



**REQUEST FOR INFORMATION (RFI)
FOR PORTABLE RADIOS TO BE USED ON THE
LOS ANGELES REGIONAL INTEROPERABLE
COMMUNICATIONS SYSTEM (LA-RICS)
LAND MOBILE RADIO (LMR) SYSTEM**

RFI NO.: LA-RICS 018

APRIL 17, 2023

**LA-RICS AUTHORITY PORTABLE RADIOS
REQUEST FOR INFORMATION**

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1.0 INTRODUCTION

1.1 Background

On August 15, 2013, the Los Angeles Regional Interoperable Communication System (LA-RICS) Authority (Authority) and Motorola Solutions, Inc. (Motorola) entered into an Agreement to build an interoperable hybrid Land Mobile Radio (LMR) System that would operate in both UHF T-Band and 700 MHz spectrum in order to provide public safety first responders in the Los Angeles County region with real time mission critical voice and data communications that would support day-to-day, mutual aid, and task force operations. When the build out of the LMR System is completed, the LMR System will provide enhanced two-way wireless communications to users of the LMR System.

The LMR System is an APCO Project 25 (P25) Phase 1 and Phase 2 compliant, digital trunked communications system which is vendor agnostic to allow P25 compliant radios to operate on it. It uses a Motorola Astro 25 multi-zone simulcast infrastructure with a targeted final version number of not less than 7.18. Communication through the LMR System will be carried out by several Subsystems, which includes a Digital Trunked Voice Radio Subsystem (DTVRS), Analog Conventional Voice Radio Subsystem (ACVRS), Los Angeles Regional Tactical Communications Subsystem (LARTCS), and a Narrowband Mobile Data Network (NMDN). Additionally, these Subsystems will be delivered via fifty-eight (58) LMR Sites dispersed across the Los Angeles County region spanning from Lancaster to San Dimas to Catalina Island.

Many users that will benefit from the LMR System fall under the umbrella of twenty-five (25) Member Agencies within the LA-RICS Authority including, but not limited to, the County of Los Angeles (County), and various cities such as the City of Inglewood, the City of Pasadena, as well as educational entities like the University of California Los Angeles (UCLA), and the Inglewood Unified School District. With the LMR System, these Member Agencies will be able to communicate with one another during emergencies, disasters, as well as planned events. The technical and operational requirements of the Authority's Member Agencies vary and to balance the telecommunication needs of its Member Agencies with the ability to operate on the LMR System, it is imperative that the Authority test portable radios to ensure compatibility with the LMR System and limit any potential harm to the LMR System.

As the Authority anticipates Final LMR System Acceptance in late 2023, Member Agencies will need to understand what portable radios are compatible for use on the LMR System. This Request for Information (RFI) allows the Authority to become acquainted with the Radios in the current marketplace that are compatible with the LMR System ahead of Final LMR System Acceptance.

1.2 Purpose

The Authority is issuing this RFI to obtain information from qualified and knowledgeable firms (Respondents) to understand the capabilities of the current telecommunications market for handheld Portable Two-Way Radios (Radios), along with their supporting ecosystems, to ensure safe compatibility with the Authority's LMR System.

The goal of this RFI is to obtain responses from multiple responsive, responsible firms and to test Radios **to determine if they are fully compatible and capable of operating on the LMR System infrastructure utilizing features currently installed and used by the Authority**. Submissions and information gathered in response to this RFI will be used by the Authority to test the compatibility of portable radios in the market for use on the LMR System and the Authority will share this information with its Member Agencies via a list of tested and approved Radios for use on the LMR System. This RFI is for informational and planning purposes only, there is no promise of future solicitations and/or business by the Authority and/or its Member Agencies.

Additionally, the Authority is seeking input from Respondents with experience and skills in developing public safety quality products, and for products and services that have, but are not limited to, the following capabilities:

- **Portable Radios** – A suitable portfolio of device types and characteristics for interoperability with the Authority's LMR System using the core frequencies.
- **Device Management** – The product support for remote management of portable radio application use including configuration, deployment, and program and firmware updates.
- **Policy Management** – Development, control and operations of the Authority's enterprise portable radio access, connectivity, local operational control and security policy.
- **Security Management** – The implementation and enforcement of the Authority's portable radio security, authentication and encryption requirements and policies.

As part of this RFI, Respondents understand and acknowledge the Authority will require sample Radios (inclusive of software, accessories, etc.) be submitted for testing for compatibility pursuant to the requirements and testing criteria set forth in Exhibit A (Portable Radio Requirements Matrix) and Exhibit B (Portable Radio Testing Criteria) to this RFI. **The Authority requires Respondents to provide, at no cost to the Authority, two (2) fully functional and compliant sample Radios (per Radio model) including all required cables, accessories and software necessary to allow programming and testing, with your firm's response to this RFI.** The Authority will return the Radios to the Respondent once

testing has been completed. However, Respondents should be aware that the Radios submitted may be damaged during the testing process. The Authority will not be liable or responsible for reimbursement of any costs for damaged equipment. Please refer to Section 3.6 (Portable Radios Required for Testing) of this RFI for specific Radio submission and Radio return information.

This RFI is issued solely for information and planning purposes. It does not constitute a competitive solicitation or a promise to issue a competitive solicitation in the future. However, the Authority reserves the right to use the information gathered in response to the RFI to develop future solicitations, whether competitive or sole-sourced, as appropriate. This RFI does not commit the Authority to contract for any services whatsoever. The Authority hereby accepts no obligation to accept or endorse any of the information provided in response to this RFI. The Authority hereby disclaims any intent, accepts no obligations and makes no commitment to solicit any goods or services related to this RFI. The Authority shall not be liable in any way or have any responsibility for any costs incurred in connection with the preparation, submittal, or presentation of any information, including any Radio demonstrations or technical assistance required as part of or in response to this RFI. Not responding to this RFI does not preclude participation in a future solicitation, if one is issued.

Responses to this RFI shall become the exclusive property of the Authority. Respondents should be aware that the information provided will be tested and analyzed and may appear in various reports, lists, and/or requests and may be subject to disclosure, as required or permitted under the California Public Records Act or otherwise by law, with the exception of those parts of each submission which meet the definition of "Trade Secret" and are plainly marked as "Trade Secret" or "Proprietary."

The Authority shall not, in any way, be liable or responsible for the disclosure of any such record, or any parts thereof, if disclosure is required or permitted under California Public Records Act or otherwise by law. A blanket statement of confidentiality or the marking of each page of the submission as confidential shall not be deemed sufficient notice of exception. Respondents must specifically label only those provisions of the submission, which are "Trade Secrets" or "Proprietary" in nature.

The Authority reserves the right, at its sole discretion, to invite any Respondents to this RFI to provide a non-competitive presentation and/or demonstration. The presentation/demonstration, if requested, is intended for information gathering purposes only as part of this RFI process. In addition, there may be a functionality demonstration and testing component administered by the Authority and its partners (i.e. Authority personnel, County of Los Angeles Sheriff's Department, County of Los Angeles Fire Department, the Internal Services Department, etc.) through a separate process. The Authority will coordinate such presentations and/or demonstrations with each Respondent separately, should the need exist, and will be based on the number of Radio models submitted.

In order for the Authority to be kept apprised of the current Radio marketplace and test Radios that may be compatible with the LMR System, this RFI will remain open on a continuous basis, until such time as the Authority, in its sole discretion, deems it appropriate to close.

2.0 OVERVIEW OF RFI

2.1 RFI Composition

This RFI is composed of the following parts:

- **Introduction** – Provides information regarding the purpose of this RFI, the desired Radio information, and the relevant background information regarding the Authority's LMR System.
- **Overview of RFI** – Provides key information for Respondents such as RFI timetables, RFI contact information, and the process for submitting questions.
- **RFI Format and Instructions** – Contains instructions to Respondents for preparing and submitting responses to this RFI.
- **Exhibit A (Portable Radio Requirements Matrix)** – Contains the requirements and specifications each Radio must be compliant with.
- **Exhibit B (Portable Radio Testing Criteria)** – Contains the testing criteria and parameters each Radio will be demonstrated, inspected, analyzed, and tested against.

2.2 RFI Timetable

The following timetable is tentative for this RFI and is subject to change at the Authority's sole discretion. It should be noted that this RFI will remain open on a continuous basis until such time as the Authority, in its sole discretion, deems it appropriate to close. The timetable for the initial submission of RFI is as follows:

KEY EVENTS	DATE	TIME
Issuance of RFI	April 17, 2023	--
Optional RFI Conference (Section 2.6)	May 17, 2023	10:00 a.m.
Final Day to Submit Written Questions (Section 2.4)	May 22, 2023	5:00 p.m.
Initial RFI Responses Due (Section 2.5)	June 12, 2023	5:00 p.m.

2.3 Authority's RFI Point of Contact

All contacts and communications regarding this RFI or any matter relating thereto must be in writing and mailed or e-mailed to the Authority's point of contact (Authority's RFI Contact) at:

Melissa Saradpon
LA-RICS Project
2525 Corporate Place, Suite 100
Monterey Park, CA 91754
Phone No.: (323) 881-8289
melissa.saradpon@la-rics.org

2.4 Respondents' Questions

Respondents may submit written questions regarding this RFI by email to the Authority's RFI Contact described in Section 2.3 (Authority's RFI Point of Contact). All questions must be received by the date and time set forth in Section 2.2 (RFI Timetable) for the initial RFI submission date. As this RFI will remain open on a continuous basis, Respondents interested in submitting questions beyond the initial submission date, may do so directing questions to the Authority's RFI Contact in the manner prescribed in this Section 2.4.

To submit questions to the Authority, Respondents must include the following:

1. **Subject** – RFI NO. LA-RICS 018;
2. **Company Information** – Company name, contact name and title, business and mailing addresses, phone number and email address; and
3. **Reference** – Reference the section in the RFI that generated the question(s).

All questions, without identifying the submitting company, will be compiled with the appropriate answers and issued as an addendum to the RFI. Any addenda will be posted in the County of Los Angeles Bid Posting Website and will be distributed to those Respondents that participate in the RFI Conference. To ensure receipt of any addenda, Respondents should include a correct email address.

Potential Respondents should register in the County of Los Angeles' WebVen. The WebVen contains the Vendor's business profile and identifies the goods/services the business provides. Registration can be accomplished online via the internet by accessing the County's home page at <https://doingbusiness.lacounty.gov/>.

2.5 RFI Response Deadline

Each Respondent is solely responsible to ensure that the Authority receives its response to this RFI by the initial submission deadline as set forth in Section 2.2 (RFI Timetable) for the initial RFI response. Responses must be submitted to the Authority's RFI Contact set forth in Section 2.3 (Authority's RFI Point of Contact).

Respondents wishing to respond to this RFI and submit their Radios for testing after the initial RFI Response submission deadline may do so as long as this RFI remains open.

Each Respondent shall bear all risks of delays associated with any mode of delivery, including, without limitation, the United States Postal Service or any other delivery services. Responses submitted by facsimile or e-mail shall not be accepted.

Late submissions for the initial RFI response deadline will be considered at the sole discretion of the Authority. The Authority will not have a public opening or reading of RFI responses.

2.6 Optional RFI Conference

A non-mandatory RFI Conference will be conducted for potential Respondents. The RFI Conference is scheduled on the date and time set forth in Section 2.2 (RFI Timetable) at the following location:

**LA-RICS Project
2525 Corporate Place, Suite 200
Monterey Park, CA 91754
Large Conference Room**

Additionally, Respondents who are unable to attend the conference in-person can join via teleconference via Microsoft Teams.

