------|---|------------------------|----------------------------|---------------|
|          | <p><b>Ron Rickward</b></p> <p>Mgr. Engineering Technical</p> <p>Services</p> <p>Phone: 905-908-0199</p> <p>Email:</p> <p><a href="mailto:rrickward@ca.jyckenwood.com">rrickward@ca.jyckenwood.com</a></p> | VM900<br>(700/800/VHF) | 8.16.13                    | 933B-2425M80  |
|          |   | VP6430(700/800)        | 8.18.21                    | 282D-442000   |
|          |   | VM5930<br>(700/800)    | 8.18.21                    | 282F-478500   |
|          |   |                        |                            |               |
|          |   | NX5200<br>portable,    | firmware<br>version        | 282F-431400   |
|          |   | NX5700 mobile,         | 1.65.00<br>checksum        | 282F-471100   |
|          |   | NX5400<br>portable,    | D77D                       | 282D-442000   |
|          |   | NX5900 mobile          |                            | 282F-478500   |
|          |   |                        |                            |               |
|          |   |                        |                            |               |
| Motorola | <p><b>Martyn Lutz</b></p> <p>Senior Account Manager</p> <p>(778) 878-5349</p> <p><a href="mailto:martyn.lutz@motorolasolutions.co">martyn.lutz@motorolasolutions.co</a></p>                               | XTS Series             | XTS/XTL:<br>R17.01.02      |               |
|          |   | XTL Series             | XTS/XTL:<br>R17.01.03      |               |
|          |   | APX4000                | APX:<br>R14.00.04          | 109U-89FT3828 |
|          |   | APX6000                | APX:<br>R14.00.04          | 109U-89FT7086 |
|          |   | APX6500,               | APX:<br>R14.00.04          | 109U-92FT5858 |
|          |   | APX7000,               | APX:<br>R14.00.04          | 109U-89FT7036 |
|          |   | APX7500,               | APX:<br>R14.00.04          | 109U-92FT3824 |
|          |   | APX1500,               | APX:<br>R14.00.04          | 109U-92FT7055 |
|          |   | APX1000,               | APX:<br>R14.00.04          | 109U-89FT5861 |
|          |   | APX4500,               | APX:<br>R14.00.04          | 109U-92FT5865 |
|          |   | APX3000,               | APX:<br>R14.00.04          | 109U-89FT5860 |
|          |   | APX8000                | APX:<br>R14.00.04          | 109U-89FT7061 |
|          |   | APX8500                | APX:<br>R14.00.04          | 109U-92FT7089 |
|          |   | APX2000                | APX:<br>R14.00.04          | 109U-89FT7050 |
|          |   | REL                    | <b>Peter Rogell, Sales</b> | KNG P150,     |

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|   |           |                             |                               |
|---|-----------|-----------------------------|-------------------------------|
| <p>321-953-7809 office</p> <p>321-431-6208 cell</p> <p><a href="mailto:progell@relm.com">progell@relm.com</a></p> |           | 1.4.5.0 (or higher)         | 2116A-KNG-P150                |
|   | KNG M150  | release 2.4.5.0 (or higher) | K95KNGM150 / 2116A-KNGM150    |
|   | KNG P800  | 2.1.1 thru 4.2.6            | K95KNGP800C / 2116A-KNGP800C  |
|   | KNG M800  | 2.1.1 thru 4.6              | K95KNGM800C / 2116A-KNG-M800C |
|   | KNG2-P150 | 5.5.4.0C                    | K95KNGP150 / 2116A-KNG-P150   |
|   | KNG2-P800 | 5.5.4.0C                    | K95KNGP800C / 2116A-KNGP800C  |

### 4. Permitted Radio List (Tested in 2018 and After)

Feature item number is cross referenced with the 'Permitted Radio Testing Document'

| P25 TRUNKING (700MHz Band) |          |            |           |               |  |                         |                    |                     |                    |                     |                   |                      |                    |                                    |                           |                                      |                                    |                                     |               |                                  |
|----------------------------|----------|------------|-----------|---------------|--|-------------------------|--------------------|---------------------|--------------------|---------------------|-------------------|----------------------|--------------------|------------------------------------|---------------------------|--------------------------------------|------------------------------------|-------------------------------------|---------------|----------------------------------|
| Manufacturer               | Model    | Date       | Version   | ISED ID       | 5.1 Radio Registration/ Group Affiliation / Out of Range/Site Trunking | 5.2 Group/simple x Call | 5.3 Emergency Call | 5.4 Individual Call | 5.5 Status Message | 5.6 Talk Group Scan | 5.7 Priority SCAN | 5.8 Enhanced Roaming | 5.9 AES Encryption | 5.10 Over-The-Air Re-Keying (OTAR) | 5.11 Radio Authentication | 5.12 Over-The-Air Programming (OTAP) | 5.13 GPS                           | 5.14 Bluetooth Speaker / Microphone | 5.15 WiFi     | 5.16 Telephone Interconnect Call |
| Harris                     | XL-185   | 30-May-18  | R06A23    | 3636B-0148    | Pass   | Pass                    | Pass               | Pass                | Pass               | Pass                | Pass              | Pass                 | Pass               | Pass                               | Pass                      | Pass                                 | Pass                               | Pass                                | Pass          | Pass                             |
| Motorola                   | APX 9000 | 06-June-18 | R17.03.00 | 109U-89FT7096 | pass   | pass                    | pass               | pass                | pass               | pass                | pass              | Pass                 | Not tested         | Not Available                      | Not Tested                | Not Tested                           | Display Pass, Reporting not Tested | Not tested                          | Not Available | pass                             |

