
AFRRCS Agency Handbook

Section: Purchasing Documents

Contents

1. Permitted Radio List
2. Subscriber Unit Requirements
3. Console Requirements
4. Voice Logging Requirements

HANDBOOK REVISION HISTORY

Version	Date	Modified By	Section, Page(s), Text Revised
0.1	July 22, 2015	BS	First Draft
1.0	January 12, 2016	BS	First Version
2.0	May 19, 2016	BS	Updated permitted radio list
3.0	June 27, 2016	BS	Permitted radio policy annual review (no major changes), updated Permitted Radio list standing offer radio pricing contact.

AFRRCS Policies and Procedures

Section: Permitted Radio List

DOCUMENT REVISION HISTORY

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0.1	October 2, 2012	BS	Initial Draft
0.2	October 4, 2012	CB	Revision of Draft Document
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0.7	October 14, 2014	BS	Add process for accessing Standing Offer
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1.0	April 22, 2015	BS	Update EF Johnson model information
1.1	May 20, 2015	BS	Update EF Johnson contacts & products, TAIT contacts
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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. Delete Kenwood TK series

Contents

Permitted Radio List Background	4
Testing Process	4
Updating Process	4
Permitted Radio List	5
Aeronautical Permitted Radio List.....	6
Appendix	7
The Process for Accessing the Standing Offer Radio Pricing	7

Section

1

Permitted Radio List Background

The Alberta First Responders Radio Communications System (AFRRCS) will be a province wide open standards two-way radio network for public safety first responder agencies, including police, fire and ambulance. AFRRCS will provide 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 allowed first responder agencies to use other manufacturer's P25 compliant devices on the network. The AFRRCS Transformation Team worked with the design team and manufacturers of P25 radio equipment to modify and develop tests for end user equipment that would operate seamlessly on the AFRRCS network while meeting the basic communication and safety requirements of first responders.

Section

2

Testing Process

An Opportunity Notice was posted on the Alberta Purchasing Connection, inviting all P25 manufacturers to submit information about their P25 subscriber equipment. All submissions were required to provide supportive P25 Compliance Assessment Program Documentation. Each compliant submission from the various manufacturers was advanced to the next phase, and invited to submit their subscriber equipment for testing in the AFRRCS P1 lab, located in Edmonton. Each manufacturer was offered time in the lab to ensure their equipment was correctly programmed to operate within the AFRRCS environment. The successful manufacturers and their products are contained in the Permitted Radio list in section 4 of this document.

Updating Process

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.

Section

3

Permitted Radio List

Manufacturer	Contacts	Permitted Radios	Firmware (specified version or higher)
EF Johnson	Greg Cust Regional Sales Phone: 780-818-8116 Email: gcust@ca.jvckenwood.com	Viking VP900 (VHF/700/800 Multiband)	8.10.29
	Ron Rickward Mgr. Engineering Technical Services Phone: 905-908-0199 Email: rrickward@ca.jvckenwood.com	Viking VP600 (VHF or 700/800 models) VM600 (700/800)	8.10.29 8.10.29
Harris	Bob Henley - Solution Eng. Mgr. Phone: 780-392-6840 Cell: 780-686-3533 robert.henley@harris.com	XG100, XM100	R5C05 or later
	Brian Phillips , Reg. Sales Mgr. 1-403-516-3191 brian.phillips@harris.com	XG25, XG75, P7300 series, M7300 series	R5C05 or later
	Doug Cantera , Area Sales Manager Phone: 780-392-6805 Cell: 780-392-6805 dcantera@harris.com	XG15P	R5C05 or later
	Huntley Quinn , Area sales 587-216-8841 hquinn@harris.com	XL200	R5C05 or later
Kenwood	Anoop Dhanjal Phone: 613 688 2994 Cell: 613 857 2670 Anoop.dhanjal@harris.com		
	Greg Cust , Customer Sales Rep Phone: 780-818-8116 gcust@ca.jvckenwood.com Ron Rickward , Assistant Manager, Engineering & System Sales Office:1-800-775-0148, RRickward@ca.jvckenwood.com	NX5200 portable, NX5700 mobile, NX5400 portable, NX5900 mobile	firmware version 1.65.00 checksum D77D

Manufacturer	Contacts	Permitted Radios	Firmware (specified version or higher)
Motorola	Martyn Lutz Senior Account Manager (778) 878-5349 martyn.lutz@motorolasolutions.com	APX4000, APX6000, APX6500, APX7000, APX7500, XTS Series XTL Series APX1500, APX1000, APX4500, APX3000, APX8000	APX: R08.01.01 XTS/XTL: R17.01.02 APX: R14.00.04
RELM	Peter Rogell , Sales 321-953-7809 office 321-431-6208 cell progell@relm.com	KNG P150,	Portable firmware release 1.4.5.0 (or higher) Mobile firmware release 2.4.5.0 (or higher). 2.1.1 thru 4.2.6 2.1.1 thru 4.6
	Jim Holthaus , Tech Support 402- 990-1551 jholthaus@relm.com	KNG M150 KNG P800	
		KNG M800	
TAIT	Daisy M. Fisher , Business Development Manager Direct Line: 1-416-988-4989 Email: daisy.fisher@taitradio.com	TP9100 Series, TM9100 Series TP9400 Series TM9400 Services	V9.27.0.2 V2.06

AFRRCS engineering manages the radio programming templates. Templates and key management procedures are available upon request to transformationconsultant@gov.ab.ca.