Link to access RFI Conference: [Click here to join the Microsoft Teams Meeting.](#)

A sign-in sheet will be provided for Respondents participating the conference in-person and via teleconference.

While attendance to the RFI Conference is optional, it is highly encouraged and recommended that Respondents participate. This Conference will provide valuable information on the Authority's purpose and intent for issuing this RFI.

The Authority reserves the right to reschedule the RFI Conference to a different meeting platform, location, day, and/or time. If the RFI Conference is rescheduled, the Authority will issue an Addendum to this RFI indicating the revised meeting platform, location, day, and/or time.

3.0 RFI FORMAT AND INSTRUCTIONS

3.1 Response Format

In order to facilitate the analysis of responses to this RFI and to appropriately test Radios submitted, Respondents shall prepare submissions in accordance with the instructions outlined below. Responses shall be prepared as simply as possible and provide a straightforward, concise description of the Respondent's ability to submit information regarding Radios.

The content and sequence of information must be as follows and identified accordingly in your RFI response:

- Cover Page
- Corporate Overview / Executive Summary
- Exhibits:
 - ✓ Exhibit A (Portable Radio Requirements Matrix)
 - ✓ Exhibit B (Portable Radio Testing Criteria)
- Additional Information

3.2 Cover Page

The cover page should provide, at a minimum, the following information:

- Company Name
- RFI Title: Response for Portable Radios
- RFI No.: RFI No. LA-RICS 018
- Prepared for: Los Angeles Regional Interoperable Communications System
- Due Date and Time as set forth in Section 2.2 (RFI Timetable)
- Contacts: Executive Contacts
- Firm / Company Address
- Contact Email Address
- Contact Phone Number

3.3 Corporate Overview and Executive Summary

Provide a brief (no more than two pages) overview of the company history, its core markets, client base, and an overview of the Company's RFI response.

3.4 Exhibit A (Portable Radio Requirements Matrix)

The Portable Radio Requirements Matrix is requesting information that is generally applicable to all portable radio types. Respondents are instructed to respond to each line item for each Radio, including the corresponding cost, offered by the Respondent and submitted in response to this RFI. Respondents need to submit a separate Exhibit A (Portable Radio Requirements Matrix) for **EACH PORTABLE RADIO MODEL** it is submitting in response to this RFI.

Where the Respondent believes that the requirement or question does not apply to a particular Radio offered by the Respondent, "Not/Applicable" should be placed in the "Response" field. Two (2) columns are provided for Respondent feedback and other information.

The "Comply" column has two purposes. First, the Authority identified certain requirements as "Mandatory" in red text to indicate that the line item is a mandatory minimum requirement for a Radio for use on the LMR System. If "Mandatory" is NOT indicated in a particular line item, that functionality and/or feature is NOT Mandatory. In addition, for all the questions, Respondents shall provide a "yes" or "no" response in that "Comply" column regarding the question posed for that row in the matrix.

The "Response" column shall expand the "yes" or "no" response in the "Comply" column providing clear yet concise background information. Additional specific instructions are provided in the Exhibit that will aid Respondents in describing how their Radios meet the requirements.

Each Exhibit A (Portable Radio Requirements Matrix) response shall be provided in a separate electronic file (one each in PDF and Word versions). Each file shall include the following elements in its title:

- LA-RICS Portable Radio RFI Exhibit A (Portable Radio Requirements Matrix) Response
- The Respondent's organization name
- The Radio name and model number

3.5 Exhibit B (Portable Radio Testing Criteria)

Exhibit B (Portable Radio Testing Criteria) sets forth criteria and methodology the Authority will use to test the Radio(s) Respondents submit in response to this RFI. This Exhibit informs the Respondent on the criteria and manner in which the Radio(s) being submitted will be tested to determine if the Respondent's product(s) products are compliant for use on the LMR System. The methods the Authority will use to conduct its testing is as follows:

- Compliance Certificate Inspection
- Demonstration
- Demonstration Analysis
- Inspection
- Testing / Analysis
- Respondent Declaration
- Information Only

3.6 Portable Radios Required for Testing

Respondents shall provide, at no cost to the Authority, two (2) fully functional and compliant samples **per Radio model** including all required cables, accessories,

and software necessary to allow programming and testing, **with your RFI response**. For example, if a Respondent is submitting two (2) different Radio models (Model A and Model B) for testing on the Authority's LMR System, then the Respondent should be submitting a total of four (4) sample Radios, two (2) of Radio Model A and two (2) of Model B.

As mentioned previously in this RFI, the Authority reserves the right, at its sole discretion, to invite any Respondents to provide a non-competitive presentation and/or demonstrations. Respondents may also be asked to participate in a functionality demonstration and testing component administered by the Authority and its partners (i.e. Authority personnel, County of Los Angeles Sheriff's Department, County of Los Angeles Fire Department, the Internal Services Department, etc.) through a separate process. The Authority will coordinate such presentations and/or demonstrations with each Respondent separately and will be based on the number of Radio models submitted. The Authority will not be liable or responsible for reimbursement of any costs associated with Respondents participating in presentations, demonstrations, and functionality demonstrations to test the Radios. Such costs shall be borne by the Respondents.

The Authority will return the Radios to the Respondent once testing has been completed. The Authority will contact each Respondent once testing has been completed to coordinate the return of the Radio(s) submitted in response to this RFI. Respondents shall provide a shipping tag with the Radios for the Authority to utilize when returning the Radios back to Respondents. Respondents should be aware that the Radios submitted for testing may be damaged during the testing process. The Authority will not be liable or responsible for reimbursement of any costs for damaged equipment.

3.7 Other Respondent Information

In addition to the specific information sought in the Exhibits, such as model information, features, functionality, cost, etc., Respondents are encouraged to provide additional information that will assist the Authority in providing an avenue for public safety agencies to secure the appropriate Radios that meet their specific needs, while minimizing operational challenges, cost and complexity to the Authority. Should the Respondent have suggestions or recommendations for the Authority regarding these objectives, the Respondent is welcome to provide this additional information.

It is important to note that the end user agency's portable radio requirements may be more or less restrictive requirements than the Authority's requirements. These agencies may require specific features and functions that are unique to their agency. It is the Authority's intent to let its end users purchase their own Radios for use on the LMR System, however, the Authority requires minimum Radio requirements such that:

1. Will not harm the LMR System and ensure that the device will not harm the network.
2. Will meet the minimum performance requirements set forth in Exhibit A (Portable Radio Requirements Matrix) such that the operational performance of the LMR System is maintained.
3. Will be secure and will not present a security risk that could undermine the integrity of the LMR System.
4. Are otherwise compatible with the LMR System and the Authority-defined policies and procedures for commissioning Radios on the LMR System.

As a result, should the Respondent have any additional feedback with regards to these overarching objectives, such feedback shall be provided in this section of the RFI response.

3.8 Submission Instructions

This Section contains instructions to Respondents regarding how to prepare and submit its response. It is the sole responsibility of the Respondent to ensure that its response is complete. When responding, Respondents shall make sure that they have responded to all elements of the RFI. The RFI should be read carefully, giving consideration to all the requirements.

All responses, documents, and sample Radios submitted to the Authority in response to this RFI shall be clearly written in the English language. Inadequate, incomplete or otherwise non-responsive responses, as determined in the Authority's sole judgment, may not be reviewed.

The Respondent must submit their response to the Authority by no later than the date and time set forth in Section 2.2 (RFI Timetable) for the initial RFI response submission deadline.

Responses, including one (1) original, and one (1) printed copy, and one (1) electronic version in both Microsoft Word and Adobe PDF formats on a Universal Serial Bus (USB) drive should be delivered to the following:

**LA-RICS Project
2525 Corporate Place, Suite 100
Monterey Park, CA 91754
Attention: Melissa Saradpon
RFI No. LA-RICS 018**

Pursuant to Section 3.6 (Portable Radios Required for Testing), Respondents shall provide, at no cost to the Authority, **two (2)** fully functional and compliant samples **per Radio model** including all required cables, accessories, and software necessary to allow programming and testing, **with your RFI response.**

3.9 Authority Responsibility

This is a Request for Information (RFI) only. It is issued solely for information and planning purposes. It does not constitute a solicitation or a promise to issue a solicitation in the future. This RFI does not commit the Authority to contract for any supply or services whatsoever. The Authority will not pay for any information or administrative costs incurred in the response to this RFI, including but not limited to, preparing its response, Respondents participating in presentations, demonstrations, and functionality demonstrations to test the Radios.

The Authority will return the Radios to the Respondent once testing has been completed. The Authority will contact each Respondent once testing has been completed to coordinate the return of the Radio(s) submitted in response to this RFI.

PORTABLE RADIO REQUIREMENTS MATRIX

The Los Angeles Regional Interoperable Communications System (LA-RICS) Authority (Authority) seeks to generate a list of handheld portable and mobile two-way radios and associated accessories that are compatible with the LA-RICS Land Mobile Radio (LMR) System via this Request for Information (RFI). The resultant list may be used by any Member Agency to compare and procure Portable Radios that are compatible and operate on the LMR System. Pursuant to the RFI, the Authority will test any equipment and/or software submitted for compliance with any-and-all specifications included in this Exhibit A (Portable Radio Requirements Matrix) and Exhibit B (Portable Radio Testing Criteria).

This Exhibit A (Portable Radio Requirements Matrix) shall be completed and provided for EACH proposed Portable Radio (Radio) model. Please refer to Section 3.4 (Exhibit A – Portable Radio Requirements Matrix) of the RFI, which states in relevant part:

"Where the Respondent believes that the requirement or question does not apply to a particular Radio offered by the Respondent, "Not/Applicable" should be placed in the "Response" field. Two (2) columns are provided for Respondent feedback and other information.

The "Comply" column has two purposes. First, the Authority identified certain requirements as "Mandatory" in red text to indicate that the line item is a mandatory minimum requirement for a Radio for use on the LMR System. If "Mandatory" is NOT indicated in a particular line item, that functionality and/or feature is NOT Mandatory. In addition, for all the questions, Respondents shall provide a "yes" or "no" response in that "Comply" column regarding the question posed for that row in the matrix.

The "Response" column shall expand the "yes" or "no" response in the "Comply" column providing clear yet concise background information. Additional specific instructions are provided in the Exhibit that will aid Respondents in describing how their Radios meet the requirements."