| P25 TRUNKING (VHF Band) and P25 Conventional (VHF Band on Mountain Top Repeater) |       |      |         |         |  |                |                    |                     |                    |  |                    |                                   |                          |                                      |          |                                     |           |                                  |  |  |
|--|-------|------|---------|---------|--|----------------|--------------------|---------------------|--------------------|--|--------------------|-----------------------------------|--------------------------|--------------------------------------|----------|-------------------------------------|-----------|----------------------------------|--|--|
| Manufacturer   | Model | Date | Version | ISED ID | 6.1 Radio Registration/ Group Affiliation / Out of Range/Site Trunking | 6.2 Group Call | 6.3 Emergency Call | 6.4 Individual Call | 6.5 Status Message | 6.6 Enhanced Roaming (700MHz-VHF-700MHz) | 6.7 AES Encryption | 6.8 Over-The-Air Re-Keying (OTAR) | 6.9 Radio Authentication | 6.10 Over-The-Air Programming (OTAP) | 6.11 GPS | 6.12 Bluetooth Speaker / Microphone | 6.13 WiFi | 6.14 Telephone Interconnect Call | 6.15 VHF Conventional Mountain Top Sites |  |
|  |       |      |         |         |  |                |                    |                     |                    |  |                    |                                   |                          |                                      |          |                                     |           |                                  |  |  |

| AFRRCS TRUNKING (Multi- Band) |       |      |         |         |  |                |                    |                     |                    |                     |                   |  |                    |                                    |                           |                                      |          |                                     |           |                                  |  |
|-------------------------------|-------|------|---------|---------|--|----------------|--------------------|---------------------|--------------------|---------------------|-------------------|--|--------------------|------------------------------------|---------------------------|--------------------------------------|----------|-------------------------------------|-----------|----------------------------------|--|
| Manufacturer                  | Model | Date | Version | ISED ID | 5.1 Radio Registration/ Group Affiliation / Out of Range/Site Trunking | 5.2 Group Call | 5.3 Emergency Call | 5.4 Individual Call | 5.5 Status Message | 5.6 Talk Group Scan | 5.7 Priority SCAN | 6.6 Enhanced Roaming (700MHz-VHF-700MHz) | 5.9 AES Encryption | 5.10 Over-The-Air Re-Keying (OTAR) | 5.11 Radio Authentication | 5.12 Over-The-Air Programming (OTAP) | 5.13 GPS | 5.14 Bluetooth Speaker / Microphone | 5.15 WiFi | 5.16 Telephone Interconnect Call | 6.15 VHF Conventional Mountain Top Sites |
|                               |       |      |         |         |  |                |                    |                     |                    |                     |                   |  |                    |                                    |                           |                                      |          |                                     |           |                                  |  |

Testing Result: **Pass**  
**Fail**

**Not Available on AFRRCS Network**  
**Not Tested**

## 5. Permitted Pager list

| Manufacturer      | Contacts  | Permitted Pager  | Firmware (specified version or higher) |
|-------------------|---|--|--|
| Unication Co Ltd. | Robert Marchetto, General Cdn. Operations<br>rmarchetto@uniamericas.com,<br><br>604-205-7450, ext. 3301 | Unication G4 P25 Pager<br>Model number: 7/800 MHz G4 Pager | Firmware R11N2 or higher               |

## 6. Aeronautical Permitted Radio List

The following defines the requirements for airborne AFRRCS radios.

**Note:**

Agencies who utilize helicopters or airplanes require radios certified for airworthiness by Transport Canada. It is the Agencies responsibility to obtain proper radios, licensed with Innovation, Science and Economic Development Canada (ISED) to operate in a helicopter or airplane below specific height and transmit power levels. At this time, the 700MHz public safety band has not been approved for aeronautical use. ISED and FCC are currently discussing aeronautical use in the 700MHz public safety band and until those decisions are made, ISED cannot authorize any 700MHz frequencies for aeronautical use. AFRRCS has not been licensed for aeronautical channels from aeronautical band.

**Aeronautical Radio Requirements**

An airborne FM radio is defined as a radio that is designed to be installed and operated in an aircraft. Primary power is from a 28 volt (nominal) negative ground aircraft power source.

- Airborne FM radios must be airworthiness approved by Transport Canada Civil Aviation (TCCA) or the FAA. A copy of the TCCA Authorized Release Certificate, Form One or equivalent must be included with each radio submitted for Permitted Radio testing.

| Manufacturer           | Contacts   | Permitted Radios | Firmware (specified version or higher) |
|------------------------|--|------------------|--|
| Technisonic Industries | <b>Robert Riel, Sales</b><br>905-890-2113 x210<br>rriel@til.ca | TDFM-9100        | Firmware V1.0.8 or higher.             |

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# **AFRRCS Policies and Procedures for Interoperability**

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**Section:** Subscriber Unit Requirements &  
Testing

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|----------------|----------------|--------------------|---------------------------------------|
| 1.0            | March 30, 2015 |                    | Approved by AFRRCS Governance.        |
|                |                |                    |                                       |

Section

1

# Subscriber Unit Testing Policies and Procedures

The Interoperability and Standards Council (IS Council) has identified features and functions agencies should evaluate when procuring components for use on AFRRCS. These requirements aid in standardizing component functionality on AFRRCS. Requirements are verified by agencies using associated test cases provided by the IS Council for AFRRCS agency use. Additionally a library of test cases will be available to migrating agencies for reference.

Components in scope of this testing policy:

- Subscriber Units

## 1.1 Agency Component Testing Procedures

Subscriber unit requirements, marked as strongly recommended and desirable, are located in the appendix to this document. Testing procedures for these requirements can be requested through AFRRCS at [afrrcs.consultant@gov.ab.ca](mailto:afrrcs.consultant@gov.ab.ca).

## 1.2 Effective Date

This policy shall become effective upon approval and shall remain in effect until rescinded. This policy shall be reviewed yearly and updated when required.

