



Ministry of Home Affairs
Hazard Management
Cayman Islands



Request for Proposals
Supply of Public Safety Radio Communications Services
Central Tenders Committee
Tender CTC/15-16/HMCI/031

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1. About this Request for Proposals

- 1.1. This Request for Proposals (RFP) is issued by Hazard Management Cayman Islands department under the Ministry of Home Affairs of the Cayman Islands Government.
- 1.2. The Cayman Islands Government (CIG) intends to lease a public safety grade digital radio communications system.
- 1.3. The RFP will invite proposals for the supply of equipment and services for the public safety communications equipment needed for the project and supporting a variety of users and departments.
- 1.4. This RFP is issued in accordance with the Public Sector Finance Law and its Regulations and the procurement policy of the Ministry of Home Affairs. All submissions will be subject to the rules and regulations of the Central Tenders Committee, and interested vendors should familiarise themselves with these rules in order to ensure that submissions are compliant. Additional information is available at www.centraltenders.gov.ky
- 1.5. Any questions or queries relating to this RFP should be submitted by email to psrc@gov.ky. Responses will be provided to all persons registering an intention to submit an RFP and will be published with the issued documentation.

2. Instructions to Vendors

2.1. Receipt of RFP Documentation

1. Upon receipt of this Request for Proposals vendors will sign for receipt and acknowledge;
 - i. Receipt of the Request for Proposals for Procurement of Public Safety Radio Communications equipment and Services;
 - ii. That a response to this RFP shall be submitted by hand or courier to:

CTC Tender # CTC/15-16/HMCI/031 - Supply of Public Safety Radio Communications Services

The Secretary of the Central Tenders Committee
Central Tenders Committee
C/O Treasury Department
Government Office Administration Building
Grand Cayman KY1-9000, Cayman Islands

- iii. That a response to this RFP shall be submitted in triplicate in hard copy, and by single electronic copy on USB Drive;
 - iv. That a receipt must be signed and received upon submission of a response to this RFP;
 - v. That late applications received after the deadline will not be evaluated and will be returned to the applicant after the proposal opening meeting;
 - vi. That CIG is under no obligation to accept any proposals; and
 - vii. That CIG can cancel or reject any or all proposals at anytime.
2. In addition, the terms and conditions of this RFP must be complied with.

2.2. Timetable

1. Responses to this RFP should be received by the Central Tenders Committee no later than 17th May, 2016
2. Preparation of the RFP evaluation will commence alongside issuance of the RFP. It is expected that evaluation of proposals will take place in an anticipated 6 weeks. The successful vendor will enter into a contractual agreement for delivery of products and services, however actual delivery of such will commence no later than 180 Days.

2.3. Questions, Queries & Clarifications

1. Any questions, queries or requests for clarification should be submitted by email to **psrc@gov.ky** no later than 7 days prior to submission deadline. Any response provided will be copied to all vendors having received the tender documentation.

2.4. Pricing

1. Pricing submissions will follow the requirements of the Cost Proposal Section of this RFP.
2. CIG desires to enter into a lease agreement for a public safety radio communications service to replace the current Motorola Smart Zone 4.1 system. It is envisioned to accept turnkey service, built around a P25 technology, Tetra platform technology or another digital technology typically used for and that will support public safety and general communications needs of the Cayman Island Government across all three of the islands. The Lease would include the provision of both infrastructure and subscriber units.

2.5. Confidentiality

1. This document may contain information that is confidential and is provided for the sole purpose of soliciting submissions. Information provided may not be used in connection with any other matter.
2. In accordance with the obligations and duties placed upon by CIG by the Freedom of Information Law, 2007, all information submitted may be disclosed in response to a request made for its release. In no event will an FOI Request for Proposals obtained during the RFP process be made available until the conclusion of the RFP evaluation and selection process.
3. In respect of any information that the Vendor considers is commercially sensitive, the Vendor should;
 - i. identify the information which they consider commercial sensitive
 - ii. explain the implications of disclosure of such information
 - iii. provide an estimate of the period of time during which the vendor believes such information will remain commercially sensitive.
4. Any response on this matter should be submitted as an Appendix to the RFP response.
5. Where the vendor identifies information as commercially sensitive CIG will endeavor to maintain confidentiality. CIG may be required to disclose such information in accordance with the Freedom of Information law, 2007, regardless of a commercially sensitive designation, and offers no guarantee in this regard.

2.6. Compliance

1. Submissions must be presented in a format consistent with section 4 – Style of Submissions. Each paragraph or group of paragraphs should be clearly identified as being associated with a specific question. Failure to address any question will be interpreted as a non-compliant response.

Proposers must read and understand the terms and conditions under which this RFP is offered. The proposer's response to the Request for Proposals (RFP) signifies acceptance of the obligations and rights specified herein. The proposer and/or proposers to whom the contract is awarded must comply fully with Cayman Island ordinances and any applicable governmental law or regulation.

This RFP is issued in accordance with the Public Sector Finance Law and its Regulations and the procurement policy of the Ministry of Home Affairs. All submissions will be subject to the rules and regulations of the Central Tenders Committee, and interested vendors should familiarise themselves with these rules in order to ensure that submissions are compliant. Additional information is available at; <http://www.centraltenders.gov.ky/portal/page/portal/ctchome/policy>

Proposers must also be familiar with the Cayman Islands Procurement Policies. The Procurement Policy of the Ministry of Home Affairs is available at; <http://www.mha.gov.ky/wp-content/uploads/2013/07/Ministry-of-Home-Affairs-Procurement-Policy.pdf>

The Cayman Islands Planning Regulations & Laws may be found at; http://www.planning.gov.ky/HTML_BODY/FOI/FOI_Laws_And_Regs.htm

2.7. Non-Binding Document

1. No information contained in this RFP or in any communication made between CIG and the potential vendor in connection with this RFP shall be relied upon as constituting a contract, agreement, or representation that any contract shall be offered. CIG reserves the right to change without notice the basis of the competitive tendering process or to terminate it at any time. Under no circumstances shall CIG incur any liability in respect of this RFP or any supporting documentation.

2.8. Non Canvassing

1. Direct or non-direct canvassing of any Ministers, public sector employee or agent by any vendor, or any attempt to procure information from the same other than through the directed channel shall result in disqualification of the vendor from this procurement process.

2.9. Additional Information

1. CIG expressly reserves the right to require Vendors to provide additional information supplementing or clarifying any of the information provided in response to this RFP. CIG may seek independent technological and financial advice to validate information declared.

2.10 Purpose

These requirements encompass a **turnkey** goods and services project to provide the MoHA with a new digital radio system that meets current and future communication needs, both reliably and functionally. "Turnkey" is defined as providing all necessary design, hardware, software, interfaces, project management, documentation, installation/engineering, and training services that meet the RFP's requirements and performance standards for one price.