For each Radio Type, choose among the following types (More than one option may apply to a single Radio):

RADIO INFORMATION	DESCRIPTION
Radio Name:	
Radio Manufacturer:	
Radio Model Number:	

RADIO INFORMATION	DESCRIPTION
Radio Type:	
Radio Class {1,3}:	
Radio Frequency/Bands Supported:	
Radio Firmware/Software Version:	
Radio Processor Type and Speed:	
Radio Storage Capacity (include volatile and non-volatile storage and memory):	
Radio Dimensions (in inches):	
Radio Weight (in ounces):	
Cost of Radio (Including all functionality/features the Radio complies with pursuant to this Compliance Matrix which was completed by the Respondent)	

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A. GENERAL REQUIREMENTS				
A.1	Respondent acknowledges the LA-RICS LMR System is an APCO Project 25 (P25) Phase 1 and Phase 2 compliant system that uses a Motorola Astro P25 Multi Zone Simulcast System 7.18. In addition, LA-RICS LMR System uses an Analog Voice Simulcast Radio System LMR for mutual aid and analog communications.			
A.2	Respondent who wishes to submit radios pursuant to this RFI has not been: a. Debarred within the last five (5) years by any public agency in the United States; b. Barred at any time, for reasons of national security, by any agency of the federal government, from bidding on a contract, participating in an auction for frequencies, or receiving a grant; or c. Identified at any time, as a security threat, or potential security threat, to the United States, by any agency in the federal government or any committee or subcommittee of Congress.	Mandatory		
A.3	All equipment being tested must be fully compatible and capable of operating on LMR System infrastructure as identified in this RFI.	Mandatory		

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A.4	<p>Respondents must provide, at no cost to the Authority, two (2) fully functional and compliant sample Radios including all required cables, accessories, and software necessary to allow programming and testing, with your RFI response.</p> <p>Note that equipment used for testing may be damaged in the process. The Authority will not be liable or responsible for reimbursement of any costs for damaged equipment. Sample Radios and accessories shall be submitted with its RFI Response to Melissa Saradpon pursuant to Section 3.8 (Submission Instructions) of the RFI.</p>	Mandatory		
A.5	<p>Sample Radios may be tested to ensure compliance with any-and-all specifications in this RFI. The Radio may be tested, and must be fully compliant, where applicable, with the following industry standards:</p>	Mandatory		
	a. APCO Project 25 (P25) Phase 1	Mandatory		
	b. APCO Project 25 (P25) Phase 2	Mandatory		
	c. U.S. Military MIL-STD-810G			
	d. IEC Standard 60529 IP68 Rating			
	e. TIA/EIA 603	Mandatory		
	f. TIA/EIA-102	Mandatory		
	g. FCC CFR Title 47 Part 80			
	h. FCC CFR Title 47 Part 90	Mandatory		
	i. FIPS PUB 197 AES Standard			
	j. FIPS PUB 140-3 Level 3 Standard			
	k. U.S. Dep. Of Defense WGS 84			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A.6	All technical and/or industry standards referenced in this document must refer to the most current version as defined by the relevant governing body of that standard as of the date of this RFI. All standards must be defined by the applicable governing body and should be obtained by the Respondent directly from the governing body's website or the most current documentation provided by the governing body.	Mandatory		
A.7	Radio must be certified compliant with the Department of Homeland Security (DHS) P25 Compliance Assessment Program (CAP). Respondent must provide the appropriate Declaration of Compliance and a Summary Test Report from a DHS P25 CAP accredited independent testing laboratory with this RFI response and demonstrate the following P25 operations work on the Radio:	Mandatory		
	a. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance (P25-CAB-CAI_TEST_REQ Section 2.1.1.1).	Mandatory		
	b. P25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance - FDMA (P25-CAB-CAI_TEST_REQ Section 2.1.1.2).	Mandatory		
	c. P25 Phase 2 Common Air Interface Trunked Subscriber Unit Performance - TDMA (P25-CAB-CAI_TEST_REQ Section 2.1.1.3).	Mandatory		
	d. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (Direct Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.1).	Mandatory		
	e. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (Repeat Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.2).	Mandatory		

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A.7 (cont'd)	f. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (FNE with DMC – Repeat Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.3).	Mandatory		
	g. P25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability - FDMA (P25-CAB-CAI_TEST_REQ Section 2.1.3.4).	Mandatory		
	h. P25 Phase 2 Common Air Interface Trunked Subscriber Unit Interoperability - TDMA (P25-CAB-CAI_TEST_REQ Section 2.1.3.5).	Mandatory		
	i. P25 Enhanced Full Radio Vocoder (IMBE and/or AMBE +2 TIA-102.BABG).	Mandatory		
	j. When optioned with P25 Advanced Encryption Standard (AES) 256 Encryption (TIA-102.CACD and CAB section 2.3.10 and FIPS PUB 197 Advanced Encryption Standard).	Mandatory, when optioned		
	k. LARICS System Registration and Site Affiliation (TIA-102.CACD Section 2.3.1 and 2.3.5).	Mandatory		
	l. LARICS Group Call (TIA-102.CACD and CAB Section 2.3.2).	Mandatory		
	m. LARICS iCall/Unit-to-Unit Call/Private Call (TIA-102.CACD and CAB Section 2.3.3).	Mandatory		
	n. LARICS Manual, Automatic and Site Adjacency Roaming (TIA-102.CACD).	Mandatory		
	o. LARICS Emergency Call Cancel and Alarm (TIA-102.CACD, CAB-C and CAB section 2.2.7, 2.3.7, 2.3.8 and 2.2.7).	Mandatory		
p. LARICS Radio Unit Inhibit, Disable and re-enable (TIA-102.CABC-C section 2.2.20).	Mandatory			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A.8	No prototype products will be accepted. All Radios must be commercially available for immediate shipment as configured and specified in this RFI. Future planned or upcoming releases information will be acceptable, but not evaluated.	Mandatory		
A.9	Identify if there is any detailed documentation specifying all changes and/or modifications to standard product catalog equipment for the purposes of complying with any specifications or standards referenced in this RFI.			
A.10	Respondents must provide the technical specifications for the Radio and affiliated frequency bands to include:	Mandatory		
	a. Frequency Bands	Mandatory		
	b. Operating temperature	Mandatory		
	c. Transmit power	Mandatory		
	d. Receiver Sensitivity (12db SINAD TIA/EIA 603)	Mandatory		
	e. Receiver Digital Sensitivity (TIA/EIA-102)	Mandatory		
	f. Selectivity (TIA/EIA 603)	Mandatory		
	g. Digital Adjacent Channel Rejection	Mandatory		
	h. Radio Channels and Zone capacity	Mandatory		
	i. Radio Dimensions and weight	Mandatory		
	j. Frequency stability	Mandatory		
	k. Power Consumption in Transmit and in standby	Mandatory		
	l. Analog Adjacent Channel Rejection	Mandatory		
	m. Spurious Emissions	Mandatory		
	n. Spurious Response	Mandatory		
	o. Intermodulation	Mandatory		
	p. Audio interfaces and levels	Mandatory		
	q. Transmit Modulation Limiting for 12.5KHz	Mandatory		
	r. Modulation Fidelity (TIA/EIA 102A)	Mandatory		
	s. Transmit Rise Time	Mandatory		
	t. Transmit low and high-power Rating	Mandatory		