## Section

## 2

## Appendix A – Subscriber Unit Requirements

| #     | Mandatory / Desirable | Functional Requirement   | Proof required  |
|-------|-----------------------|--|---|
| 2.3.  | M                     | All subscriber radios must be listed on the AFRRCS permitted radio list prior to the closure of this pre-qualification (insert version number prior to releasing)    | Refer to latest Permitted Radio List                  |
| 2.4.  | M                     | Respondent must be willing to execute features test cases in P1 Lab and pass mandatory features  | Acknowledgement                                       |
| 2.6.  | M                     | Radios should be capable of transmitting and receiving in the frequency ranges 700/800 (764-776, 794-805, 806-825, 851-870)  | Spec sheet  |
|       |                       | Radios should be capable of transmitting and receiving in the VHF frequency range (136-174 MHz), if VHF capability has been requested                                | Spec sheet  |
| 2.7.  | D                     | Radio purchase must include programming software and cables, subject to Permitted Radio programming key restrictions   | Tender response                                       |
| 2.8.  | M                     | Respondent must supply programming software updates at no additional costs when updates are available  | Tender response                                       |
| 2.9.  | M                     | Respondent must supply radio firmware updates at no additional costs when updates are available  | Tender response                                       |
| 2.10. | M                     | Radios must come supplied with the required licensing for the mandatory and desired features: Vocoder (ambe+2), P25 trunking, LLA, AES256, programming (if required) | Tender response                                       |
| 2.11. | M                     | Radios must be capable of receiving AES256 encryption keys from a Harris KMF both by a manual input through a KFD and OTAR (Harris P25 (re.TIA.102))                 | AES OTAR test attached                                |
| 2.12. | M                     | Respondents will provide educational material to support staff training and migration  | Tender response                                       |
| 2.13. | M                     | Respondents will program radios with a provided codeplug prior to delivery   | Note: Codeplug for that manufacturer must be provided |
| 2.14. | M                     | Respondent must describe optional firmware feature sets and pricing available for all radios being proposed  | Tender response                                       |
| 2.15. | M                     | Respondents must describe any additional licensing and costs for all radios being proposed   | Tender response                                       |
| 2.16. | D/M                   | Key Fill Device (KFD); Respondent must identify a recommended/supported KFD for any proposed radios.   | AES OTAR test attached                                |
|       | M                     | All subscriber radios must carry a minimum of two year warranty parts and labor with acceptable turn-ground time.  | Tender response                                       |
|       | M                     | All subscriber radios must have an emersion rating of IP68   | Spec sheet  |
|       | M                     | All subscriber radios must operate in temperatures of -30C to +60C   | Spec sheet  |
|       | M                     | All subscriber radios must have active noise cancellation  | Spec sheet  |
|       | M                     | All subscriber radios must meet the drop shock test to concrete rating of TIA-603-C  | Spec sheet  |

| #     | Mandatory / Desirable                                | Functional Requirement  | Proof required                                       |
|-------|--|---|--|
| 3.00  | Radios General-applies to portable and mobile radios | Features  |  |
| 3.2.  | D  | Radio should be software upgradeable to Phase 2 6.25 KHz TDMA spacing   | Spec sheet   |
| 3.3.  | M  | Unencrypted Voice; Radio must be capable of transmitting and receiving unencrypted voice  | Covered in Permitted Radio test                      |
| 3.4.  | M/D  | Encrypted voice; Radio must be capable of transmitting and receiving AES FIPS-197 encrypted voice   | AES OTAR test attached                               |
| 3.5.  | M/D  | Encrypted voice; Radios must be capable of holding more than one encryption key. Respondents will describe the maximum umbers of encryption keys the radio will hold  |  |
| 3.6.  | M/D  | Link Layer authentication (LLA); Radios must be capable of using LLA on a Harris P25 system (re.TIA.102). The radio must be capable of communicating the LLA with the Harris Key Management Facility.   | Nonproprietary LLA not currently available on AFRRCS |
| 3.7.  | M/D  | Over the air re-keying (OTAR); Radio must be capable of receiving encryption keys via OTAR from a Harris KMF  | AES OTAR test attached                               |
| 3.8.  | M/D  | Encryption Key Transfer; Respondent will describe the ways an encryption key may be transferred from a Harris Key Management Facility (KMF) to their own (or recommended/supported (compliant with TIA.1.02)) Key Fill Device (KFD)   | AES OTAR test attached                               |
| 3.9.  | D  | Over the air programming (OTAP); Radio should be capable of receiving and executing over the air programming commands from the AFRRCS Harris P25 system   | AES OTAR test attached                               |
| 3.10. | M  | Enhanced Roaming; Radio must be capable of receiving neighboring site information on the control channel and make handover decisions based on the received information  | Enhanced Roaming test attached                       |
| 3.11. | D  | Dynamic Regroup Enabled; Radio should be capable of being dynamically regrouped on a Harris P25 system  | Not supported in AFRRCS configuration                |
| 3.12. | M  | Data Enabled; Radio must be capable of transmitting and receiving data as per the P25 Data Specification  | Status Message test attached                         |
| 3.13. | M  | Soft keys; Radio must be equipped with agency programmable soft keys. Respondents should describe the number of soft keys available on the mobile and portable radio  | Tender response, spec sheet                          |
| 3.14. | M  | Emergency button; Radio must be equipped with an 'Emergency Button'   | Covered in Permitted Radio testing                   |
| 3.15. | D  | Internal diagnostics; Radios should be equipped with agency accessible diagnostic function. Functions should include (but is not limited to): RSI of serving site, system and site ID, neighbor site ID with RSI, and RX/TX frequency of serving site. Access may be via telnet or SSH. | Spec sheet   |