These requirements define key functional and technical aspects of a standards-based digital radio communications system utilizing state of the art digital radio technology that is acceptable for public safety use.

It is envisioned that other local agencies who are not presently on the MoHA radio system may want to utilize this new digital radio system. Pricing established in this procurement must be available to these agencies.

The MoHA recognizes the most important aspect of any public safety radio system is coverage reliability coupled with clearly understood audio quality delivered to users throughout their various working environments. The MoHA appreciates the need for Proposers to have sufficient flexibility in these requirements, such that proposed solutions can be technically optimized to meet MoHA desires, performance and coverage expectations defined in **Section 6.8.6**. The MoHA will allow the use of the existing radio sites on the Island; however, these requirements do not define the use of any specific antenna site placement, antenna system hardware, or minimum number of sites to achieve the desired coverage requirement. These requirements are designed to functionally describe MoHA expectations for performance and reliability, and the MoHA's desire for near and long term infrastructure compliance.

Interoperability between the MoHA first responders and other agencies is an area of concern, which is addressed by these specifications. Interoperability must be maintained.

3. Style of Submissions

3.1. Response to RFP

Submissions should provide a response to every item in the RFP. Exhibit E to this RFP must be completed and signed by an authorized representative of the Proposer

3.2. Multiple Proposals

Proposers may submit multiple proposals based on differing technology, each proposal will be evaluated on its own merit based on the evaluation criteria.

3.3. Response Format

Submissions should be presented in triplicate in hard copy, and electronically by CD or USB drive. It is mandated that responses follow the same format as the sections presented herein. Where substantive documentation supports a response this should be provided as an appendix to the submission.

3.4. Response Language

All responses must be answered in English.

3.5 Response Layout

For proper comparison and evaluation, the Ministry of Home Affairs (MoHA) **REQUIRES** that proposals be in the following format:

- a. Proposal Cover Sheet: See Section 6.1
- b. Proposer Cover Letter: See Section 6.2
- c. Proposer Questionnaire: See Section 6.3
- d. Project Team: See Section 6.4
- e. Project Management Methodology: See Section 6.5
- f. References: See Section 6.6
- g. General Characteristics of Proposer's Solution: See Section 6.7
- h. Requirements: See Section 6.8
- i. Exceptions to Functional Response: See Section 6.9
- j. Pricing: See Section 6.10
- k. Legal Agreements: See Section 6.11

3.6. Evaluation Criteria

The Specific Evaluation Criteria is shown in **Exhibit D**.

Each proposal will go through a stringent evaluation process based on the following criteria ranked in order of importance:

1. Guaranteed radio coverage and capacity
2. System features and functional requirements
3. System design and growth capabilities
4. System pricing for all equipment and services
5. Installation management, maintenance, and support
6. Proposer's qualifications and experience with similar projects

4. Existing Public Safety Radio System

The current infrastructure consists of a CIG owned and operated 800 MHz Motorola Smartzone 4.1 Radio System. There are three sites on Grand Cayman (Radio Cayman, Northward and East End) and one site on Cayman Brac and Little Cayman respectively.

Radio Cayman and Northward have 12 repeaters, Cayman Brac 5 repeaters, East End and Little Cayman 4 Repeaters.

The core is located adjacent to the Owen Roberts International Airport and is connected to the Grand Cayman Sites via microwave. There is also a microwave link between Cayman Brac and Little Cayman, however Cayman Brac is connected to Grand Cayman via a leased E1 over fiber, terminating at the George Town Fire Station and a microwave hop to the core.

There are presently two console sites. These are the 911 Centre located at Citrus Grove and the George Town Fire Station. 911 currently operate four Motorola Centracom Gold consoles and the Fire station two Motorola Centracom B&L Consoles. There is one system logging recorder.

Table One lists the location of all sites. **Table Two** lists the frequencies for each site. **Table Three** lists the current user radio inventory. **Exhibit C** to this RFP lists the inventory by user. All radios are manufactured by Motorola.

TABLE 1 - SITE LOCATIONS

Site Name	Address	Height	AMSL	Latitude	Longitude
Northward	48 Sheffield Drive, Bodden Town	260'	280'	19.2891	-81.2666
Frank Sound ¹	403 Frank Sound Road, North Side	100'	110'	19.3131	-81.1835
Cayman Brac	269 Ashton Reid Drive, The Bluff	200'	265'	19.2731	-79.7977
Radio Cayman	71B Elgin Avenue, George Town	200'	212'	19.2941	-81.3799
East End	623 Austin Conolly Drive, Gun Bay	100'	120'	19.3147	-81.0918
Little Cayman	204A Spot Bay Road, South Town	140'	150'	19.6671	-80.0844
Ofitel ²	399 Owen Roberts Drive, Airport	60'	70'	19.2979	-81.3526

1. Not in use. No equipment installed

2. Not available for new system

TABLE 2- SITE FREQUENCIES

Site -1 George- town	Channel	TX	RX	Site - 2 Northward	Channel	TX	RX
	1	865.3125	820.3125		1	865.813	820.813
	2	864.3125	819.3125		2	864.813	819.813
	3	863.3125	818.3125		3	863.813	818.813
	4	862.3125	817.3125		4	862.813	817.813
	5	861.3125	816.3125		5	861.813	816.813
	6	860.3125	815.3125		6	860.813	815.813
	7	859.3125	814.3125		7	859.813	814.813
	8	858.3125	813.3125		8	858.813	813.813
	9	857.3125	812.3125		9	857.813	812.813
	10	856.3125	811.3125		10	856.813	811.813
	11	855.3125	810.3125		11	855.813	810.813
12	854.3125	809.3125	12	854.813	809.813		
Site - 3 East End	Channel	TX	RX	Site - 5 Little Cayman	Channel	TX	RX
	1	865.5625	820.5625		1	859.0625	814.0625
	2	864.5625	819.5625		2	858.0625	813.0625
	3	863.5625	818.5625		3	857.0625	812.0625
	4	862.5625	817.5625	4	856.0625	811.0625	
Site - 4 Cayman Brac	Channel	TX	RX	Note: The central core of the existing system is currently housed at the OfTel site. This will no longer be available. The data room at the Government Administration Building may be available for the central core.			
	1	865.8125	820.8125				
	2	864.8125	819.8125				
	3	863.8125	818.8125				
	4	862.8125	817.8125				
	5	861.8125	816.8125				

TABLE 3 - RADIO INVENTORY

Radio Model	Quantity
APX Portable	40
APX Mobile	7
APX Console	8
APX Portable (On Order)	50
XTL 2500 Mobile	115
XTS 3000 Portable	183
Pro 7750 Portable	200
XTS 2250 A Portable	470
XTS 2250 B Portable	426

5. Site/System Visits

- 1. If requested, site visits to existing radio system sites will be arranged by the MoHA. Only one such visit will be scheduled.
- 2. Visits to the manufacturing or customer sites of hardware providers are not anticipated but may be arranged at a later date.