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
A.10 (cont'd)	u. FM Hum and Noise for 12.5KHz channels	Mandatory		
	v. Transmit Radiated Emissions	Mandatory		
	w. Transmit Emissions Designator	Mandatory		
B. HARDWARE REQUIREMENTS				
B.1	Radio housing (case) is constructed with a high quality, high impact shock-resistant and long-wearing used by public safety operators.			
B.2	Identify if the Radio is in compliance with MIL-STD-810G standards for operation in extreme and rugged environments.			
B.3	Identify if the Radio is in compliance with IEC Standard 60529 IP68 Rating immersion standards or if the Radio is water resistant (i.e. rain and water hose spray resistant).			
B.4	Identify if the Radio is a sealed internal housing, allowing it to retain its immersion and/or water-resistant rating when the outer housing is cracked or otherwise compromised.			
B.5	Identify if the Radio display has high resistance to scratching and impact.			
B.6	Identify if Radio displays are clearly legible when viewed from multiple angles.			
B.7	Identify if the Radio has a display with multi-color backlighting on its front face.			
B.8	Identify if display panels comply with all terms of Sections C (ERGONOMICS), and F (USER INTERFACE) of this Exhibit A, contained herein.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
B.9	Identify if the Radio has an integrated GPS option and/or any external GPS attachments. The GPS antenna definition must show if it is internal or external to the Radio. If Radio has GPS, the Respondent must demonstrate how it transmits GPS location data via P25 conventional and/or digital trunking-enabled communications systems. If the Radio has GPS, the Radio must demonstrate how it operates within regards to Section K (GPS SPECIFICATIONS) of this Exhibit A, contained herein.			
B.10	Identify if the Radio has an integrated Bluetooth transceiver option within its internal hardware. If so, the Respondent must provide the Bluetooth transceiver information to include use near-field out-of-band pairing for secure operation and transfer of security keys.			
B.11	If the Radio has an integrated Bluetooth, the Respondent must demonstrate how the Radio automatically and quickly it connects to the Bluetooth accessories, without a requirement for menu navigation, once initial setup is completed.			
B.12	Identify if the Radio is equipped with a tri-axis accelerometer option, the Respondent must demonstrate if the sensor can be enabled or disabled through software the Respondent. The demonstration must include integrated support for "Man Down" functionality. "Man Down" must demonstrate if it's capable of triggering emergency notification and sending user ID and GPS location over the air to the LA-RICS LMR System.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
B.13	Identify if the Radio has a remote speaker and/or microphone connector. If so, the Respondent must demonstrate how to secure and latch the assembly so it cannot be removed inadvertently. The Respondent must identify if it is equipped with a secondary fastener to secure the remote speaker-microphone.			
B.14	Identify if the Radio has options for a desktop base station, vehicle chargers, and desktop chargers. The Respondent must demonstrate how they are used and how they operate. The Respondent must demonstrate if they seat correctly and effortlessly within an appropriate desktop base station, desktop charger (120VAC) and vehicle charger (12VDC) with smart battery charging support.			
B.15	The Respondent must demonstrate what the programming template is supported by and its capabilities. (e.g. the Radio is capable of supporting a single unified programming template of no less than 3,000 combined frequencies/channels/talkgroups.).	Mandatory		
B.16	Radio hardware must be capable of operation on Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), and APCO Common Air Interface (CAI) enabled systems. Radio must be fully compatible with P25 Phase 1 and Phase 2 operation. Identify if Phase 2 is an option or standard feature.	Mandatory		
B.17	Identify if the Radio has options to support 9600 baud P25 data messaging with any pre-defined data messages for a canned response. The Respondent will define their operational parameters and demonstrate how they are used.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
C. ERGONOMICS				
C.1	The Respondent will identify if the Radio's front face has a multi-color LCD display and define its operational perimeters (e.g. supports no less than four (4) lines and no less than fourteen (14) alphanumeric characters per line in addition to two (2) lines of notification icons. The front display is capable of visually notifying users of incoming calls, potential emergencies, and system events such as low battery, out-of-range).			
C.2	Identify if the Radio has options to support a back-lit front face with an alphanumeric keypad compatible and suitable for use with text messaging, channel searching, and soft key/interface operation.			
C.3	Identify where the Radio's Push-To-Talk (PTT) button is located on the Radio.			
C.4	Identify if the Radio and/or handset has an option for programmable buttons. Identify if these buttons are capable of being programmed with the following features at a minimum: squelch, keypad lock/unlock, and scan nuisance/delete.			
C.5	Radio must be equipped with a programmable talk-around/repeat-direct switch which must be easily accessible.	Mandatory		
C.6	Identify if the Radio has an internal microphone on both the front and rear panel. The Respondent will demonstrate that both microphones transmit audio with the same clarity and volume regardless of the Radio's orientation to the user.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
C.7	Respondent must identify if the Radio top panel is equipped with, all of the following:	Mandatory		
	a. Power/volume knob			
	b. Channel selector knob			
	c. A multifunction programmable switch with no less than three (3) positions			
	d. A programmable concentric switch with a minimum of two (2) positions			
	e. Multi-color backlit top display panel			
C.8	Demonstrate if the top panel display can clearly identify emergency activation button by changing the display color.			
C.9	Identify if the Radio emergency activation button is programmable with multifunction support.			
C.10	Demonstrate if the top panel knobs, buttons and switches are individually identifiable by feel. Respondent will identify these traits such as knob size, shape and texture that allow the user to identify a function by its feel.			
C.11	Demonstrate how many channels/frequencies are accessible from the top panel channel selector knob.			
C.12	Identify if the Radio top-mounted display panel offers:			
	a. User-selectable display			
	b. Programmable backlight with color selections (i.e., green, red, yellow/amber)			
	c. Line of text with alphanumeric characters capable of zone/channel information and visual notifications of incoming calls, potential emergencies, and system events (e.g., battery indicator, P25 signal strength)			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
D. TRANSMISSION AND RECEPTION				
D.1	The Respondent must identify the number of Radio frequency bands the Radio is capable of operating on and identify the frequency band combination(s).	Mandatory		
	a. Single Band			
	i. VHF 136MHz – 174MHz			
	ii. UHF 380MHz – 520MHz			
	iii. 700 764-776MHz & 794-806MHz			
	iv. 800 806-825MHz & 851-870MHz			
	b. Dual Band			
	i. VHF 136MHz – 174MHz			
	ii. UHF 380MHz – 520MHz			
	iii. 700 764-776MHz & 794-806MHz			
	iv. 800 806-825MHz & 851-870MHz			
	c. All Bands			
D.2	Radio must be capable of operating on narrow (12.5 KHz) channel bandwidth during analog and digital modes, under conventional and trunked operation.	Mandatory		
D.3	Identify if the Radio is capable of operating on VHF and define minimum and maximum wattage (e.g. five (5) Watts maximum and one (1) Watt minimum transmit levels).			
D.4	Identify if the Radio is capable of UHF and define minimum and maximum wattage (e.g. four (4) Watts maximum and one (1) Watt minimum transmit levels).			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
D.5	Identify if the Radio is capable of operating on 700/800 and define minimum and maximum wattage (e.g. three (3) Watts maximum and one (1) Watt minimum transmit levels).			
D.6	Identify if the Radio is capable of operating on VHF. If so, identify the reception sensitivity under analog operation in the VHF band of at least 0.25 Uv measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.			
D.7	Identify if the Radio is capable of operating on UHF. If so, identify the reception sensitivity under analog operation in the UHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.			
D.8	Identify if the Radio is capable of operating on 700/800. If so, identify the reception sensitivity under analog operation in the 700/800 band of at least 0.25 uV measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.			
D.9	Identify if the Radio is capable of operating on VHF. If so, identify the reception sensitivity under digital operation in the VHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.			
D.10	Identify if the Radio is capable of operating on UHF. If so, identify the reception sensitivity under digital operation in the UHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
D.11	Identify if the Radio is capable of operating on 700/800. If so, identify the reception sensitivity under digital operation in the 700/800 band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.			
D.12	Identify if the Radio is capable of operating on VHF. If so, identify if the transceiver is compliant with FCC CFR Title 47 Part 80 for Maritime Services. If so, Respondent must submit certification of compliance with this RFI response.			
E. AUDIO SPECIFICATIONS				
E.1	Provide minimum and maximum audio output power in watts.	Mandatory		
E.2	Identify if Radio is equipped with a Digital Signal Processing (DSP) algorithm designed specifically for background noise reduction.			
E.3	Identify if Radio is capable of background noise cancellation. Background noise cancellation profiles must be user selectable.			
E.4	Identify if the Radio has an automatic gain control to automatically adjust volume level to compensate for differences in voice level and operating environment.			
F. USER INTERFACE				
F.1	Identify if the Radio allows for the creation of multiple user-selectable profiles for the customization of lighting options, programmable buttons, audio levels, tones, and voice annunciations.			
F.2	Identify if the Radio alias can be user configurable via the keypad and if this feature allows for the unique identification of multiple users of the same Radio on different shifts.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
F.3	Identify if Radio is capable of an emergency activation feature. Identify if the emergency activation feature can be initiated by pressing a programmer-defined emergency button on the Radio. Activation of this feature must cause the Radio to immediately change to a pre-determined, programmer-defined analog or digital conventional channel or trunked talkgroup. The emergency transmission will use the configuration and parameters of the designated emergency channel or talkgroup, not the channel or mode of operation of the selected frequency/talkgroup prior to emergency trigger activation. The emergency activation feature must be fully functional regardless of current operating mode of the Radio (e.g., digital/analog, direct/repeated).			
F.4	Identify if Radio allows custom zone creation by the programming of designated blank zones, permitting user assignment of any accessible channel via the Radio keypad to meet each individual user's needs.			
F.5	Identify if the Radio is capable of customizable voice annunciations to provide audible announcement of, at a minimum, channel selection, direct/repeated mode, scan on/off, keypad lock on/off, and emergency activation.			
F.6	Identify if the Radio allows the user to search and select a channel or talkgroup by name with the alphanumeric keypad.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
F.7	Identify if the Radio offers a consolidated contact list and, if capable, identify how many contacts it can store with the ability to store at least five (5) different addresses (one (1) conventional unit ID, two (2) different trunking IDs, and two (2) different phone numbers) per contact. Identify and demonstrate that the contact information can be searched and retrieved.			
G. ENCRYPTION				
G.1	When optioned, Radio must be capable of supporting both software and hardware based multi-key encryption for digital communications.	Mandatory, when optioned		
G.2	Identify if the Radio meets or exceed FIPS PUB 140-2 Level 3 standards for tamper-proofing and physical security of the encryption module. If certified, the Respondent must provide certification of compliance from a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory with this RFI response.			
G.3	When optioned, Radio must be equipped with AES-256 encryption in accordance with FIPS PUB 197 Advanced Encryption Standard.	Mandatory, when optioned		
G.4	Identify if the Radio supports Over-The-Air Rekeying (OTAR) in accordance with TIA-102 APCO P25 standards for OTAR to allow remote refresh or replacement of encryption keys.			
G.5	Identify if the Radio allows a user-initiated OTAR keyset changeover command (e.g. allowing the user to initiate an OTAR on a Radio which has not yet received updated encryption keys).			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
G.6	Identify if the Radio is capable of the key-lost-key function to allow the user to request a new key in the event that the Unique Key Encryption Key (UKEK) has been lost.			
G.7	Identify if the Radio is capable of being configured for infinite UKEK retention.			
G.8	Identify if the Radio is capable of being configured for infinite Traffic Encryption Key (TEK) retention.			
G.9	Identify if the Radio supports P25 TIA 102.AACE Link Layer Radio authentication to prevent unauthorized cloned Radios from using the system.			
G.10	Identify if the Radio supports encrypted Radio to Radio packet data transmission and reception in accordance with FIPS PUB 197 Advanced Encryption Standard.			
H. SOFTWARE				
H.1	Radio must comply with all TIA-102 APCO P25 standards for voice and data transmission on trunking and digital systems.	Mandatory		
H.2	Radio must be compliant with P25 standard failsoft mode on the LA-RICS LMR System in the event of system component failure or degradation, without user intervention.	Mandatory		
H.3	Identify if the Radio supports user aliases and identify if they can be remotely updated.			
I. PROGRAMMING				
I.1	Identify if the programming software and Radio management software is capable of remote Radio management programming software.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
1.2	All applicable programming and Radio management software must be provided with an enterprise-wide license, allowing unrestricted and unlimited use by the agency for the full deployment lifecycle of the Radios.	Mandatory		
1.3	All applicable programming and Radio management software updates, including, but not limited to, programming interface, firmware updates, and any hotfixes must be made available by the Radio manufacturer for direct, unrestricted download to all agency's programming computers via the internet 24/7 at no additional cost to the Authority and/or agency. All updates must be made available in this way for the full deployment lifecycle of the Radio.	Mandatory		
1.4	Identify if the Radio's integrated programming and Radio management software can manage Radio templates or profiles in a database that can track each individual configuration file on a per-Radio basis.			
1.5	Identify if the Radio's integrated programming and Radio management software can allow for scheduling of updates, and allow for database reporting features, including system-generated reports on the completion status of individual Radio updates.			
1.6	All programming software must be installable and fully functional from any Authority-designated programming computer without requiring access to the internet.	Mandatory		
1.7	Identify if programming software is not restricted in by any Digital Rights Management (DRM) component irrespective of Internet connectivity.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
I.8	Programming software must be compatible with Microsoft Windows and support the latest versions to include Windows 10 and 11 (32 bit and 64 bit). Programming software must support future versions of Windows, as they become available, at no additional cost to the Authority and/or agency.	Mandatory		
I.9	Identify if the Radio's programming software allows the option to program Radios via Wi-Fi or the traditional wired direct connection method.			
I.10	Identify if programming software has an interface that can be loaded on a remote computer to allow direct connection to a PC via cable, and full programming functionality over the secure landline network.			
I.11	Identify if the Radio can be pre-configured by the Respondent to connect to a specified internal agency's Wi-Fi network and retrieve all initial programming, firmware, and setup files upon initial power up.			
I.12	Identify if the Radio can use Dynamic Host Configuration Protocol (DHCP) for Internet Protocol (IP) connections.			
I.13	Identify if the Radio programming software uses a hardware-based security key program for the Radios on LA-RICS LMR System.			
I.14	If a programming hardware-based security is required, the Respondent must provide software allowing the Authority and/or agency the ability to generate additional hardware-based security keys as needed at no additional charge.			
I.15	Programming software must be capable of managing multiple Radio templates or profiles which store Radio firmware, channel, talkgroup, and other individual Radio configuration information.	Mandatory		