| #           | Mandatory / Desirable  | Functional Requirement   | Proof required   |
|-------------|------------------------|--|--|
| 3.16.       | M                      | Talkgroups; Radio must be capable of accommodating multiple talkgroups. Respondents will describe the minimum and maximum number of talkgroups programmable into the radio   | Capability covered in Permitted Radio testing, Spec sheet for min & max values |
| 3.17.       | M                      | Talkgroup Zones; Respondents will describe the maximum number of talkgroups in a single zone and the maximum number of zones in a radio  | Spec sheet   |
| 3.18.       | M                      | Antenna; Radio must be supplied with an antenna appropriate for the frequency range  | tender response  |
| 3.19.       | M                      | Group scan; Radio must have the capacity to set a group scan list  | Capability covered in Permitted Radio testing,                                 |
| 3.20.       | M                      | Priority scan; Radio must have the capacity to set priority scan   | new test case  |
| 3.21.       | D                      | Service kit/tools; respondent should have a set of service tools available to support the repair of the radios offered   | tender response  |
| 3.22.       | D                      | Technician training; Respondent should have technical training available for technical staff   | Tender response  |
| 3.33.       | D                      | Trade in; Respondent should describe any trade-in value for legacy radios  | Tender response  |
| 3.24.       | D                      | Testing equipment and fixtures; Respondents should indicate if there is any specific testing equipment or fixtures required for any proposed radios  | Tender response  |
| <b>4.0.</b> | <b>Portable Radios</b> | <b>Features</b>  |  |
| 4.1.        | M                      | Keypad Buttons; Radio must be equipped with a keypad   | spec sheet   |
| 4.2.        | M/D                    | GPS enabled; Radio must be equipped with a GPS antenna and capable of transmitting the received GPS data. Respondent must identify if the radio requires an accessory to execute this function   | new test case  |
| 4.3.        | D                      | Front view lighted LCD Display; Radio must be equipped with a lighted LCD display viewable from the front. Respondent must describe the minimum number of viewable characters  | tender response, spec sheet  |
| 4.4.        | D                      | Top view lighted LCD Display; Radio should be equipped with a lighted LCD display viewable from the top. Respondent should describe the minimum number of viewable characters.   | tender response, spec sheet  |
| 4.5.        | D                      | Immersion protection; Radio must be protected against damage from immersion in water. Respondent should describe the standard to which the radio complies (e.g. Mil Spec 8.10 E and/or F)  | spec sheet   |
| 4.6.        | M                      | Battery; Radio must be equipped with a lightweight high capacity battery without memory characteristics. Respondent should describe the warranty and battery life minimum and maximum durations based on 5% active and 95% inactive when programmed to transmit at 3 Watts | spec sheet   |
| 4.8.        | M                      | Single unit charger; Portable Radio must be supplied with a single unit charger for 110V AC  | tender response  |
| 4.9.        | M                      | multi-unit charger/conditioner; Portable radio should have available as an option a multi-unit charger for 110V AC   | Tender response  |

| #           | Mandatory / Desirable | Functional Requirement  | Proof required              |
|-------------|-----------------------|---|-----------------------------|
| 4.10.       | D                     | Headset integration; Portable radio should have a direct- binaural headset and boom mic accessory available as an option                                  | tender response, spec sheet |
| 4.11        | D                     | If display is in front should be able to program to reverse view by pressing a button.  | Test case required          |
|             | D                     | Selector switch numbers should be lit.  | Tender response             |
| 4.12        | M                     | Lapel Microphone; Radio must have an external lapel speaker/microphone as an available option   | Tender response             |
| <b>4.13</b> | <b>Lapel Mics</b>     | <b>Features</b>   |                             |
|             | D                     | Lapel Microphone; Radio must have an external lapel speaker/microphone with an embedded antenna as an available option                                    | Spec sheet                  |
|             | D                     | Lapel Microphone must have a rugged 360 rotating belt clip  | spec sheet                  |
|             | D                     | Lapel Microphone cable must be flame resistant  | spec sheet                  |
|             | D                     | Lapel Microphone must have an emergency button with protective shroud   | spec sheet                  |
|             | D                     | Earphone jack isolated from the main housing for seal integrity and to have the option to be a 2.5mm or 3.5mm jack  | spec sheet                  |
|             | D                     | Lapel Microphone must be fully field repairable and all replacement parts available   | spec sheet                  |
|             | D                     | PTT switch life : 1 million cycles  | spec sheet                  |
|             | M                     | Lapel Microphone Must operate in temperatures of -30C to +60C   | spec sheet                  |
|             | M                     | Lapel Microphone Storage temperature -57 C to +60 C   | spec sheet                  |
|             | D                     | Minimum of two year warranty  | Tender response             |
| <b>5.0.</b> | <b>Mobile Radios</b>  | <b>Features</b>   |                             |
| 5.1         | M                     | Control Head; Radio must be capable of having a control head mounted in no fewer than two locations   | spec sheet                  |
| 5.2         | M                     | Front view lighted LCD Display; Radio must be equipped with a lighted LCD display viewable from the front   | spec sheet                  |
| 5.3         | D                     | Fixed base radio; Respondent should offer a kit to accommodate a conversion from 12V mobile to 110V fixed base radio with external speaker and microphone | tender response             |
| 5.4         | D                     | Privacy Handset; radio must have a privacy handset as an available option   | tender response             |

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# AFRRCS Policies and Procedures for Interoperability

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**Section:** Agency Voice Logging Requirements & Testing

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| 0.1            | April 14, 2014    | KC                 | First Draft of voice logging requirements |
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| 1.0            | December 17, 2014 |                    | Approved by AFRRCS Governance.            |
|                |                   |                    |   |

Section

1

# Agency Voice Logging Testing Policies and Procedures

The Interoperability and Standards Council (IS Council) has identified features and functions agencies should evaluate when procuring components for use on AFRRCS. These requirements aid in standardizing component functionality on AFRRCS. Requirements are verified by agencies using associated test cases provided by the IS Council for AFRRCS agency use. Additionally a library of test cases will be available to migrating agencies for reference.