6. Proposal Submission

The proposer must explicitly adhere to the proposal format described below, addressing each section number as set forth in this document.

6.1 Proposal Cover Sheet

The following cover sheet information must be affixed to the submitted proposal.

In compliance with the above request for proposals, the undersigned offers and agrees, if this proposal be accepted, to furnish the herein described turnkey project including all equipment, items, and services in the time and at the price specified.

Name of Proposer _____

Name of Contact _____

Address _____

Phone _____

Fax _____

Email Address _____

Signature of Authorized Official _____

Printed Name _____

Title _____

Date _____

6.2 Proposer Cover Letter

Proposer should insert a brief letter of representation signed by a party that can legally bind the Proposer.

6.3 Proposer Questionnaire

Provide the following information about your company, experience and services. **Do not include extraneous advertising or publicity documents.** Respond to each item and provide supporting documentation and/or exhibits as requested or desired:

1. Provide a history of the company.
2. Describe professional staffing available for development, implementation, training, and support services.
3. Describe installed base of customers in the U.S. and Caribbean region.
4. Provide a statement of your company's financial stability, capacity and resources.
5. Address any litigation and any levied penalties that your company has been subject to within the past 5 years.
6. Provide a statement of the Proposer's adherence to the schedule and budget for the project.

6.4 Project Team

Although this is a lease program, proposers should include the qualifications, experience and credentials of the Proposer's key personnel. Provide contact information for the person who will serve as your firm's chief Point of Contact (POC) to the MoHA. Proposer must include an organizational chart of the project team.

6.5 Project Management Methodology

Describe your project management approach. Describe the phases of installation, major milestones and include a timeline. For each phase, describe your general responsibilities and those of the MoHA Staff. Describe your implementation services, with particular emphasis on planning, migration, and process change management.

6.6 References

Describe previous digital radio systems the Proposer has implemented for public entities similarly sized to that of the MoHA and of similar complexity to that requested in the last 36 months.

Provide at least three major project references. References should be from organizations that have used the vendor's program and systems. References from similar geographic environment agencies' fee for services or lease programs are preferred.

Include the following for each reference:

- Reference name and current contact information.
- Description of project including time to implement, any delays encountered, current status.

6.7 General Characteristics of Proposer's Solution

Provide a response to each of the following items.

1. Describe the proposed system and identify its advantages and any disadvantages.
2. Describe how the implementation will migrate the MoHA from its existing radio system to the new digital system.

6.8 Requirements

6.8.1 Minimum Operating Requirements

6.8.1.1 General

The minimum-operating requirements for each group using the MoHA's Radio System are described in this section. From this information, Proposers can better determine the scope of services needed to satisfy talk group structure requirements for their solution. The MoHA's radio users are divided into three major groups, Public Safety, General Government, and dispatch center.

6.8.1.2 Public Safety

The MoHA's Public Safety group consists of the Police, Fire Department, Emergency Medical Services and several departments of the Nation. There are requirements on a regular basis to support several mutual aid agencies. Each department has similar radio configurations and templates relevant to the user agencies.

6.8.1.3 General Government

General Government operations provide communications for CI departments. Individual departmental talkgroups are used to conduct daily operations.

6.8.1.4 Dispatch Centers

The 911 Centre is located at Citrus Grove and an alternate site at the Government Administration Building.

6.8.2 Identified User Requirements

6.8.2.1 General

The MoHA's radio users operate on a wide variety of non-P25 and P25-capable portable, mobile, and control station equipment. These include Motorola APX Series, XTS2250A, XTS 2250B, XTS3000, portables and APX, XTL2500, XTL5000 mobiles. There is also a quantity of analog only Motorola SmartZone radios. The Public Safety user group utilizes accessories such as shoulder microphones and earpieces.

Proposers must meet the minimum RFP requirements with any proposed solution.

6.8.2.2 Talk Paths

Each department utilizes individual talk group structures to maximize system efficiency. Additionally, departments share several groups of interoperability and special operations talk groups that allow seamless interoperability between agencies during special and mutual aid events.

Every Government radio has 12 common talkgroups for disasters. There is also a mutual aid channel between police, fire and EMS.

Proposers shall utilize talkgroup structures, that allow for a 40% future capacity growth factor, in the development of their proposed solution. MoHA monitors system loading and operational statistics. In most cases, the existing voice radio system is moderately loaded and has adequate capacity to accommodate short-term moderate increases in voice traffic.

6.8.2.3 Call Privacy

There is a need for privacy of communications. The new radio system shall include provisions for call privacy whereby identified users within the system can be excluded from certain talk groups or individual conversations. This provision must offer sufficient flexibility in that the desirable features of monitoring can be retained, while permitting privacy to conversations that are potentially confidential. This provision must also include the ability of third party equipment (i.e. the MoHA's Logging Recorder) to monitor call assignments transacted via the system's digital control channel.

The new system shall incorporate technical features preventing unauthorized listeners from monitoring any system calls. Ideally, the new system should inhibit the ability of non-system users from monitoring any type of voice transmissions as well as preventing such persons from monitoring those call assignments transacted via the system's digital control channel.

Proposers shall describe the scope and operation of such provisions inherent within their proposed solution that prevents these types of undesired radio monitoring.

6.8.2.4 Over the Air Programming

Proposers shall provide a wireless “Over-the-Air” radio-reprogramming feature whereby user radios (mobiles, portables, and control stations) will accept new talk group profiles, frequency sets, features, and radio functionality changes via the radio system’s infrastructure. This radio reprogramming feature shall utilize inherent voice/data capabilities of the radio system infrastructure whereby new programming/profile information can be transmitted to remotely located user radios, so long as they are located within the normal coverage service area and are powered on to receive the data payload. The completed programming transaction can be monitored at a central point.

This “Over-the-Air” reprogramming feature shall not overwrite existing radio personality/profile information until the complete data payload has been successfully and accurately received by the target radio unit.

Proposers shall provide a complete technical and functional description of its proposed “Over-the-Air” programming technology, identification of record management processes used to acknowledge and assure successful completion of reprogramming of field units. Describe hardware and/or equipment modifications necessary to support the “Over-the-Air” programming feature.

Note: Proposed costs for this feature shall be separated from infrastructure and user equipment pricing.

Proposers must explain these over the air programming capabilities and any limitations they present.