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
I.16	Identify if the Radio programming software is capable of reading and copying Radio templates or profiles to new templates or profiles via "drag and drop" GUI functionality.			
I.17	Identify if programming software allows a template or profile to be shareable across multiple Radios and any changes to the template must be automatically applied to all affected Radios.			
I.18	Identify if the Radio programming software is capable of batch programming Radios simultaneously per programming client. Identify if the Radio programming software is capable of updates to Radio firmware, talkgroups, channels, and configuration data.			
I.19	Identify if the Radio programming software can allow the flexibility of scheduling batch programming and identify the minimum and maximum Radios per programming client. Identify if the Radio programming software allows scheduled batch programming over wireless batches in succession with no delays or incompatibilities with the LA-RICS LMR System or agency's private network WiFi.			
I.20	All Radios being programming via WiFi and/or all Radios being programmed via wireless systems must not interfere with LA-RICS LMR trunked systems operations.	Mandatory		
I.21	Identify if a Radio being programmed over wireless system can be done with no user intervention and with no key or button manipulation required on the Radio, OR requires user intervention (button press acknowledgement) to complete the programming. Identify if both options are available to the Radio programmer and if each is selectable on a case-by-case basis.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
I.22	Identify if a Radio being programmed is capable of receiving Respondent firmware updates over the wireless system, and if the firmware file is fully downloaded and assembled, the Radio allows the option of prompting the user to install firmware, OR auto-installing firmware updates with no user intervention. Identify if both options are available to the Radio programmer and if each is selectable on a case-by-case basis.			
I.23	Identify if the Radio has programmable buttons on the Radio and if they are capable of being programmed remotely via wireless system.			
I.24	Identify if the Radio has programmable management software that is capable of communicating with the Radios over USB, Wi-Fi, and the wireless system using Radio's serial numbers.			
I.25	Identify if the Radio programming and management software database allows multiple programming clients to access the database simultaneously.			
I.26	Respondent must provide a licensed and fully functional sample copy of all Radio programming and Radio management software for the purposes of testing the software compatibility with the existing LA-RICS software and LMR System and validation of functionality in accordance with these specifications.	Mandatory		
J. TEXT MESSAGING SERVICE				
J.1	Identify if the Radio can send and receive free-form alphanumeric individual and group text messages via the alphanumeric keypad.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
J.2	Identify if the Radio can send and receive predetermined (canned) text messages (e.g., "reroute", "arrived", "acknowledged").			
J.3	Identify if the Radio can send group messages simultaneously rather than serially (one at a time).			
J.4	Identify if the Radio is capable of automatically receiving system-generated group messages.			
J.5	Identify if the Radio can allow all message metadata and content.			
J.6	Identify if the Radio can provide an audible alert and notification icon to notify the user of a received text message or call alert page. Identify if this feature is programmer configurable and user-selectable.			
K. GPS SPECIFICATIONS				
K.1	Identify if the Radio can transmit and receive GPS coordinates over the LA-RICS LMR trunked system for mapping. If so, identify if the GPS features are in full compliance with the following industry standards:			
	a. TIA-102.BAJA-A			
	b. TIA-102.BAJB-A			
	c. TIA-102.BAJC-A			
	d. TIA-102.BAEA-C			
	e. TIA-102.BAJD			
	f. WGS 84			
K.2	Identify if the Radio is capable of allowing the transmission of GPS location services data on any or all of the following event triggers:			
	a. At a predetermined time interval			
	b. On each PTT activation			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
K.2 (cont'd)	c. On each PTT activation after a set time interval without GPS data			
	d. On emergency activation			
	e. On "Man-down" status			
	f. Periodically (short time interval)			
	g. When distance travelled exceeds a threshold since last check-in			
	h. In response to a query from the data host system (i.e., dispatcher terminal)			
	i. When crossing a host configurable boundary line j. When entering a host configurable geo-fence area			
K.3	Identify if the Radio is capable of supporting dynamic GPS polling, which must allow the Radio to provide current GPS location data to the dispatcher upon their request.			
K.4	Identify if the Radio is capable of supporting GPS packet data over both digital conventional and trunked P25 systems.			
K.5	Identify if the Radio is compatible with P25 GPS standards.			
K.6	Identify if the Radio can support geo-fencing for automatic talkgroup assignment and/or system steering. Identify if geo-fencing can be configurable by the dispatcher to allow the alteration of geo-fencing assignments to deployed Radios remotely.			
K.7	Identify if geo-fencing functionality is offered by programmable notifications, display color changes, and voice announcement triggers.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
L. ANALOG SIGNALING FORMAT				
L.1	Identify if Radio is fully capable of operating with the MDC-1200 analog signaling format. Identify if Radio is capable of encoding and decoding MDC-1200 signaling, including emergency signaling.			
L.2	Identify if Radio is capable of muting the received MDC-1200 signaling burst to prevent the tone being audible to the user.			
L.3	Identify if the Radio is capable of supporting MDC-1200 enhanced ID range. (e.g. Radio must support a five-digit decimal unit ID up to and including 65,534).			
L.4	Identify if the programming software is capable of allowing MDC ID to be entered in either decimal or hexadecimal format.			
L.5	Identify if the Radio programming software can support multiple (no fewer than five [5]) independent MDC-1200 configurations/profiles. Identify if each individual MDC-1200 configuration/profile offers the following options at a minimum:			
	a. MDC burst at key up or de-key			
	b. Configurable delay at MDC burst send			
	c. PTT ID sidetone on/off			
	d. PTT ID sidetone short/long			
	e. MDC system and acknowledge pretime			
	f. Repeater access pretime			
	g. Radio inhibit			
	h. Radio check			
	i. Canned message via MDC			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
L.5 (cont'd)	j. User ability to create an alias for MDC ID (e.g. the user can enable/disable the ID via programming software or front panel)			
M. BATTERIES				
M.1	Each Radio must be provided with two (2) Original Equipment Manufacturer (OEM) produced lithium-ion or lithium-polymer chemistry batteries. The included batteries must be rated at a minimum capacity and include batteries for an OEM high capacity.	Mandatory		
M.2	Identify if the battery assembly meets MIL-STD-810F standards for operation in extreme and rugged environments.			
M.3	Respondent must provide certification with this RFI response of the batteries operating temperature range (e.g., -30°C to +50°C).	Mandatory		
M.4	Respondent must provide certification with this RFI response of the battery's relative humidity properties (e.g., operates at 90% at +50°C for a minimum of eight (8) hours).	Mandatory		
M.5	Identify if the battery has an electrical short prevention mechanism for all charging contacts that remain visible while the battery is attached to the Radio.			
M.6	Identify if the battery includes the following:			
	a. A one (1) year manufacturer's warranty from delivery date.			
	b. If the warranty covers all manufacturer's defects and/or deficiencies of construction, including premature cell degradation, in accordance with these specifications.			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
M.6 (cont'd)	c. If the battery maintains a charge of 85% or more of nominal capacity for the first year of use, and if not is it subject to warranty replacement.			
	d. If all warranty repairs and replacements, and all associated shipping costs are borne by the Respondent.			
M.7	Identify if the battery has an internal electronic circuitry to enable intelligent battery management.			
M.8	Identify if the battery management has the following features:			
	a. Capacity monitoring			
	b. Automatic reconditioning			
	c. Charging, discharging, and reconditioning history of the battery			
	d. Over-the-air battery monitoring to provide all above information			
M.9	Identify if the battery management that can utilize a single platform for intelligent battery management.			
M.10	Identify if the battery management is Intelligent capable of communicating with an OEM manufactured smart charger which is capable of reconditioning the battery as needed to maximize battery life.			
N. REQUIRED ACCESSORIES				
N.1	Each Radio must include a compatible OEM manufactured single slot battery charger with the following features:	Mandatory		
	a. Identify if Charger is compatible with other after-market batteries			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
N.1 (cont'd)	b. Identify if Charger is compatible with standard 120V AC power			
	c. Identify if Charger includes all required cords, cables, and power supplies			
	d. Identify if Charger has an access port for computerized remote battery management			
	e. Identify if Charger allows user-selectable charging for quick, standard, or reconditioning charging modes			
	f. Identify if Charger allows user-cancellation of reconditioning charge mode once started			
	g. Identify if Charger provides status indicators for the following: power on, charging, reconditioning, battery temperature, charger malfunction, and bad battery			
	h. Identify if Charger is capable of charging the battery while it is still attached to the Radio.			
	i. Identify if Charger is capable of charging the battery while it is detached from the Radio.			
	N.2	Each Radio must include a compatible OEM manufactured Remote Speaker/Microphone (RSM) with the following features:	Mandatory	
a. Identify if RSM is corded (not cordless) and if the cord is straight or coiled, or if both are available.				
b. Identify if RSM connector is compatible with the Radio without requiring any additional adapters				
c. Identify if RSM has a locking feature to prevent removal without a tool				
d. Identify if RSM is highly impact resistant				

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
N.2 (cont'd)	e. Identify if RSM PTT button is made of a resistant material (e.g. a ruggedized, polymer-like substance, and not be degraded by UV radiation or environmental factors under normal operation)			
	f. Identify if RSM PTT button is easily accessible and located on the left side panel when looking at the face of the RSM			
	g. Identify if RSM includes a replaceable rotating clip that allows attachment to a uniform epaulet			
	h. Identify if RSM includes a non-threaded 3.5mm earphone jack with attached cover			
N.3	Each Radio must include a compatible OEM manufactured antenna for the appropriate banded Radio (e.g. single or multi-band antenna) with the following features:	Mandatory		
	a. Antenna must support all frequencies and Radio ranges listed within this RFI			
	b. Antenna must be engineered for maximum performance on single or multi-band Radios in the VHF/UHF/700/800MHz & GPS Radio spectrums			
	c. Antenna connector must be compatible with the Radio without any additional adapters			
	d. Antenna sheathing must be ruggedized material			
	e. Antenna must not be rigid and must be the most flexible variety compatible for use in accordance with the above requirements			
N.4	Identify if each Radio includes a compatible OEM manufactured holster for carrying the Radio attached to a duty belt. Identify if the belt holster includes the following features:			

PORTABLE RADIO REQUIREMENTS MATRIX				
ITEM	DESCRIPTION	MANDATORY (If Indicated)	COMPLY "YES" OR "NO"	RESPONSE
N.4 (cont'd)	a. Identify if holster is constructed of leather or of a ruggedized, polymer-like substance			
	b. Identify if holster holds the Radio in place by friction fit without requiring a holding strap			
	c. Identify if holster is attachable to a belt by means of an included detachable belt clip			
	d. Identify if Radio side panel controls is easily accessible while in the holster			
	e. Identify if holster allows the Radio to be easily attached or removed without causing the RSM to loosen or detach from the Radio			
O. WARRANTY				
O.1	Identify if Radio includes a Warranty as follows:			
	a. One (1) year manufacturer's warranty.			
	b. Identify if Warranty covers all manufacturer's defects and/or deficiencies of construction.			
	c. Identify if all warranty repairs and replacements, and all associated shipping costs are borne by Respondent.			
O.2	Identify if Respondent provides as-needed direct telephone access to manufacturer's factory technical staff, without requiring intermediary (call center) technical support escalation, to address any emergency Radio issues or software bugs that may impact first responder safety. Identify if this support is provided, at a minimum, without restriction during manufacturer's normal business hours, with no additional costs.			

PORTABLE RADIO TESTING CRITERIA

The Los Angeles Regional Interoperable Communications System (LA-RICS) Authority (Authority) seeks to generate a list of handheld portable and mobile two-way radios and associated accessories that are compatible with the LA-RICS Land Mobile Radio (LMR) System via this Request for Information (RFI). The resultant list may be used by any Member Agency to compare and procure Portable Radios that are compatible and operate on the LMR System. Pursuant to the RFI, the Authority will test any equipment and/or software submitted for compliance with any-and-all specifications by using the testing criteria and parameters in this Exhibit B, Portable Radio Testing Criteria, whereby each Radio will be demonstrated, inspected, analyzed, and tested against.