Components in scope of this testing policy:

- Voice Logging

## 1.1 Agency Component Testing Policy

Agency components installed on AFRRCS should demonstrate strongly recommended AFRRCS Operational Requirements by successfully passing AFRRCS provided test cases for those requirements.

## 1.2 Agency Component Testing Procedures

Component requirements, marked as strongly recommended and desirable, are located in the appendix to this document. Testing procedures for these requirements can be requested through AFFRCS at [afrrcs.consultant@gov.ab.ca](mailto:afrrcs.consultant@gov.ab.ca).

## 1.3 Effective Date

This policy shall become effective upon approval and shall remain in effect until rescinded. This policy shall be reviewed yearly and updated when required.

## Section

## 2

## Appendix A - Agency Component Requirements

| Category      | #  | Strongly Recommended / Desirable | Requirement   |
|---------------|----|----------------------------------|---|
| Voice Logging | 1  | S                                | Must be compliant with Harris P25 network   |
| Voice Logging | 2  | S                                | Must have latest and improved model in current prod...Proposed system shall be designed for continuous duty operation with max. redundancy...shall be of the same family of long term recorders used in broadcast industry, air traffic controller or public safety |
| Voice Logging | 3  | S                                | Must operate on Harris P25 radio system   |
| Voice Logging | 4  | S                                | Must support continuous 24 hour voice recording, with time (to the second) and date identification.   |
| Voice Logging | 5  | D                                | Must support up to 192 channels in one chassis.   |
| Voice Logging | 6  | D                                | Must provide a minimum of 20,000 channel hours of internal recording on-line for high speed access.   |
| Voice Logging | 7  | S                                | Must support simultaneous record and playback.  |
| Voice Logging | 8  | S                                | Must be capable of recording and interfacing with a mix of analog, digital and VOIP telephony in one chassis.   |
| Voice Logging | 9  | S                                | The VRS on board storage must support RAID hard disk configuration.   |
| Voice Logging | 10 | S                                | The VRS must be equipped with dual hot swappable industrial grade power supplies.   |

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| Category      | #  | Strongly Recommended / Desirable | Requirement   |
|---------------|----|----------------------------------|---|
| Voice Logging | 11 | S                                | The VRS must support external mass storage media, i.e. external firewire hard drive, network drives, etc. Additional interfaces for this purpose must be specified, if any. |
| Voice Logging | 12 | S                                | The VRS must be capable to automatically adjust to Daylight Savings Time.   |
| Voice Logging | 13 | S                                | The VRS must have user selectable Automatic Gain Control (AGC) setting for playback. Messages must be recorded at input levels and not automatic.                           |
| Voice Logging | 14 | S                                | The VRS must support the following record activation: VOX, Off Hook, and Continuous.  |
| Voice Logging | 15 | S                                | Compatible with Time Standard such as IRIG-B, IRIG-E, SNTP, NTP, etc.   |
| Voice Logging | 16 | S                                | Must have MTBF, MTTR and/or Availability figures.   |
| Voice Logging | 17 | S                                | Mountable on a 19-inch rack.  |
| Voice Logging | 18 | S                                | Ability to automatically restart the software application in the event of a power failure.  |
| Voice Logging | 19 | D                                | Equipped with printer port. (USB or parallel) to print label with unique ID, date of creations, logger ID, etc.   |
| Voice Logging | 20 | S                                | Ability to vary the speed of playback without pitch distortion.   |
| Voice Logging | 21 | S                                | The VRS must save all audio files in its proprietary format rather than the standard format such as wav, MP3, etc. and must include authentication to prevent tampering.    |

| Category      | #  | Strongly Recommended / Desirable | Requirement  |
|---------------|----|----------------------------------|--|
| Voice Logging |    |                                  | <b>FUNCTIONALITY</b>   |
| Voice Logging | 22 | S                                | Remote administrator and user software shall be username and password protected.   |
| Voice Logging | 23 | S                                | The VRS must have configurable levels of user based access control.  |
| Voice Logging | 24 | S                                | Ability to support simultaneous accesses from multiple stations.   |
| Voice Logging | 25 | S                                | The recorder equipment must have the capability to be remotely accessed and operated in a network environment wherein all recordings/playbacks are processed.  |
| Voice Logging | 26 | S                                | At a minimum the VRS must have the following search capabilities that can be executed individually or in combination: by channel, date, time, duration, incident, ANI/ALI, outgoing DTMF.            |
| Voice Logging | 27 | S                                | The VRS must support sorting, searching, monitoring and filtering of calls using user-defined parameters.  |
| Voice Logging | 28 | S                                | Ability to search across multiple channels in a specified time frame for multiple recordings and replay each individual recording sequentially.  |
| Voice Logging | 29 | S                                | Capable of reconstructing scenarios. i.e. ability to quickly find a number of calls relating to a particular incident and ability to then place searched calls in chronological order for play back. |
| Voice Logging | 30 | D                                | Ability to search by advance features like key words, etc.   |
| Voice Logging | 31 | S                                | The VRS must have the ability to record ANI/ALI data packet from current Alberta Telco service providers.  |