6.8.2.5 Logging Recorder

The MoHA presently utilizes a radio system logging recorder. This system records all radio, E9-1-1 trunks, and dispatch administrative phone traffic. The 911 service will be procuring a new logging recorder which will also be used for radio system logging. The proposed radio system must interface to this logging recorder for all voice channels of the radio system as well as RF channel information and time.

6.8.2.6 Other Requirements

Other minimum operational and functional equipment requirements shall include, but are not necessarily limited to:

- Digital working channels
- Automatic Unit Identification upon key up
- Emergency communications priority routing
- Centralized System Controller with Management Capabilities
- Multiple, Software-Controlled Talk Groups
- Priority Talk Path Scanning
- Lost/ Stolen Radio Inhibit
- User Priority Levels
- Dynamic user regrouping
- Automatic talkgroup switch on dispatch
- Talk Permit Tones

Proposers shall describe how its products comply with each of these features.

6.8.2.7 Public Safety

6.8.2.7.1 Encryption

Digital voice encryption is a required feature of the new system. The modes of encrypted digital voice operation desired are as follows:

1. Unit-to-unit, where conversations in an encrypted talkgroup are secure.
2. Console-to-unit, where conversations between the Dispatch Center and field units are secure.

Proposers shall describe, in detail, how each mode is accomplished. Some of the MoHA's radio units shall be capable of digital voice encryption. All units equipped with encryption shall be able to scan between and communicate on clear talk groups. All dispatch console positions shall be able to transmit and receive encrypted voice operations.

Encryption is required on Police/Customs/Immigration/Prison and EMT radios. A small number of radios (less than 50) require high level encryption such as AES.

The coverage range of the systems in encrypted mode shall equal the range of the system in clear mode. The encryption process shall not degrade the audio quality of the system. Encryption shall be available in trunked, conventional, and talk-around modes.

Multiple encryption keys shall be provided in the fixed equipment and the subscriber units. Proposers shall fully discuss the intended encryption scheme.

The system shall support Over-The-Air-Rekeying (OTAR) of mobile and portable radios.

6.8.2.7.2 Conventional Backup

The MoHA utilizes conventional backup repeaters at several of its radio system sites.

6.8.2.7.3 Simplex Operation

Subscriber units must have the ability to talk subscriber to subscriber with no infrastructure.

6.8.2.8 Backup Consoles

Proposers should provide optional remote dispatch console solutions. These solutions shall be in the form of a software application that runs on user's existing PC's. These consoles should be capable of operation over existing network connectivity or via RF linking.

Proposers shall provide this configuration as an optional cost and provide three contacts at other agencies where this technology is deployed.

6.8.2.9 Dispatch Centers

There are presently two console sites. These are the 911 Centre located at Citrus Grove and the George Town Fire Station. 911 currently operate four Motorola Centracom Gold consoles and the Fire station with two Motorola Centracom B&L Consoles.

The fire consoles are to be replaced with desktop radios and the 911 centre is to include 2 new dispatch consoles.

Proposers must maintain all existing features and functionality with its proposed new consoles. These include, but are not limited to talkgroup patching, unit id PTT display, announcement talkgroup (ATG) calls, talkgroup multi-selects, system-wide calls, access to all MoHA, talkgroups.

Dispatch console furniture is NOT being replaced.

6.8.3 Interoperability

Interoperability is an important factor for public safety users of the radio system. Interoperability must be maintained between the proposed radio system and any other systems currently interoperable.

There must be connectivity between the proposed radio system and conventional VHF marine channels.

Proposers shall describe and demonstrate how their solution will maintain and expand the MoHA's current interoperability environment.

6.8.4 Minimum Equipment Requirements

6.8.4.1 General

The radio system must be designed primarily for portable radio operation throughout the Cayman Islands. In building portable radio coverage problems are known to exist. Since general government services are provided inside of buildings all radios must meet the coverage specifications for public safety. Further complicating the design of portable-based systems are desired mechanical and ergonomic features, as summarized below:

- The radio package, itself, must be simple to operate and have a minimum of operator controls or feature selections.
- Radios contain a microphone, speaker, talk group selector, volume control, power switch, emergency button, and normal transmit push-to-talk button.
- User must be able to disable message authorization tones.
- The volume control must be fully adjustable from zero to maximum audio output level.
- Units must be operable, within the coverage requirements of **Section 6.8.6** using the smallest flexible antenna available.
- Radio unit battery packs must operate to provide sufficient power for a fully operational twelve-hour work period. A range of accessories must be available for support in-field battery charging.
- Radio units must be equipped with alphanumeric displays to more readily identify selected talk groups and operating modes, i.e. clear voice, encrypted voice, etc.

In addition to the specific desired features indicated above, all furnished equipment must meet minimum equipment requirements identified in the following sections of this RFP. This Section describes the minimum-acceptable requirements for mobile, portable, control station, fixed-site radio, and microwave equipment. All radio equipment installed by the Proposer shall be FCC type accepted under Part 90 of the FCC Rules and Regulations, ITU Region II or EU EMC compliant. Additionally, all provided equipment shall be in current production, supported for a minimum of ten years. Proposers shall be specific in their responses and shall avoid ambiguous statements such as "digital capable, digital ready", P25 capable", etc.

6.8.4.2 Mobile Radio Equipment

- Incorporate heavy-duty construction, weather-sealed enclosures and weather-sealed controls to meet IP 67 or Military Standard 810 C, D, E and F and TIA/EIA 603 paragraph 3.3.2.2 through 3.3.5.2 for water, shock, vibration, dust, humidity and high/ low temperature performance. Equivalent standards such as IP 66 are acceptable.
 - Front mount control-head with single rear mount radios and dash mount radios with single control-head configurations must be available to meet the needs of the different users. Rear mount radios require weatherproof control heads, speakers, microphones and other accessories. Some mobiles may require dual control heads.
 - Multi-band mobile radio configurations (using one control head/speaker/microphone to simultaneously control three mobile radio transceivers) are desirable to allow for VHF/ operations, depending upon the types of radio transceivers employed.
 - The mobile radio shall be powered from a 12-volt DC negative ground. Proposer shall specify required current levels.
 - Digital voice encryption, must incorporate AES/DES or TEA 2 coding.
 - Incorporate alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID/Alias, call alerts, and operational status such as scan and channel busy.
 - Capable of receiving, displaying and sending real-time messages from a selection pre-defined data messages.
 - Emergency priority button on radio display head to initiate an emergency priority call.
 - External alarm dry-contact closure to provide activation of a horn, light, etc. whenever the radio unit is individually called.
 - Data transmission capability.
 - Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an Intel Based Windows 7 or higher Operating System computer via appropriate cables or over the air. Three sets of programming software and cables shall be part of the delivered equipment. If possible, programming via an Android device is desirable but not a requirement.
 - A palm-type microphone shall be provided with the radio. A separate external speaker capable of producing a minimum of five watts shall be provided. The speaker must be contained in a housing sufficiently durable to prevent damage to the speaker.
 - Time-Out Timer to warn the user of excessive transmission length. Time out timer should automatically disable the radio's transmitter after a pre-determined period.
 - Internal GPS shall be priced as an optional feature.
 - Mobile radio installation location shall be coordinated with a representative from each system user.
- Output power shall be sufficient to achieve required coverage defined in **Section**

6.8.6, not be less than 10 watts.