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
A. GENERAL REQUIREMENTS		
A.1	Respondent acknowledges the LA-RICS LMR System is an APCO Project 25 (P25) Phase 1 and Phase 2 compliant system that uses a Motorola Astro P25 Multi Zone Simulcast System 7.18. In addition, LA-RICS LMR System uses an Analog Voice Simulcast Radio System LMR for mutual aid and analog communications.	Respondent Declaration
A.2	Respondent who wishes to submit radios pursuant to this RFI has not been: <ul style="list-style-type: none"> a. Debarred within the last five (5) years by any public agency in the United States; b. Barred at any time, for reasons of national security, by any agency of the federal government, from bidding on a contract, participating in an auction for frequencies, or receiving a grant; or c. Identified at any time, as a security threat, or potential security threat, to the United States, by any agency in the federal government or any committee or subcommittee of Congress. 	Respondent Declaration
A.3	All equipment being tested must be fully compatible and capable of operating on LMR System infrastructure as identified in this RFI.	Respondent Declaration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
A.4	Respondents must provide, at no cost to the Authority, two (2) fully functional and compliant sample Radios including all required cables, accessories, and software necessary to allow programming and testing, with your RFI response. Note that equipment used for testing may be damaged in the process. The Authority will not be liable or responsible for reimbursement of any costs for damaged equipment. Sample Radios and accessories shall be submitted with its RFI Response to Melissa Saradpon pursuant to Section 3.8 (Submission Instructions) of the RFI.	Inspection
A.5	Sample Radios may be tested to ensure compliance with any-and-all specifications in this RFI. The Radio may be tested, and must be fully compliant, where applicable, with the following industry standards:	
	a. APCO Project 25 (P25) Phase 1	Compliance Certificate Inspection
	b. APCO Project 25 (P25) Phase 2	Compliance Certificate Inspection
	c. U.S. Military MIL-STD-810G	Compliance Certificate Inspection
	d. IEC Standard 60529 IP68 Rating	Compliance Certificate Inspection
	e. TIA/EIA 603	Compliance Certificate Inspection
	f. TIA/EIA-102	Compliance Certificate Inspection
	g. FCC CFR Title 47 Part 80	Compliance Certificate Inspection
	h. FCC CFR Title 47 Part 90	Compliance Certificate Inspection
	i. FIPS PUB 197 AES Standard	Compliance Certificate Inspection
	j. FIPS PUB 140-3 Level 3 Standard	Compliance Certificate Inspection
	k. U.S. Dep. Of Defense WGS 84	Compliance Certificate Inspection

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
A.6	All technical and/or industry standards referenced in this document must refer to the most current version as defined by the relevant governing body of that standard as of the date of this RFI. All standards must be defined by the applicable governing body and should be obtained by the Respondent directly from the governing body's website or the most current documentation provided by the governing body.	Respondent Declaration
A.7	Radio must be certified compliant with the Department of Homeland Security (DHS) P25 Compliance Assessment Program (CAP). Respondent must provide the appropriate Declaration of Compliance and a Summary Test Report from a DHS P25 CAP accredited independent testing laboratory with this RFI response and demonstrate the following P25 operations work on the Radio:	
	a. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance (P25-CAB-CAI_TEST_REQ Section 2.1.1.1).	Compliance Certificate Inspection
	b. P25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance - FDMA (P25-CAB-CAI_TEST_REQ Section 2.1.1.2).	Compliance Certificate Inspection
	c. P25 Phase 2 Common Air Interface Trunked Subscriber Unit Performance - TDMA (P25-CAB-CAI_TEST_REQ Section 2.1.1.3).	Compliance Certificate Inspection
	d. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (Direct Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.1).	Compliance Certificate Inspection
	e. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (Repeat Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.2).	Compliance Certificate Inspection
	f. P25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability (FNE with DMC – Repeat Mode) (P25-CAB-CAI_TEST_REQ Section 2.1.3.3).	Compliance Certificate Inspection
	g. P25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability - FDMA (P25-CAB-CAI_TEST_REQ Section 2.1.3.4).	Compliance Certificate Inspection
	h. P25 Phase 2 Common Air Interface Trunked Subscriber Unit Interoperability - TDMA (P25-CAB-CAI_TEST_REQ Section 2.1.3.5).	Compliance Certificate Inspection
	i. P25 Enhanced Full Radio Vocoder (IMBE and/or AMBE +2 TIA-102.BABG).	Compliance Certificate Inspection
	j. When optioned with P25 Advanced Encryption Standard (AES) 256 Encryption (TIA-102.CACD and CAB section 2.3.10 and FIPS PUB 197 Advanced Encryption Standard).	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
A.7 (cont'd)	k. LARICS System Registration and Site Affiliation (TIA-102.CACD Section 2.3.1 and 2.3.5).	Demonstration
	l. LARICS Group Call (TIA-102.CACD and CAB Section 2.3.2).	Demonstration
	m. LARICS iCall/Unit-to-Unit Call/Private Call (TIA-102.CACD and CAB Section 2.3.3).	Demonstration
	n. LARICS Manual, Automatic and Site Adjacency Roaming (TIA-102.CACD).	Demonstration
	o. LARICS Emergency Call Cancel and Alarm (TIA-102.CACD, CAB-C and CAB section 2.2.7, 2.3.7, 2.3.8 and 2.2.7).	Demonstration
	p. LARICS Radio Unit Inhibit, Disable and re-enable (TIA-102.CABC-C section 2.2.20).	Demonstration
A.8	No prototype products will be accepted. All Radios must be commercially available for immediate shipment as configured and specified in this RFI. Future planned or upcoming releases information will be acceptable, but not evaluated.	Respondent Declaration
A.9	Identify if there is any detailed documentation specifying all changes and/or modifications to standard product catalog equipment for the purposes of complying with any specifications or standards referenced in this RFI.	Inspection
A.10	Respondents must provide the technical specifications for the Radio and affiliated frequency bands to include:	Inspection
	a. Frequency Bands	Demonstration
	b. Operating temperature	Demonstration
	c. Transmit power	Demonstration
	d. Receiver Sensitivity (12db SINAD TIA/EIA 603)	Demonstration
	e. Receiver Digital Sensitivity (TIA/EIA-102)	Demonstration
	f. Selectivity (TIA/EIA 603)	Demonstration
	g. Digital Adjacent Channel Rejection	Demonstration
h. Radio Channels and Zone capacity	Demonstration	

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
A.10 (cont'd)	i. Radio Dimensions and weight	Demonstration
	j. Frequency stability	Demonstration
	k. Power Consumption in Transmit and in standby	Demonstration
	l. Analog Adjacent Channel Rejection	Demonstration
	m. Spurious Emissions	Demonstration
	n. Spurious Response	Demonstration
	o. Intermodulation	Demonstration
	p. Audio interfaces and levels	Demonstration
	q. Transmit Modulation Limiting for 12.5KHz	Demonstration
	r. Modulation Fidelity (TIA/EIA 102A)	Demonstration
	s. Transmit Rise Time	Demonstration
	t. Transmit low and high-power Rating	Demonstration
	u. FM Hum and Noise for 12.5KHz channels	Demonstration
	v. Transmit Radiated Emissions	Demonstration
w. Transmit Emissions Designator	Demonstration	
B. HARDWARE REQUIREMENTS		
B.1	Radio housing (case) is constructed with a high quality, high impact shock-resistant and long-wearing used by public safety operators.	Inspection
B.2	Identify if the Radio is in compliance with MIL-STD-810G standards for operation in extreme and rugged environments.	Demonstration
B.3	Identify if the Radio is in compliance with IEC Standard 60529 IP68 Rating immersion standards or if the Radio is water resistant (i.e. rain and water hose spray resistant).	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
B.4	Identify if the Radio is a sealed internal housing, allowing it to retain its immersion and/or water-resistant rating when the outer housing is cracked or otherwise compromised.	Inspection
B.5	Identify if the Radio display has high resistance to scratching and impact.	Demonstration
B.6	Identify if Radio displays are clearly legible when viewed from multiple angles.	Inspection
B.7	Identify if the Radio has a display with multi-color backlighting on its front face.	Inspection
B.8	Identify if display panels comply with all terms of Sections C (ERGONOMICS), and F (USER INTERFACE) of Exhibit A, contained herein.	Inspection
B.9	Identify if the Radio has an integrated GPS option and/or any external GPS attachments. The GPS antenna definition must show if it is internal or external to the Radio. If Radio has GPS, the Respondent must demonstrate how it transmits GPS location data via P25 conventional and/or digital trunking-enabled communications systems. If the Radio has GPS, the Radio must demonstrate how it operates within regards to Section K (GPS SPECIFICATIONS) of this Exhibit A, contained herein.	Inspection / Testing / Analysis
B.10	Identify if the Radio has an integrated Bluetooth transceiver option within its internal hardware. If so, the Respondent must provide the Bluetooth transceiver information to include use near-field out-of-band pairing for secure operation and transfer of security keys.	Inspection / Demonstration / Analysis
B.11	If the Radio has an integrated Bluetooth, the Respondent must demonstrate how the Radio automatically and quickly it connects to the Bluetooth accessories, without a requirement for menu navigation, once initial setup is completed.	Demonstration
B.12	Identify if the Radio is equipped with a tri-axis accelerometer option, the Respondent must demonstrate if the sensor can be enabled or disabled through software the Respondent. The demonstration must include integrated support for "Man Down" functionality. "Man Down" must demonstrate if it's capable of triggering emergency notification and sending user ID and GPS location over the air to the LA-RICS LMR System.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
B.13	Identify if the Radio has a remote speaker and/or microphone connector. If so, the Respondent must demonstrate how to secure and latch the assembly so it cannot be removed inadvertently. The Respondent must identify if it is equipped with a secondary fastener to secure the remote speaker-microphone.	Inspection
B.14	Identify if the Radio has options for a desktop base station, vehicle chargers, and desktop chargers. The Respondent must demonstrate how they are used and how they operate. The Respondent must demonstrate if they seat correctly and effortlessly within an appropriate desktop base station, desktop charger (120VAC) and vehicle charger (12VDC) with smart battery charging support.	Demonstration
B.15	The Respondent must demonstrate what the programming template is supported by and its capabilities. (e.g. the Radio is capable of supporting a single unified programming template of no less than 3,000 combined frequencies/channels/talkgroups.)	Demonstration
B.16	Radio hardware must be capable of operation on Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), and APCO Common Air Interface (CAI) enabled systems. Radio must be fully compatible with P25 Phase 1 and Phase 2 operation. Identify if Phase 2 is an option or standard feature.	Demonstration
B.17	Identify if the Radio has options to support 9600 baud P25 data messaging with any pre-defined data messages for a canned Identify if the Radio has options to support 9600 baud P25 data messaging with any pre-defined data messages for a canned response. The Respondent will define their operational parameters and demonstrate how they are used.	Demonstration
C. ERGONOMICS		
C.1	The Respondent will identify if the Radio's front face has a multi-color LCD display and define its operational perimeters (e.g. supports no less than four (4) lines and no less than fourteen (14) alphanumeric characters per line in addition to two (2) lines of notification icons. The front display is capable of visually notifying users of incoming calls, potential emergencies, and system events such as low battery, out-of-range).	Inspection / Demonstration
C.2	Identify if the Radio has options to support a back-lit front face with an alphanumeric keypad compatible and suitable for use with text messaging, channel searching, and soft key/interface operation.	Inspection / Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
C.3	Identify where the Radio's Push-To-Talk (PTT) button is located on the Radio.	Inspection
C.4	Identify if the Radio and/or handset has an option for programmable buttons. Identify if these buttons are capable of being programmed with the following features at a minimum: squelch, keypad lock/unlock, and scan nuisance/delete.	Inspection / Demonstration
C.5	Radio must be equipped with a programmable talk-around/repeat-direct switch which must be easily accessible.	Demonstration
C.6	Identify if the Radio has an internal microphone on both the front and rear panel. The Respondent will demonstrate that both microphones transmit audio with the same clarity and volume regardless of the Radio's orientation to the user.	Inspection / Demonstration
C.7	Respondent must identify if the Radio top panel is equipped with, all of the following:	
	a. Power/volume knob	Inspection
	b. Channel selector knob	Inspection
	c. A multifunction programmable switch with no less than three (3) positions	Inspection / Demonstration
	d. A programmable concentric switch with a minimum of two (2) positions	Inspection
	e. Multi-color backlit top display panel	Demonstration
C.8	Demonstrate if the top panel display can clearly identify emergency activation button by changing the display color.	Inspection
C.9	Identify if the Radio emergency activation button is programmable with multifunction support.	Demonstration
C.10	Demonstrate if the top panel knobs, buttons and switches are individually identifiable by feel. Respondent will identify these traits such as knob size, shape and texture that allow the user to identify a function by its feel.	Inspection / Demonstration
C.11	Demonstrate how many channels/frequencies are accessible from the top panel channel selector knob.	Demonstration
C.12	Identify if the Radio top-mounted display panel offers:	