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| Category      | #  | Strongly Recommended / Desirable | Requirement   |
|---------------|----|----------------------------------|---|
| Voice Logging | 32 | S                                | The VRS must be capable of recording TDD/TTY.   |
| Voice Logging | 33 | S                                | Must support calls tagging and saved as case or incident folders for future case management or incident recreation.   |
| Voice Logging | 34 | S                                | Ability to easily convert file to alternate media formats WAV, Audio DVD, MP3, etc. similar to "cut and paste", or "drag and drop."   |
| Voice Logging | 35 | S                                | Capability of Instant Recall functionality - to access any desktop position in a current call and playback the last call with the ability to play back last 30 minutes of recordings. |
| Voice Logging | 36 | S                                | Capability of recording from Harris P25 trunked radio system via native connection or via CSSI/ISSI. Vendor shall demonstrate this capability   |
| Voice Logging | 37 | S                                | Recording of radio traffic shall be searchable by time, subfleet alias and unit alias/LIDs.   |
| Voice Logging | 38 | S                                | Capable of streaming audio playback.  |
| Voice Logging | 39 | S                                | Capable of live monitoring via the network.   |
| Voice Logging | 40 | S                                | Ability to record and review alarm and fault history.   |
| Voice Logging | 41 | S                                | Ability to maintain consistent on-line recording retrieval rates of less than 3 seconds.  |
| Voice Logging | 42 | S                                | Ability to record and interface with VOIP telephony.  |

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| Category      | #  | Strongly Recommended / Desirable | Requirement   |
|---------------|----|----------------------------------|---|
| Voice Logging | 43 | S                                | Ability to record using selectable compression rates.   |
| Voice Logging |    |                                  | <b>SPECS</b>  |
| Voice Logging | 44 | S                                | Must support archive protection to prevent recording over or formatting of previously recorded media.             |
| Voice Logging | 45 | S                                | Ability to regularly archive recordings to a user supplied archive device, i.e. SAN, NAS, etc.                    |
| Voice Logging | 46 | S                                | Ability to implement software upgrades on VRS. e.g. direct VRS DVD RAM, via LAN, or remotely by modem connection. |
| Voice Logging | 47 | S                                | Equipped with form C contacts for local or remote fault alarm monitoring.   |
| Voice Logging | 48 | S                                | Speech analytics  |
| Voice Logging | 49 | S                                | 24/7 Support.   |
| Voice Logging | 50 | D                                | RTT calls tracking and recording.   |
| Voice Logging | 51 | S                                | AES 256 bit Encryption capable. for a separate short term recorder device).                                       |
| Voice Logging | 52 | S                                | Ability to tag the various types of recording interactions and store in folders.                                  |

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| Category      | #  | Strongly Recommended / Desirable | Requirement   |
|---------------|----|----------------------------------|---|
| Voice Logging | 53 | D                                | Redaction capabilities for sensitive information (i.e. use of a tone or beep to override vs. the need for segment removal).   |
| Voice Logging | 54 | S                                | Ability to retrieve recordings using certain search parameters (i.e. CAD event number, radio IDs, ANI/ALI, etc).  |
| Voice Logging | 55 | D                                | Next Generation 9-1-1 capable (i.e. capable of recording, retrieval, playback, etc. of all standard Next Gen 9-1-1 multi-media formats).  |
| Voice Logging | 56 | S                                | System individual user auditing / tracking of recordings accessed and/or played back.<br>Ability to assign, deny or limit individual end users playback and monitoring rights (i.e. playback of certain calls can be limited to an individual end user or a limited number of end users). |
| Voice Logging | 57 | S                                | Capable of capturing all common forms of multimedia (i.e. audio, video, text, telematics, photos and related data).   |
| Voice Logging | 58 | D                                | Capable of quickly recalling short term recordings (i.e. eliminating the need for a separate short term recorder device)  |
| Voice Logging | 59 | S                                | Recorder should be able to search by Phone number and other fields in ANI Data packet.  |



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# **AFRRCS Policies and Procedures for Interoperability**

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**Section:** Agency Console Requirements &  
Testing

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Section

1

# Agency Console Testing Policies and Procedures

The Interoperability and Standards Council (IS Council) has identified functions and features agencies should evaluate when procuring components for use on AFRRCS. These requirements aid in standardizing component functionality on AFRRCS. Requirements are verified by agencies using associated test cases provided by the IS Council for AFRRCS agency use. Additionally a library of test cases will be available to migrating agencies for reference.

Components in scope of this testing policy:

- Consoles
- Conventional Resource Interface

## 1.1 Agency Component Testing Policy

Agency components installed on AFRRCS should demonstrate strongly recommended AFRRCS Operational Requirements by successfully passing AFRRCS provided test cases for those requirements.

## 1.2 Agency Component Testing Procedures

Component requirements, marked as strongly recommended and desirable, are located in the appendix to this document. Testing procedures for these requirements can be requested through AFRRCS at [afrrcs.consultant@gov.ab.ca](mailto:afrrcs.consultant@gov.ab.ca)

## 1.3 Effective Date

This policy shall become effective upon approval and shall remain in effect until rescinded. This policy shall be reviewed yearly and updated when required.