- **STANDARD RADIO PACKAGE CONSISTS OF RADIO, CONTROL HEAD, CABLES, MICROPHONE, GAIN ANTENNA.**

6.8.4.3 Portable Radio Equipment

- Radio dimensions shall be such that they are physically small enough to facilitate easy carrying by the operator.
- Radios must be self contained in a heavy duty constructed, weather-sealed single ruggedized housing that meets IP 67 or Military Standards 810 D, E and F and TIA/EIA 603 paragraph 3.3.2.2 through 3.3.5.2 for shock, vibration, dust, humidity, high/low temperature and blowing rain. The housing must meet or exceed EIA drop test requirements.
- Top-mounted rotary controls with positive stops for volume/channel selection. For Fire use radios control placement must be sufficient to allow gloved-hand operation, as is typically needed by the fire service.
- Incorporate alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID/Alias, call alerts, and operational status such as scan, transmit or low battery.
- Capable of receiving, displaying, and sending real-time messages from a selection of pre-defined data messages.
- Time-Out Timer to warn the user of excessive transmission length. Time out timer should automatically disable the radio's transmitter after a pre-determined period.
- No protruding push-to-talk button, thereby preventing damage to the button as caused by impact as well as accidental transmitter operation.
- Protected emergency button allowing easy access when needed but incorporating an ergonomic design whereby the emergency function cannot be accidentally activated.
- An accessory connection shall be provided for the attachment of external devices such as single and combination remote speaker/microphone units (with or without antenna), vehicular adapters, and mobile data computer equipment.
- Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from a Windows 7 or higher Operating System computer via appropriate cables or Over the Air. Three sets of programming software and cables shall be part of the delivered equipment.
- Portable radios, accessories, and batteries (used by the Fire Department) proposed must be Factory Mutual approved as intrinsically safe for the following hazardous environments: Class I and II Division I, groups C, D, E, F and G and non-incentive for Class I, Division 2, Groups A, B, C and D. As an alternative these units may meet ATEX, Cenlec or other approved standard.
- Vendor shall work with the Fire Department to ensure that the radios and accessories are compatible and configured with the optimal system settings to maximize audio intelligibility in high noise environments.
- Carrying case options should include leather-carrying case with swivel mounts and rings to accommodate shoulder straps typically used by the Fire Department. Additionally, battery belt clips should be included to match the number of non-public safety portable radios supplied for all agencies.
- Optional surveillance accessories such as miniature microphones, earpieces and remote microphones and headset speaker microphones must be available.
- Digital voice encryption, using AES/DES coding, or TEA 2 to provide security during transmission and reception of sensitive communications shall be an option.
- Single-unit 120VAC rapid charger shall be capable of fully charging a discharged

high capacity battery pack within a one-hour period. Provide optional single-unit 12VDC rapid charger for vehicular operation

- Battery shall operate the proposed radio equipment a minimum of ten hours using a duty cycle of 5% transmit, 5% receive and 90% standby.
- **GPS shall be priced as an optional feature.**
- Data transmission capability.
- Output power shall be sufficient to achieve required coverage defined in **Section 6.8.6**, not be less than 1.8 watts.
- Standard radio package for public safety consists of radio, gain antenna, desk charger, high capacity battery, spare battery, speaker microphone and carrying case.
- Standard radio package for general government consists of radio, gain antenna, desk charger, high capacity battery.

6.8.4.3.1 GPS Incorporation

The MoHA requests that proposers provide the prices and specifications for a GPS based user location system to be implemented. It is preferred that the GPS technology be integral to the radio equipment but the use of GPS equipped speaker-microphones is also acceptable. A complete description of the GPS system must be included in the proposal.

6.8.4.3.2 Unit location system

Proposers must include the description and pricing for a unit location system that will interface with the MoHA CAD system and be capable of displaying the location of a unit on a monitor based upon the GPS signal being received.

6.8.4.4 Control Station Equipment

- Multi-band control station configurations must be available to allow VHF/operations, depending upon the types of radio transceivers employed.
- Available either as an integrated 120VAC-powered desktop radio cabinet or a remotely located, AC-powered radio package with separate remote control unit.
- Control station and control unit shall have optional provision to operate from standby 12VDC source upon failure of AC power.
- Provision shall be provided for local and remote control operation of the control station.
- Digital voice encryption, using AES/DES coding, or TEA 2 to provide security during transmission and reception of sensitive communications shall be an option.
- Incorporate alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID/Alias, call alerts, and operational status such as scan and channel busy.
- Time-Out Timer to warn the user of excessive transmission length. Time out timer should automatically disable the radio's transmitter after a pre-determined period. Control station packaging shall incorporate sufficient electro-magnetic shielding of radio and power supply components to allow multiple control stations to be located at the same site without causing unit-to-unit interference.
- A desk-type microphone shall be provided with the control station.
- Capable of receiving, displaying, and sending real-time messages from a selection of pre-defined data messages.
- Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an Intel Based Windows 7 or higher Operating System computer via appropriate cables or Over the Air. Sufficient

quantities of programming software and cables shall be part of the delivered equipment.

- Output power shall be sufficient to achieve required coverage defined in **Section 6.8.6**, not be less than 10 watts.
- Standard package for control stations shall include all necessary mounting hardware, radio controls, inter-cabling, and 3db gain or yagi antennas for a complete installation.

6.8.4.5 Fixed Site Equipment Radio

Proposer must describe its infrastructure on a site by site basis.

6.8.4.6 Site to Site Connectivity

Sites must be connected using a redundant network in order to protect against system failure due to loss of control network.

6.8.4.6.1 Microwave Recommendations

If a digital microwave network is implemented for the backbone of the new radio network the following guidelines are provided.