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
C.12 (cont'd)	a. User-selectable display	Demonstration
	b. Programmable backlight with color selections (i.e., green, red, yellow/amber)	Demonstration
	c. Line of text with alphanumeric characters capable of zone/channel information and visual notifications of incoming calls, potential emergencies, and system events (e.g., battery indicator, P25 signal strength).	Demonstration
D. TRANSMISSION AND RECEPTION		
D.1	The Respondent must identify the number of Radio frequency bands the Radio is capable of operating on and identify the frequency band combination(s).	
	a. Single Band	Testing / Analysis
	i. VHF 136MHz – 174MHz	Testing / Analysis
	ii. UHF 380MHz – 520MHz	Testing / Analysis
	iii. 700 764-776MHz & 794-806MHz	Testing / Analysis
	iv. 800 806-825MHz & 851-870MHz	Testing / Analysis
	b. Dual Band	Testing / Analysis
	i. VHF 136MHz – 174MHz	Testing / Analysis
	ii. UHF 380MHz – 520MHz	Testing / Analysis
	iii. 700 764-776MHz & 794-806MHz	Testing / Analysis
	iv. 800 806-825MHz & 851-870MHz	Testing / Analysis
	c. All Bands	Testing / Analysis
D.2	Radio must be capable of operating on narrow (12.5 KHz) channel bandwidth during analog and digital modes, under conventional and trunked operation.	Testing / Analysis
D.3	Identify if the Radio is capable of operating on VHF and define minimum and maximum wattage (e.g. five (5) Watts maximum and one (1) Watt minimum transmit levels).	Testing / Analysis

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
D.4	Identify if the Radio is capable of UHF and define minimum and maximum wattage (e.g. four (4) Watts maximum and one (1) Watt minimum transmit levels).	Testing / Analysis
D.5	Identify if the Radio is capable of operating on 700/800 and define minimum and maximum wattage (e.g. three (3) Watts maximum and one (1) Watt minimum transmit levels).	Testing / Analysis
D.6	Identify if the Radio is capable of operating on VHF. If so, identify the reception sensitivity under analog operation in the VHF band of at least 0.25 Uv measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.	Testing / Analysis
D.7	Identify if the Radio is capable of operating on UHF. If so, identify the reception sensitivity under analog operation in the UHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.	Testing / Analysis
D.8	Identify if the Radio is capable of operating on 700/800. If so, identify the reception sensitivity under analog operation in the 700/800 band of at least 0.25 uV measured conductively in accordance with TIA/EIA 603 standards under nominal conditions.	Testing / Analysis
D.9	Identify if the Radio is capable of operating on VHF. If so, identify the reception sensitivity under digital operation in the VHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.	Testing / Analysis
D.10	Identify if the Radio is capable of operating on UHF. If so, identify the reception sensitivity under digital operation in the UHF band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.	Testing / Analysis
D.11	Identify if the Radio is capable of operating on 700/800. If so, identify the reception sensitivity under digital operation in the 700/800 band of at least 0.25 uV measured conductively in accordance with TIA/EIA IS 102.CAAA standards under nominal conditions.	Testing / Analysis
D.12	Identify if the Radio is capable of operating on VHF. If so, identify if the transceiver is compliant with FCC CFR Title 47 Part 80 for Maritime Services. If so, Respondent must submit certification of compliance with this RFI response.	Testing / Analysis

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
E. AUDIO SPECIFICATIONS		
E.1	Provide minimum and maximum audio output power in watts.	Testing / Analysis
E.2	Identify if Radio is equipped with a Digital Signal Processing (DSP) algorithm designed specifically for background noise reduction.	Demonstration
E.3	Identify if Radio is capable of background noise cancellation. Background noise cancellation profiles must be user selectable.	Demonstration
E.4	Identify if the Radio has an automatic gain control to automatically adjust volume level to compensate for differences in voice level and operating environment.	Demonstration
F. USER INTERFACE		
F.1	Identify if the Radio allows for the creation of multiple user-selectable profiles for the customization of lighting options, programmable buttons, audio levels, tones, and voice annunciations.	Demonstration
F.2	Identify if the Radio alias can be user configurable via the keypad and if this feature allows for the unique identification of multiple users of the same Radio on different shifts.	Demonstration
F.3	Identify if Radio is capable of an emergency activation feature. Identify if the emergency activation feature can be initiated by pressing a programmer-defined emergency button on the Radio. Activation of this feature must cause the Radio to immediately change to a pre-determined, programmer-defined analog or digital conventional channel or trunked talkgroup. The emergency transmission will use the configuration and parameters of the designated emergency channel or talkgroup, not the channel or mode of operation of the selected frequency/talkgroup prior to emergency trigger activation. The emergency activation feature must be fully functional regardless of current operating mode of the Radio (e.g., digital/analog, direct/repeated).	Demonstration
F.4	Identify if Radio allows custom zone creation by the programming of designated blank zones, permitting user assignment of any accessible channel via the Radio keypad to meet each individual user's needs.	Demonstration
F.5	Identify if the Radio is capable of customizable voice annunciations to provide audible announcement of, at a minimum, channel selection, direct/repeated mode, scan on/off, keypad lock on/off, and emergency activation.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
F.6	Identify if the Radio allows the user to search and select a channel or talkgroup by name with the alphanumeric keypad.	Demonstration
F.7	Identify if the Radio offers a consolidated contact list and, if capable, identify how many contacts it can store with the ability to store at least five (5) different addresses (one (1) conventional unit ID, two (2) different trunking IDs, and two (2) different phone numbers) per contact. Identify and demonstrate that the contact information can be searched and retrieved.	Demonstration
G. ENCRYPTION		
G.1	When optioned, Radio must be capable of supporting both software and hardware based multi-key encryption for digital communications.	Demonstration
G.2	Identify if the Radio meets or exceed FIPS PUB 140-2 Level 3 standards for tamper-proofing and physical security of the encryption module. If certified, the Respondent must provide certification of compliance from a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory with this RFI response.	Compliance Certificate Inspection
G.3	When optioned, Radio must be equipped with AES-256 encryption in accordance with FIPS PUB 197 Advanced Encryption Standard.	Demonstration
G.4	Identify if the Radio supports Over-The-Air Rekeying (OTAR) in accordance with TIA-102 APCO P25 standards for OTAR to allow remote refresh or replacement of encryption keys.	Demonstration
G.5	Identify if the Radio allows a user-initiated OTAR keyset changeover command (e.g. allowing the user to initiate an OTAR on a Radio which has not yet received updated encryption keys).	Demonstration
G.6	Identify if the Radio is capable of the key-lost-key function to allow the user to request a new key in the event that the Unique Key Encryption Key (UKEK) has been lost.	Demonstration
G.7	Identify if the Radio is capable of being configured for infinite UKEK retention.	Demonstration
G.8	Identify if the Radio is capable of being configured for infinite Traffic Encryption Key (TEK) retention.	Demonstration
G.9	Identify if the Radio supports P25 TIA 102.AACE Link Layer Radio authentication to prevent unauthorized cloned Radios from using the system.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
G.10	Identify if the Radio supports encrypted Radio to Radio packet data transmission and reception in accordance with FIPS PUB 197 Advanced Encryption Standard.	Demonstration
H. SOFTWARE		
H.1	Radio must comply with all TIA-102 APCO P25 standards for voice and data transmission on trunking and digital systems.	Respondent Declaration
H.2	Radio must be compliant with P25 standard failsoft mode on the LA-RICS LMR System in the event of system component failure or degradation, without user intervention.	Demonstration
H.3	Identify if the Radio supports user aliases and identify if they can be remotely updated.	Demonstration
I. PROGRAMMING		
I.1	Identify if the programming software and Radio management software is capable of remote Radio management programming software.	Testing / Analysis
I.2	All applicable programming and Radio management software must be provided with an enterprise-wide license, allowing unrestricted and unlimited use by the agency for the full deployment lifecycle of the Radios.	Inspection
I.3	All applicable programming and Radio management software updates, including, but not limited to, programming interface, firmware updates, and any hotfixes must be made available by the Radio manufacturer for direct, unrestricted download to all agency's programming computers via the internet 24/7 at no additional cost to the Authority and/or agency. All updates must be made available in this way for the full deployment lifecycle of the Radio.	Inspection
I.4	Identify if the Radio's integrated programming and Radio management software can manage Radio templates or profiles in a database that can track each individual configuration file on a per-Radio basis.	Testing / Analysis
I.5	Identify if the Radio's integrated programming and Radio management software can allow for scheduling of updates, and allow for database reporting features, including system-generated reports on the completion status of individual Radio updates.	Testing / Analysis

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
I.6	All programming software must be installable and fully functional from any Authority-designated programming computer without requiring access to the internet.	Testing / Analysis
I.7	Identify if programming software is not restricted in by any Digital Rights Management (DRM) component irrespective of Internet connectivity.	Testing / Analysis
I.8	Programming software must be compatible with Microsoft Windows and support the latest versions to include Windows 10 and 11 (32 bit and 64 bit). Programming software must support future versions of Windows, as they become available, at no additional cost to the Authority and/or agency.	Testing / Analysis
I.9	Identify if the Radio's programming software allows the option to program Radios via Wi-Fi or the traditional wired direct connection method.	Demonstration
I.10	Identify if programming software has an interface that can be loaded on a remote computer to allow direct connection to a PC via cable, and full programming functionality over the secure landline network.	Demonstration
I.11	Identify if the Radio can be pre-configured by the Respondent to connect to a specified internal agency's Wi-Fi network and retrieve all initial programming, firmware, and setup files upon initial power up.	Demonstration
I.12	Identify if the Radio can use Dynamic Host Configuration Protocol (DHCP) for Internet Protocol (IP) connections.	Testing / Analysis
I.13	Identify if the Radio programming software uses a hardware-based security key program for the Radios on LA-RICS LMR System.	Testing / Analysis
I.14	If a programming hardware-based security is required, the Respondent must provide software allowing the Authority and/or agency the ability to generate additional hardware-based security keys as needed at no additional charge.	Testing / Analysis
I.15	Programming software must be capable of managing multiple Radio templates or profiles which store Radio firmware, channel, talkgroup, and other individual Radio configuration information.	Testing / Analysis