## Section

## 2

## Appendix A - Agency Component Requirements

| Category | #  | Strongly Recommended / Desirable | Description   | Requirement   |
|----------|----|----------------------------------|---|---|
| Console  | 1  | S                                | Receive PTT-ID display                              |   |
| Console  | 2  | S                                | Declare and clear Incoming Emergency Alert          | By both audible and visual indication. Dispatcher can clear the alarm   |
| Console  | 3  | S                                | Dispatcher Interrupt                                | Dispatcher can override users   |
| Console  | 4  | S                                | Talk Group Selection                                |   |
| Console  | 5  | S                                | Individual calls                                    | Console can make and receive individual lcalls. lcalls to go to Select speaker, group calls to Unselect speaker   |
| Console  | 6  | S                                | Intercom call                                       | Console to console communication  |
| Console  | 7  | S                                | Radio Talk Group Patch                              | Multiple sources: Each dispatch console shall permit a channel, talkgroup or telephone line to be interconnected with any other audio source without a limit on the number of interconnected sources.   |
| Console  | 8  | S                                | Radio Telephone patching                            | Console can setup patching of radio talk groups or lcalls and telephone lines.  |
| Console  | 9  | S                                | SimulSelect   | Dispatchers can communicate to selected talk groups but selected talk groups cannot communicate directly with one another, at agency level  |
| Console  | 10 | S                                | Alert tone  | Operator can select desired unit or talk group from console, send alert tone to all portables of the unit or talk group   |
| Console  | 11 | S                                | Call history  | List of transactions per radio. Flexible ability to set # transactions kept.  |
| Console  | 12 | S                                |   | Failure of one dispatch console workstation will have no effect on the operations of the radio system or other dispatch console workstations  |
| Console  | 13 | D                                | Touch screen  | Radio console support touch screen interface  |
| Console  | 14 | S                                | Headset sharing with phone system                   | Each dispatch console shall have the capability to be equipped with a telephone interface module which allows the dispatcher's headset to be used with an external telephone set. This interface shall consist of a 4-wire or 6-wire audio circuit with adjustable transmit and receive levels. This module shall be equipped with an off-hook detection circuit which will be provided via contact closure on the telephone set. When an off-hook condition is detected, the telephone transmit and receive audio paths shall be automatically bridged onto the headset. When the PTT switch is activated, the headset microphone audio shall be transmitted to the selected talkgroups and channels only and not to the telephone. The telephone interface module shall also permit patching between the telephone, talkgroups, and conventional channels. The telephone set's keypad shall be used for all dialing and call setup. |
| Console  | 15 | S                                | Support Selected channels and non-selected channels | Received audio are routed to separate speakers. Operator can monitor multiple unselected channels.  |

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| Category | #  | Strongly Recommended / Desirable | Description                         | Requirement  |
|----------|----|----------------------------------|-------------------------------------|--|
| Console  | 16 | D                                | Integrated Instant Recall recording | Each dispatch console shall be equipped with a call-check or instant playback recorder. The recorder shall be capable of recording a minimum of 20 minutes of transmit and receive audio recording. Recording shall be initiated by radio reception, operation of the push-to-talk switch or a telephone set off-hook condition. The recorder shall also be equipped with an output jack suitable for an external recorder |
| Console  | 17 | S                                | Support customized GUI setup        | Each agency can modify, not necessarily each user  |
| Console  | 18 | S                                | System error message                | Display pre-configured system error message  |
| Console  | 19 | S                                | Visual PTT icon                     | Dispatcher should have an visible icon indicating transmission in addition to the audible 'go ahead' tone  |
| Console  | 20 | S                                | Tones                               | Able to tone out rural fire departments using toning features  |
| Console  | 21 | S                                | Emergency / Panic                   | Able to display radio id for panic alarms.   |
| Console  | 22 | S                                | Encryption                          | AES  |
| Console  | 23 | S                                | Cross Mute                          | Cross mute other consoles in room.   |
| Console  | 24 | D                                | Voice Paging                        | Each dispatch console shall be capable of voice paging individual radios or groups of radios via the console's keypad input.   |
| Console  | 25 | S                                | Patch: Multiple patches:            | Each dispatch console shall be capable of operating with multiple patches at a time.   |
| Console  | 26 | S                                | Alert Tone                          | Each dispatch console shall be equipped with a minimum of 3 "alert buttons" which, when depressed, shall send a distinctive alerting tone to the selected talkgroups or channels.  |
| Console  | 27 | S                                | Supervisory Override                | All supervisory dispatch consoles shall allow additional functionality such as be able to override the operations of any other console within its agency.  |
| Console  | 28 | S                                | Supervisor Monitor                  | All supervisory dispatch consoles shall be able to monitor the activities of any other console within its agency.  |
| Console  | 29 | S                                | Reconfiguration                     | Individual dispatch consoles shall be easily reconfigurable to permit consolidation of dispatch activities as required such as during "quiet" hours or emergency back-up   |
| Console  | 30 | S                                | Display                             | Each dispatch console shall be equipped with a display having at least 10 alphanumeric characters for identifying the unit ID and alias of each calling unit.  |
| Console  | 31 | S                                | Digital Clock                       | Each dispatch console shall be equipped with a digital 24 hour clock which displays hours, minutes and seconds. This clock shall be synchronized to the time standard source.  |
| Console  | 32 | S                                | Headset Jack Box                    | Each dispatch console shall be equipped with two headset jack boxes. For example, both headset jack boxes shall be equipped with a PJ-266A dual jack assembly and be compatible with standard headsets. The headset jacks shall be connected in parallel and shall automatically adjust transmit and receive audio levels to compensate for the load.  |
| Console  | 33 | S                                | Keypad                              | A telephone keypad with a minimum of 12 keys shall be provided to permit individual calling and paging and other functions.  |