- The digital microwave backhaul network shall consist of, monitored hot standby (MHSB) or ring protected, point-to-point licensed microwave hops.
- Each microwave hop shall be designed to meet or exceed a one-way end-to-end annual reliability of 99.999% at the required capacity.
- All aviation coordination, applications, and engineering activities associated with the microwave system shall be the responsibility of the Proposer. All coordination and licensing fees will be paid by the MoHA.
- An alarm system shall be provided to monitor microwave functions and provide alarm status of abnormal operational parameters of equipment associated with the microwave system. The alarm system shall have visual status indications and be capable of sending alarm notifications to console displays, email and smartphone devices.
- Proposed microwave antennas, radomes, and antenna mounts shall be capable of maintaining reliable operations during sustained hurricane force winds of up to 140mph or the current version of the EIA/TIA 222 tower standard, whichever is greater. Each furnished antenna system must be equipped with dual stiff arms/mounts to limit antenna vibration and flexing during high wind events. If space diversity is required because of the necessity for higher frequencies and the engineering constraints of longer distances, these requirements and all necessary materials shall be part of the proposal.
- Minimum operational service parameters of each microwave link shall be as follows:

Unfaded Bit Error Rate (BER):

Calculated RF Link Fade Margin, Including Circulator,
Connector, and Transmission Line Losses: Not Less Than 10^{-10}

Maximum Faded BER:

Link Outage Level: Not Less Than 10^{-6}
To coincide with 10^{-3} BER, to occur at a signal level not less than 3 db in excess of the calculated RF link fade margin.

6.8.5 Infrastructure System Configuration

6.8.5.1 General

It is the responsibility of the Proposers to provide a turnkey system and to install industry accepted standard electrical grounding systems and lightning protection devices to protect proposed equipment from damage due to electrical transients on the antenna systems, power, telephone and/ or control cables.

Sites determined by the Proposers to be potentially prone to flooding or other environmental issues must be so noted by the Proposers in their proposal response. Engineering remedies must be based on historic flood plain data.

All necessary permitting is part of this project and shall be furnished by the Proposer.

6.8.5.1.1 Analog Connectivity at Sites

Four Marine VHF base stations must be included in the system and accessible from subscriber units and dispatch consoles either directly or via a permanent patch. One unit each to monitor channel 16 to be located in Cayman Brac and Grand Cayman. 2 additional units to be located in Grand Cayman. One single channel unit and one multiple channel unit to monitor & transmit on various marine channels is required. These radios should have a minimum transmit power of 100 watts.

6.8.5.2 Infrastructure Functionality

The proposed digital radio system's basic operational mode will be determined by the successful Proposer.

System reliability and fault tolerance is a major objective in the design of the system. The system shall be designed such that there are no situations where a single failure in a Proposer's supplied equipment will disable wide area operation. The proposed solution must also be robust in design to maintain continued operation should any of the following failures (or combination thereof, but not limited to) occur:

- A. Failure of entire single site
- B. Loss of Prime Site/Control Point
- C. Loss of Control Channel(s)
- D. Failure of console/audio controller
- E. Loss of transmitter(s) operation
- F. Loss of receiver(s) operation
- G. Failure of dispatch console terminal(s)
- H. Failure of one site controller
- I. Loss of DC-DC power converter(s)
- J. Loss of Network Management System

Proposers shall describe in detail the effect each of the above listed loss and failure will have on their proposed system configuration. Proposers shall also describe mitigation and restoration steps involved with each loss and failure that returns the system to full operational capability.

6.8.5.3 Site Antenna Systems

Proposers shall design, provide, and install new antenna systems to meet the specific coverage requirements and objectives described by **Section 6.8.6**. **It is emphasized that all exterior equipment must operate and survive in a tropical marine environment.**

Proposers shall follow current industry standards to prevent lightning entering any government building where the system or deskset radios are installed

6.8.5.4 System Control

The proposed radio system shall incorporate high levels of redundancy to assure continued system operation. To provide the highest level of reliability, site/system control schemes must fully redundant, and utilize distributed processor technology to the maximum extent possible. Site/System control schemes shall include protected power supply equipment so the loss of a single power supply will not interrupt control scheme operations.

Site/System controllers shall minimally provide the following features:

1. Assignment of call priority
2. Verification of user identification
3. Working talkgroup/channel assignment
4. Electronic documentation of call type, caller/called, call time, channel assignment, etc
5. Ability to enable/disable call access to specific field units

The proposed console/ audio control scheme must be sized to support a 40% increase in console devices. The console/audio control scheme shall be configured to interface to a new radio and 9-1-1 phone traffic audio logging system.

6.8.5.5 Voice Encryption

Each of the digital RF channels shall be equipped to support voice encryption utilizing AES, DES or TEA2 standard.

Encrypted mobile, portable, and control station units shall be of the same physical size and general configuration as non-encrypted units. Encryption for subscriber units shall be specified as a per unit cost option. Accessory equipment shall work compatibility wise with all types of units.

Proposed radio coverage throughout the Cayman Islands, in the digital encrypted mode, shall be equal to that in the digital clear mode. Encryption shall be available in all system modes of operation.

Proposers may be required, as part of an oral presentation, to demonstrate both clear and encrypted voice audio quality using portable/mobile equipment identical to that offered in their proposal response.

6.8.5.6 Logging Recorder

There is a requirement for voice logging for all public safety functions in the dispatch center. The logging recorder will be provided by the 911 Dispatch operation.

The capabilities of the voice logger will include:

- Record all radio traffic by talk group.
- Record all radio traffic by channel.
- Record all dispatch console voice functions (i.e. dispatching, telephone, intercom, etc.)
- 24 hour, 7 days per week operation

6.8.6 Coverage Criteria

6.8.6.1 General

The MoHA's new trunked Radio System shall be configured to support portable hand-carried radio equipment, operated on the street, and within residences/building structures, at physical locations throughout the MoHA's coverage area. Proposers shall fully identify and guarantee the coverage predicted for their proposed solution, per the operational and functional requirements of this specification. Proposers must take into account the following operational characteristics in the development of their coverage guarantee:

- A. Portable subscriber units with shoulder microphones and waist-mounted radios must be the normal configuration considered for the purpose of coverage design. Both talk-out and talk-back- coverage analyses must use these parameters.
- B. Portable subscribers units will use flexible, quarter wavelength antennas. Coaxial-skirt type antennas are not acceptable due to size and other mechanical limitations.
- C. Vehicular antennas should be considered as trunk mounted and obstruction losses must be considered in the proposed system design for both talk-out and talk-back- coverage analyses.

6.8.6.2 Service Area

The system shall provide the ability to place and receive calls to and from any point in/on the Cayman Islands as well as offshore in the Nation's territorial waters

Portable radio on street and in-building portable radio coverage must extend throughout no less than 95% of the land area within the Cayman Islands and three miles beyond its borders in any direction. Mobile coverage must extend throughout no less than 95% of the above-defined areas.