Section
4

Aeronautical Permitted Radio List

Agencies with helicopters or airplanes require radios certified for airworthiness by Transport Canada, in addition to being permitted onto AFRRCS. The following requirements define the requirements for airborne AFRRCS radios.

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	Robert Riel, Sales 905-890-2113 x210 rriel@til.ca Jon Rorke, Tech Support 905-890-2113 x203 johnr@til.ca	TDFM-9100	Firmware V1.0.8 or higher.

Section 5 Appendix

The Process for Accessing the Standing Offer Radio Pricing

Accessing the Standing Offer is through the Government of Alberta “MyAgent” Web Access.

Approved Organizations that have access to “MyAgent” are listed on Alberta Purchasing Connection <http://www.purchasingconnection.ca>

Purchasers from Approved Organizations can access the information pertaining to the Standing Offer Contracts via “MyAgent” at the following menu path: Site Links box > click on Purchasing Site > Supply Arrangements box > click on Instructions Purchasing Goods > click on Radio and Accessories

First:

-Purchasers outside of the GoA need to review the Approved Organizations List at the following menu path:

Click I Am a Vendor > under Doing Business in APC, click 6th bullet – GOA Approved Organizations > click Approved Organizations 2013_Feb_21

If their organization is listed, this means someone from their Procurement unit has already been given access to the site. They will need to follow-up with this unit to access the posted information.

Second:

- if their organization is not listed, they need to send an email to Michael Fleming (michael.g.fleming@gov.ab.ca) requesting access to “MyAgent”, stating it is for the Standing Offer Contracts for radios and accessories associated with the AFFRCS Project.

AFRRCS Policies and Procedures for Interoperability

Section: Subscriber Unit Requirements & Testing

Contents

Subscriber Unit Testing Policies and Procedures	4
1.1 Agency Component Testing Procedures	4
1.2 Effective Date	4
Appendix A – Subscriber Unit Requirements	5

DOCUMENT REVISION HISTORY

Version	Date	Modified By	Section, Page(s), Text Revised
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.

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

#	Mandatory/ Desirable	Functional Requirement	Proof required
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
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

#	Mandatory/ Desirable	Functional Requirement	Proof required
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
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

#	Mandatory/ Desirable	Functional Requirement	Proof required
4.0.	Portable Radios	Features	
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
4.10.	D	Headset integration; Portable radio should have a direct- biaural 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

#	Mandatory/ Desirable	Functional Requirement	Proof required
4.12	M	Lapel Microphone; Radio must have an external lapel speaker/microphone as an available option	Tender response
4.13	Lapel Microphones	Features	
	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
5.0.	Mobile Radios	Features	
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

AFRRCS Policies and Procedures for Interoperability

Section: Agency Console Requirements & Testing

Contents

Agency Console Testing Policies and Procedures	4
1.1 Agency Component Testing Policy	4
1.2 Agency Component Testing Procedures	4
1.3 Effective Date	4
 Appendix A - Agency Component Requirements	 5

DOCUMENT REVISION HISTORY

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0.2	May 12, 2014	BS	Delete duplicate items, CAD section
0.3	May 16, 2014	BS	Revisions made with workgroup
1.0	December 17, 2014		Approved by AFRRCS Governance

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.

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.

AFRRCS Policies and Procedures for Interoperability – Agency Console Requirements & Testing

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 a 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
Heading for	39	S	General	Each dispatch console shall be equipped with talkgroup/channel modules capable of the following features
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 $\pm 5\%$.
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. b) Distortion: Distortion shall be less than 3% at rated output. 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 dB _{BrnC0} .
Console	45	S	Talk Group Control Panel	a) Display an alias for the talk group b) Display an indication of transmit and receive activity on the talk group, regardless of the source of the activity c) Capable of being selected and unselected, individual or several together 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. Radios equipped with this capability may: - receive alert only - send alert to a predetermined radio - send alert to a predetermined number of radios - 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: - Will hear its audio in the “Unselect” speaker unless the dispatcher chooses to mute the audio from that talk group via individual control - 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

AFRRCS Policies and Procedures for Interoperability – Agency Console Requirements & Testing

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

AFRRCS Policies and Procedures for Interoperability

Section: Agency Voice Logging
Requirements & Testing

Contents

Agency Voice Logging Testing Policies and Procedures.....	4
1.1 Agency Component Testing Policy	4
1.2 Agency Component Testing Procedures	4
1.3 Effective Date	4
 Appendix A - Agency Component Requirements	 5

DOCUMENT REVISION HISTORY

Version	Date	Modified By	Section, Page(s), Text Revised
0.1	April 14, 2014	KC	First Draft of voice logging requirements
0.2	May 16, 2014	BS	Revisions made with workgroup.
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 AFRRCS at 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.

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			FUNCTIONALITY
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.

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.

Category	#	Strongly Recommended / Desirable	Requirement
Voice Logging	43	S	Ability to record using selectable compression rates.
Voice Logging			SPECS
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.

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. 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.