| Category           | #         | Strongly Recommended / Desirable | Description                           | Requirement  |
|--------------------|-----------|----------------------------------|---------------------------------------|--|
| Console            | 34        | S                                | Microphone                            | All dispatch consoles shall be equipped with options for a surface-mount or goose-neck noise-cancelling microphone. This microphone shall be disconnected when a headset is plugged into the headset jack.   |
| Console            | 35        | S                                | VU Meter                              | Each dispatch console shall be equipped with a VU meter to permit the continuous measurement of console transmit and receive audio. A similar indicator should be present on each talkgroup module indicating the presence of receive audio for a particular talkgroup, channel or user.         |
| Console            | 36        | S                                | Select/Unselect Speakers              | Each dispatch console shall be equipped with a select and an unselect speaker. Both speakers shall be magnetically shielded and rated for 4 watts of audio output with a distortion of less than 3%.   |
| Console            | 37        | S                                | Push-to-Talk Switch                   | Each dispatch consoles shall be capable of being equipped with a minimum of a foot and a panel-mounted push-to-talk (PTT) switch or mouse. As an option each console shall be capable of being equipped with external PTT.   |
| Console            | 38        | S                                | Logging Recorder Output               | Each dispatch console shall be equipped with a 2-wire auxiliary output for recording transmit and receive console audio. Desirable if console provides a short term recording capability   |
| <b>Heading for</b> | <b>39</b> | <b>S</b>                         | <b>General</b>                        | <b>Each dispatch console shall be equipped with talkgroup/channel modules capable of the following features</b>  |
| Console            | 39a       | S                                | Activity indicator                    | Indicates activity on the module   |
| Console            | 39b       | S                                | Instant transmit                      | An immediate push-to-talk switch regardless of whether the channel is selected or not, selected by the cursor hovering over the talkgroup  |
| Console            | 39c       | S                                | Mute                                  | A mute switch and a status indicator   |
| Console            | 39d       | S                                | Controls                              | A volume control to vary the audio level with status indicator   |
| Console            | 40        | S                                | Programmable Talkgroup/Channel Module | Programmable talkgroup/channel modules shall be available to permit the operator to select, through a scrolling operation, the desired preprogrammed talkgroup or channel. Each module shall be equipped with a display, having at least 8 alphanumeric characters.                              |
| Console            | 41        | S                                | Fixed Talkgroup/Channel Module        | Fixed talkgroup/channel modules shall be available for accessing a single talkgroup or channel that are not modifiable by the operator.  |
| Console            | 42        | S                                | Power                                 | All equipment shall operate off 120 VAC ±5%.   |
| Console            | 43        | S                                | Mounting                              | All dispatch console control panels shall be capable of being mounted in standard 48.3 cm (19 inch) cabinetry  |
| Console            | 44        | S                                | Audio                                 | a) Output power: Audio output power shall be a minimum of 4 watts per speaker.<br>b) Distortion: Distortion shall be less than 3% at rated output.<br>c) Frequency response: The audio frequency response shall be within -3,+1 dB referenced to 1 kHz across the frequency band 300 to 3400 Hz. |

| Category | #  | Strongly Recommended / Desirable | Description                    | Requirement  |
|----------|----|----------------------------------|--------------------------------|--|
|          |    |                                  |                                | d) Noise: Idle noise shall be less than 20 dBrnC0.   |
| Console  | 45 | S                                | Talk Group Control Panel       | a) Display an alias for the talk group<br>b) Display an indication of transmit and receive activity on the talk group, regardless of the source of the activity<br>c) Capable of being selected and unselected, individual or several together<br>d) Capable of being patched together with any other talk groups on the same console, whether selected or not   |
| Console  | 46 | D                                | Automatic Level Control        | The console shall maintain a constant audio level both in receive and in transmit mode. Automatic gain control in both transmit and receive shall result in output level variation of less than 3 dB for and input level change of 30 dB.  |
| Console  | 47 | S                                | Acoustic Feedback Prevention   | Audio from certain other consoles is muted regardless of whether it is routed to the select or unselect speaker.   |
| Console  | 48 | S                                | Encrypted Talk Group           | Ability to transmit & receive encrypted talk group AES 256.  |
| Console  | 49 | D                                | Push-to-Talk Switched          | · Foot pedal be dual, consisting of main PTT switch and a Broadcast call PTT switch. A headset be available which allow dispatch to control main transmit via an in-line switch on the headset cord. Any specialized additional connector necessary should be mounted in close proximity to the headset jacks. A curly cord, fully extendable to 6 meters in length, is required with this headset.  |
| Console  | 50 | D                                | Management Report              | Capable of producing agency specific radio activity reports.   |
| Console  | 51 | D                                | Message Waiting                | With a radio containing selective calling, a dispatcher or supervisor can leave a message/alert in an unattended radio. When the target of the call returns to the radio, he would have an indication to call back the sender.<br>Radios equipped with this capability may:<br>- receive alert only .<br>- send alert to a predetermined radio<br>- send alert to a predetermined number of radios<br>- send alert to any radio capable of receiving an alert. |
| Console  | 52 | D                                | Dispatcher Pre-Empt            | Dispatchers have the capability to pre-empt a group call, then immediately transmit to the talk group.   |
| Console  | 53 | S                                | Unselect                       | When a talk group is unselected, the dispatcher:<br>- Will hear its audio in the “Unselect” speaker unless the dispatcher chooses to mute the audio from that talk group via individual control<br>- Will transmit on that talk group only when it’s specific transmit button is activated.  |
| Console  | 54 | D                                | Request to Talk RTT            | Receive & display request from radio user they require transmission between user and console   |
| Console  | 55 | D                                | Emergency Request to Talk ERTT | Receive and display priority request from radio user they require transmission between user and console  |



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| Category                        | #  | Strongly Recommended / Desirable | Description  | Requirement   |
|---------------------------------|----|----------------------------------|--|---|
| Conventional Resource Interface | 56 | D                                | Interface with Raytheon ACU/NXU  | IP connection or 4 wire analogue connection   |
| Conventional Resource Interface | 57 | D                                | Interface with third party reporting tool                                | Requires data feed to tool for reporting  |
| Conventional Resource Interface | 58 | S                                | Able to connect with conventional and trunked radio users not on AFRRCS. |   |
| Conventional Resource Interface | 59 | D                                |  | Dispatcher can override users on non AFRRCS systems   |
| Conventional Resource Interface | 60 | D                                |  | Console shall be capable of interfacing to E & S signaling method.  |
| Conventional Resource Interface | 61 | D                                |  | Console shall support EIA standard function tones from 1050 to 2050 Hz  |
| Conventional Resource Interface | 62 | D                                |  | Console shall support DC signaling interface using 0, -2.5, ±6 and ±11 mA (135 Vdc maximum)   |
| Conventional Resource Interface | 63 | D                                | Station Alert Gateway  | Should have the capability to interface with the station alert server for CAD and voice functionality   |
| Conventional Resource Interface | 64 | D                                | Interoperability Gateway Interface                                       | Should have the capability to interface with different systems (regardless of vendor or standard) to assist in migration planning as well as pre/post migration communication with other agencies |