In building coverage is required in several buildings throughout the Nation. Proposers should address these structures specifically as to how acceptable in building performance can be obtained (such as BDA's, etc). The known buildings are listed in **Exhibit A**

All references to coverage reliability in this specification refer to statistical area reliability. For example, the phrase "95% coverage" indicates that the total area described shall exhibit at least 95% statistical probability that coverage areas, if tested, would be found to support electrical performance which equals or exceeds that minimum signal level necessary to deliver a DAQ of 3.4, as specified by this contract and specification. However, it will not be acceptable to provide a coverage guarantee, which includes a relatively large number of failed points within any one vicinity, while still meeting the overall 95% coverage goal.

All of the North Sound requires outdoor portable coverage.

6.8.6.3 Propagation Analysis

6.8.6.3.1 Sites

Proposers are free to select sites that they deem appropriate.

6.8.6.3.2 Propagation Studies

Proposers must provide a formal statement, within their proposal, that coverage objectives specified in **Section 6.8.6.1 and 6.8.6.2** are met by their proposed solution. **ANY** disclaimer or exception taken to the specified coverage requirements shall be clearly identified with a detailed description of the extent of the disclaimer or exception and the reason for which it was taken, in order for full consideration to be given to the Proposer during the evaluation process. Proposers must provide written descriptions of the processes and propagation models used to calculate proposed area coverage.

Coverage maps and other relative calculations shall be submitted with the following minimum information clearly defined for each map or submittal:

- A. Antenna height
- B. Transmitter site power output
- C. Antenna gain and type (Includes transmission line losses)
- D. Effective signal level required, at both infrastructure and user radio antenna ports, to produce DAQ 3.4 and 3.0 in the typical land mobile radio environment
- E. Transmitter site talk out range, individual site as well as composite coverage
- F. Portable unit talk-in range, individual receiver sites as well as composite coverage
- G. 95% mobile and portable radio on street and in-building portable radio coverage. In-building coverage maps shall depict 9db, 15db, and 25db loss profiles.
- H. Maps must be of the latest issue available and show municipal boundaries.
- I. Mathematical model used for propagation studies. Okamura studies are not acceptable.

Talkout is defined as transmissions from the radio site (tower) to the radio unit in the field. Talkback is defined as transmissions from the field unit back to the tower.

6.8.6.4 Coverage Acceptance Criteria

In order to avoid subjective interpretation of coverage test results to the maximum extent possible, mobile coverage testing must be done with computer-controlled test equipment. This equipment must automatically record the position of the test vehicle (by means of GPS positioning) at the time of a reading, and record the signal strength of at least 200 signal samples over a 40-wavelength period for each reading taken within a specific test grid. Signal strength measurements must be made continuously along the drive route.

Grids throughout the land portion of the service area shall utilize grid sizes no greater than 0.25 miles. Offshore grids shall be no greater than 1/2 mile. The MoHA Project Manager and the Proposer's Project Manager shall be required to mutually determine the size/location of grids and a suitable drive route plan that encompasses the entirety of accessible grids.

Field strength test data obtained throughout the coverage area, in accordance with minimally required reliability percentages, must be of sufficient level to produce a (DAQ) rating of 3.4 or higher throughout the predicted service area to be considered passing.

Mobile radio signal strength measurements must be made from a vehicle moving at approximately 30 mph.

The device used to measure field intensity must be stable and have a dynamic range suitable for the conditions under test. Prior to the execution of these test activities, all test equipment and data gathering equipment to be used must be fully certified by an independent testing laboratory having calibration tools traceable to the National Bureau of Standards. These certification documentations must be presented to the MoHA prior to coverage testing for verification.

The test output will be fed into a laptop PC or an equivalent computer device. The Proposer will submit a written and graphical report containing an analysis of the test results to the MoHA Project Manager daily and a formal report will be required at the conclusion of the test. The results must depict mobile, portable on street and portable in-building coverage. The analysis must include maps of the coverage area divided into grids, with the test results for drive tests displayed in each grid on a separate map. All test data, in its raw form, must also be made available for independent review.

The MoHA reserves the right to disapprove any instrumentation or procedures. No adjustments will be made to the transmitter(s), portable/mobile radio units or test instrumentation after appropriate calibration of all involved equipment.

A successfully tested grid is defined as one where communications from a dispatch console to a portable radio unit, as well as for the reverse path, are not less than DAQ 3.4. Ninety-five percent of the grids must meet exceed these defined requirements for the system to be considered coverage compliant.

If a grid is in an inaccessible area it will be counted as follows;

- If all adjacent grids pass the coverage test then the inaccessible area will be considered as passing.
- If any adjacent grid fails to pass the coverage test then the entire inaccessible area will be considered as failed.

Portable radio voice quality testing must be performed using a minimum of ten phonetically balanced phrases, to be supplied by the Proposer. A successful test measurement will be one that requires no repetition to understand the spoken phrase and with a DAQ of 3.4.

In addition to drive testing the MoHA will select a number of specific buildings, of key interest to the MoHA, for in-building audio quality testing. The buildings are listed in **Exhibit A**.

There may be additional buildings to be tested upon contract signing.

The test procedure will be developed with the successful vendor prior to system testing. The MoHA shall specify the test team to participate in coverage testing. The team must include, at a minimum in each team, an MoHA representative, and a Proposer's

representative.

Hurricane season is from June until November. Therefore, it is critical to the acceptance testing phase that installation and implementation is conducted on a schedule that facilitates coverage and performance testing during those specified periods that are agreed upon by the MoHA and the Proposer. The Cayman Islands are in an area prone to tropical storms and hurricanes where such extreme weather events could disrupt or delay coverage testing. Proposers must consider this factor when developing their proposed implementation schedule and project completion timeframe.

Acceptance testing is to be performed towards the end of the wet season when foliage is densest.

6.8.6.5 Operation of Radios in a High Noise Environment

As part of the evaluation process the proposers may be required to demonstrate portable radio digital voice quality in a test specifically designed to demonstrate the audio performance of portable radios in high noise environments such as encountered in the fire service. The test will take place using fire personnel from local departments and will demonstrate performance near the normal high noise of pumper trucks and extrication tools. The actual test parameters will be finalized with each proposer at a date, location and time determined by the MoHA during the evaluation of proposals.

The noise conditions to be tested are;

- K-12 Saw
- Chain Saw
- PASS Device
- Vibra-Alert
- Fire Engine at High Idle while engineer is at the pump panel

6.8.7 Dispatcher Console Requirements

6.8.7.1 General

It is a functional requirement that the existing SmartZone 800 MHz trunked system remain operational during the installation and acceptance phases of the new Digital Voice Radio System. Any proposal causing interruption of the public safety communications system for any duration **will not be acceptable** by the MoHA. Installation of new radio dispatcher equipment must, likewise, be achieved in a manner that causes no interference with the operation of the existing trunked system.