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
I.16	Identify if the Radio programming software is capable of reading and copying Radio templates or profiles to new templates or profiles via “drag and drop” GUI functionality.	Demonstration
I.17	Identify if programming software allows a template or profile to be shareable across multiple Radios and any changes to the template must be automatically applied to all affected Radios.	Testing / Analysis
I.18	Identify if the Radio programming software is capable of batch programming Radios simultaneously per programming client. Identify if the Radio programming software is capable of updates to Radio firmware, talkgroups, channels, and configuration data.	Testing / Analysis
I.19	Identify if the Radio programming software can allow the flexibility of scheduling batch programming and identify the minimum and maximum Radios per programming client. Identify if the Radio programming software allows scheduled batch programming over wireless batches in succession with no delays or incompatibilities with the LA-RICS LMR System or agency’s private network WiFi.	Testing / Analysis
I.20	All Radios being programming via WiFi and/or all Radios being programmed via wireless systems must not interfere with LA-RICS LMR trunked systems operations.	Testing / Analysis
I.21	Identify if a Radio being programmed over wireless system can be done with no user intervention and with no key or button manipulation required on the Radio, OR requires user intervention (button press acknowledgement) to complete the programming. Identify if both options are available to the Radio programmer and if each is selectable on a case-by-case basis.	Demonstration
I.22	Identify if a Radio being programmed is capable of receiving Respondent firmware updates over the wireless system, and if the firmware file is fully downloaded and assembled, the Radio allows the option of prompting the user to install firmware, OR auto-installing firmware updates with no user intervention. Identify if both options are available to the Radio programmer and if each is selectable on a case-by-case basis.	Demonstration
I.23	Identify if the Radio has programmable buttons on the Radio and if they are capable of being programmed remotely via wireless system.	Demonstration
I.24	Identify if the Radio has programmable management software that is capable of communicating with the Radios over USB, Wi-Fi, and the wireless system using Radio’s serial numbers.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
I.25	Identify if the Radio programming and management software database allows multiple programming clients to access the database simultaneously.	Demonstration
I.26	Respondent must provide a licensed and fully functional sample copy of all Radio programming and Radio management software for the purposes of testing the software compatibility with the existing LA-RICS software and LMR System and validation of functionality in accordance with these specifications.	Demonstration
J. TEXT MESSAGING SERVICE		
J.1	Identify if the Radio can send and receive free-form alphanumeric individual and group text messages via the alphanumeric keypad.	Demonstration
J.2	Identify if the Radio can send and receive predetermined (canned) text messages (e.g., "reroute", "arrived", "acknowledged").	Demonstration
J.3	Identify if the Radio can send group messages simultaneously rather than serially (one at a time).	Demonstration
J.4	Identify if the Radio is capable of automatically receiving system-generated group messages.	Demonstration
J.5	Identify if the Radio can allow all message metadata and content.	Demonstration
J.6	Identify if the Radio can provide an audible alert and notification icon to notify the user of a received text message or call alert page. Identify if this feature is programmer configurable and user-selectable.	Demonstration / Testing / Analysis
K. GPS SPECIFICATIONS		
K.1	Identify if the Radio can transmit and receive GPS coordinates over the LA-RICS LMR trunked system for mapping. If so, identify if the GPS features are in full compliance with the following industry standards:	
	a. TIA-102.BAJA-A	Compliance Certificate Inspection
	b. TIA-102.BAJB-A	Compliance Certificate Inspection
	c. TIA-102.BAJC-A	Compliance Certificate Inspection

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
K.1 (cont'd)	d. TIA-102.BAEA-C	Compliance Certificate Inspection
	e. TIA-102.BAJD	Compliance Certificate Inspection
	f. WGS 84	Compliance Certificate Inspection
K.2	Identify if the Radio is capable of allowing the transmission of GPS location services data on any or all of the following event triggers:	
	a. At a predetermined time interval	Compliance Certificate Inspection
	b. On each PTT activation	Compliance Certificate Inspection
	c. On each PTT activation after a set time interval without GPS data	Compliance Certificate Inspection
	d. On emergency activation	Compliance Certificate Inspection
	e. On "Man-down" status	Compliance Certificate Inspection
	f. Periodically (short time interval)	Compliance Certificate Inspection
	g. When distance travelled exceeds a threshold since last check-in	Compliance Certificate Inspection
	h. In response to a query from the data host system (i.e., dispatcher terminal)	Compliance Certificate Inspection
	i. When crossing a host configurable boundary line	Compliance Certificate Inspection
j. When entering a host configurable geo-fence area	Compliance Certificate Inspection	
K.3	Identify if the Radio is capable of supporting dynamic GPS polling, which must allow the Radio to provide current GPS location data to the dispatcher upon their request.	Compliance Certificate Inspection
K.4	Identify if the Radio is capable of supporting GPS packet data over both digital conventional and trunked P25 systems.	Compliance Certificate Inspection
K.5	Identify if the Radio is compatible with P25 GPS standards.	Compliance Certificate Inspection
K.6	Identify if the Radio can support geo-fencing for automatic talkgroup assignment and/or system steering. Identify if geo-fencing can be configurable by the dispatcher to allow the alteration of geo-fencing assignments to deployed Radios remotely.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
K.7	Identify if geo-fencing functionality is offered by programmable notifications, display color changes, and voice announcement triggers.	Demonstration
L. ANALOG SIGNALING FORMAT		
L.1	Identify if Radio is fully capable of operating with the MDC-1200 analog signaling format. Identify if Radio is capable of encoding and decoding MDC-1200 signaling, including emergency signaling.	Demonstration
L.2	Identify if Radio is capable of muting the received MDC-1200 signaling burst to prevent the tone being audible to the user.	Demonstration
L.3	Identify if the Radio is capable of supporting MDC-1200 enhanced ID range. (e.g. Radio must support a five-digit decimal unit ID up to and including 65,534).	Demonstration
L.4	Identify if the programming software is capable of allowing MDC ID to be entered in either decimal or hexadecimal format.	Testing / Analysis
L.5	Identify if the Radio programming software can support multiple (no fewer than five [5]) independent MDC-1200 configurations/profiles. Identify if each individual MDC-1200 configuration/profile offers the following options at a minimum:	Testing / Analysis
	a. MDC burst at key up or de-key	Testing / Analysis
	b. Configurable delay at MDC burst send	Testing / Analysis
	c. PTT ID sidetone on/off	Testing / Analysis
	d. PTT ID sidetone short/long	Testing / Analysis
	e. MDC system and acknowledge pretime	Testing / Analysis
	f. Repeater access pretime	Testing / Analysis
	g. Radio inhibit	Testing / Analysis
	h. Radio check	Testing / Analysis
	i. Canned message via MDC	Testing / Analysis

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
L.5 (cont'd)	j. User ability to create an alias for MDC ID (e.g. the user can enable/disable the ID via programming software or front panel)	Testing / Analysis
M. BATTERIES		
M.1	Each Radio must be provided with two (2) Original Equipment Manufacturer (OEM) produced lithium-ion or lithium-polymer chemistry batteries. The included batteries must be rated at a minimum capacity and include batteries for an OEM high capacity.	Inspection / Testing / Analysis
M.2	Identify if the battery assembly meets MIL-STD-810F standards for operation in extreme and rugged environments.	Demonstration
M.3	Respondent must provide certification with this RFI response of the batteries operating temperature range (e.g., -30°C to +50°C).	Compliance Certification Inspection
M.4	Respondent must provide certification with this RFI response of the battery's relative humidity properties (e.g., operates at 90% at +50°C for a minimum of eight (8) hours).	Compliance Certification Inspection
M.5	Identify if the battery has an electrical short prevention mechanism for all charging contacts that remain visible while the battery is attached to the Radio.	Testing / Analysis
M.6	Identify if the battery includes the following:	
	a. A one (1) year manufacturer's warranty from delivery date.	Inspection
	b. If the warranty covers all manufacturer's defects and/or deficiencies of construction, including premature cell degradation, in accordance with these specifications.	Inspection
	c. If the battery maintains a charge of 85% or more of nominal capacity for the first year of use, and if not is it subject to warranty replacement.	Compliance Certificate Inspection
	d. If all warranty repairs and replacements and all associated shipping costs are borne by the Respondent.	Information Only
M.7	Identify if the battery has an internal electronic circuitry to enable intelligent battery management.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
M.8	Identify if the battery management has the following features:	
	a. Capacity monitoring	Demonstration
	b. Automatic reconditioning	Demonstration
	c. Charging, discharging, and reconditioning history of the battery	Demonstration
	d. Over-the-air battery monitoring to provide all above information	Demonstration
M.9	Identify if the battery management that can utilize a single platform for intelligent battery management.	Demonstration
M.10	Identify if the battery management is Intelligent capable of communicating with an OEM manufactured smart charger which is capable of reconditioning the battery as needed to maximize battery life.	Demonstration
N. REQUIRED ACCESSORIES		
N.1	Each Radio must include a compatible OEM manufactured single slot battery charger with the following features:	Inspection
	a. Identify if Charger is compatible with other after-market batteries	Inspection
	b. Identify if Charger is compatible with standard 120V AC power	Demonstration
	c. Identify if Charger includes all required cords, cables, and power supplies	Inspection
	d. Identify if Charger has an access port for computerized remote battery management	Inspection
	e. Identify if Charger allows user-selectable charging for quick, standard, or reconditioning charging modes	Demonstration
	f. Identify if Charger allows user-cancellation of reconditioning charge mode once started	Demonstration
	g. Identify if Charger provides status indicators for the following: power on, charging, reconditioning, battery temperature, charger malfunction, and bad battery	Inspection
	h. Identify if Charger is capable of charging the battery while it is still attached to the Radio.	Demonstration

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
N.1 (cont'd)	i. Identify if Charger is capable of charging the battery while it is detached from the Radio.	Demonstration
N.2	Each Radio must include a compatible OEM manufactured Remote Speaker/Microphone (RSM) with the following features:	
	a. Identify if RSM is corded (not cordless) and if the cord is straight or coiled, or if both are available.	Inspection
	b. Identify if RSM connector is compatible with the Radio without requiring any additional adapters	Demonstration
	c. Identify if RSM has a locking feature to prevent removal without a tool	Inspection / Demonstration
	d. Identify if RSM is highly impact resistant	Demonstration
	e. Identify if RSM PTT button is made of a resistant material (e.g. a ruggedized, polymer-like substance, and not be degraded by UV radiation or environmental factors under normal operation)	Inspection
	f. Identify if RSM PTT button is easily accessible and located on the left side panel when looking at the face of the RSM	Inspection / Demonstration
	g. Identify if RSM includes a replaceable rotating clip that allows attachment to a uniform epaulet	Inspection / Demonstration
	h. Identify if RSM includes a non-threaded 3.5mm earphone jack with attached cover	Inspection
N.3	Each Radio must include a compatible OEM manufactured antenna for the appropriate banded Radio (e.g. single or multi-band antenna) with the following features:	
	a. Antenna must support all frequencies and Radio ranges listed within this RFI	Testing / Analysis
	b. Antenna must be engineered for maximum performance on single or multi-band Radios in the VHF/UHF/700/800MHz & GPS Radio spectrums	Testing / Analysis
	c. Antenna connector must be compatible with the Radio without any additional adapters	Inspection
	d. Antenna sheathing must be ruggedized material	Inspection

PORTABLE RADIO TESTING CRITERIA		
ITEM	DESCRIPTION	TEST METHOD
N.3 (cont'd)	e. Antenna must not be rigid and must be the most flexible variety compatible for use in accordance with the above requirements	Inspection
N.4	Identify if each Radio includes a compatible OEM manufactured holster for carrying the Radio attached to a duty belt. Identify if the belt holster includes the following features:	
	a. Identify if holster is constructed of leather or of a ruggedized, polymer-like substance	Inspection
	b. Identify if holster holds the Radio in place by friction fit without requiring a holding strap	Demonstration
	c. Identify if holster is attachable to a belt by means of an included detachable belt clip	Demonstration
	d. Identify if Radio side panel controls is easily accessible while in the holster	Demonstration
	e. Identify if holster allows the Radio to be easily attached or removed without causing the RSM to loosen or detach from the Radio	Demonstration
O. WARRANTY		
O.1	Identify if Radio includes a Warranty as follows:	
	a. One (1) year manufacturer's warranty.	Respondent Declaration
	b. Identify if Warranty covers all manufacturer's defects and/or deficiencies of construction.	Respondent Declaration
	c. Identify if all warranty repairs and replacements, and all associated shipping costs are borne by Respondent.	Respondent Declaration
O.2	Identify if Respondent provides as-needed direct telephone access to manufacturer's factory technical staff, without requiring intermediary (call center) technical support escalation, to address any emergency Radio issues or software bugs that may impact first responder safety. Identify if this support is provided, at a minimum, without restriction during manufacturer's normal business hours, with no additional costs.	Respondent Declaration