The dispatch consoles shall provide all the necessary functions to operate trunked or conventional two-way radio base or repeater stations.

All dispatch consoles are identical within each center.

Note: All consoles and associated equipment, wherever located, must be properly and adequately grounded and surge protected to industry standards for operator safety.

6.8.7.2 Radio Console Types

Normal dispatch consoles shall include all controls that apply to the various channel/talk groups and auxiliary functions for a console. These console positions shall have the capability to monitor and control pre-configured talk groups, conventional channels, and

dispatcher-controlled interoperability links. Each console position shall contain as a minimum:

- Select Speaker – one speaker where audio from selected channels/ talk groups is presented, with volume control.
- Unselect speaker – one speaker where audio from unselected channels/ talk groups is presented, with volume control.
- Transmit Function – a color-coded transmit function to control the push-to-talk (PTT) function for the selected transmitter(s), talk group(s), and/or channels.
- Clock – shall display time in multiple formats – i.e. 24-hour format.
- VU Meter or Audio Level Display.
- Keypad representation for numeric data entry.
- Desktop microphone.
- Dual Headset Jack – a dual headset jack will be provided which allows for use of a headset equipped with RJ-327 type plug with modular adapter. Separate headset volume controls for radio and telephone audio output must be provided.
- Intercom – intercom between operator positions must be provided. A visual display must be provided to identify both the called and calling parties by console name. Multiple simultaneous intercom conversations between individual consoles must be possible.
- Private Call – Selected users shall have the ability to selectively communicate “privately” with another individual users system regardless of what talk group either unit is in. The call shall allow the two users to utilize a single channel resource to communicate without the participation or monitoring of other units in their respective talk group.
- Caller ID display on the channel window for standard calls and emergency calls.
- All Receiver Mute Function – a function that mutes the received audio from all unselected channels, shall be provided. This muting function will be in programmable predetermined increments.
- Talk group/Channel Cross Patch – a function that temporarily combines two or more talkgroups or channels into one new group. All members of the new group can communicate with every other member. Each console shall be able to support up to five simultaneous patches at one time. Consoles shall also support pre-configured patches.
- Simultaneous Select and Instant Transmit Function – a function which temporarily sums two or more talkgroups or channels into one module. Simultaneous select merges the members for the benefit of the dispatcher; however, it does not create a super group. Only the dispatcher can hear all the members. Each console shall be able to support up to five simultaneous select calls at one time. Consoles shall also support pre-configured simultaneous selects.
- Emergency/ Reset – consoles shall receive emergency alerts from the trunked radio system regardless of the status of the channel control window. Emergency messages will be indicated by a visual flashing ID, emergency ID character, and an audible alert. Dispatcher acknowledgment of the message must silence the audible alert and stop the flashing display. Multiple emergency messages will be queued in the display stack and the emergency ID character will continue to flash until all messages are viewed and subsequently cleared by the dispatcher. Emergency unit identification will be in real time. GPS coordinates, if provided, will be displayed at each console position.
- Alert Tones – Three distinct tones shall be used for alerting purposes over the air. Each alert tone must be immediately broadcast, when activated, on the selected

radio channel. Each tone shall be readily identifiable and unique.

- Call Indication – a color-coded status call indicator must be provided for each module in a channel control window on the display screen.
- Individual Volume Adjust – shall be provided for each talkgroup/channel on the console. Associated color-coded status indicators must continuously show whether the channel is in the full or adjustable volume control state. The volume control shall be automatically bypassed when a talkgroup/channel is placed in select status.
- Talkgroup/Channel Name – designated talkgroup/channel control modules shall include a minimum of eight character alphanumeric display symbols to identify the talkgroup/channel.
- Talk Group/Channel Busy Identifier
- Text Messaging – each console shall have the ability to send and receive to and from field units.
- Cross Mute Function – each console shall be capable of muting the audio from other consoles.
- Instant Playback – each console shall be capable of playing back the last call/radio transmission with the push of a button.

At least one console in the dispatch center must have the capability of monitoring the status of the radio system.

- Ability to remotely disable and re-enable selected field units.
- Ability to regroup individual radios into special talk groups.
- Assignment of user priority levels.
- Monitoring and retrieval of special feature activity i.e. encrypted voice transmissions, etc.
- Retrieval of system activity i.e. types of calls, call duration, when made, user identification, etc.
- Ability to monitor major site/system alarm status.

The actual location of this monitoring system will be determined by the MoHA.

6.8.7.2.1 Optional remote console capability

As an option, proposers shall provide information and pricing for remote console software capable of basic functionality that includes, at a minimum, the ability to transmit and monitor standard talkgroup/channel calls. This software shall run on a standard laptop PC or desktop workstation and will require no additional equipment. Transmissions and monitoring shall be done from a standard PC headset/microphone. These console positions shall have the ability to access the radio system from any location via any wired or wireless high-speed internet connection using VPN technology. **Proposers shall provide per unit pricing on this option.**

6.8.7.3 Desired Functionality

6.8.7.3.1 Dispatch Console Reliability

Due to the critical nature of the communications services provided by the dispatch center, a high degree of reliability for the new radio dispatch console subsystem is required. The console subsystem shall:

- Be availability with uptime of 99.999%.
- Provide automatic and continuous self-testing and diagnosis.

- Alert the dispatch operator in the event of component or sub-system failure.
- Allow continued operation of the remaining consoles in the event of failure to a specific console, through isolation of the defective console.
- Be designed with no single points of failure.
- Interconnectivity between consoles and dispatch locations shall be IP based, in lieu of traditional circuit switched, technologies.

A high degree of modularity will be utilized to reduce the number of sub-systems affected by a single component failure. Repair of sub-systems without totally disabling multiple radio console positions shall be required, as continued console operation is required during repair.

6.8.7.3.2 Power Supply

External power to each console shall be supplied by an existing nominal 120 volts AC, 60 Hz, single-phase power source. All dispatch console equipment shall also be connected to an outlet on a circuit or circuits that are supported by the building's existing primary uninterruptible power supply (UPS) and emergency power generator system. The Proposer shall maintain at least 30 minutes of backup operation on the existing UPS system. The Proposer is also responsible for any necessary modifications to the existing circuits, UPS, or emergency power generator system and grounding to support the radio dispatch console subsystem.

6.8.7.3.3 Flat Panel Display

Console monitors must be flat screen LED monitors. The physical size of each monitor will be determined by the use of the associated console. Monitors are to be mounted in the existing 911 furniture.

Regardless of the number of screen functions the console must operate with a single mouse.

6.8.7.3.4 Headset Jack Configuration

All radio consoles shall be setup for dual headset jacks and local microphone operations. Each console shall provide independent transmit audio level settings for audio inputs from the headset microphone and console microphone, such that dispatchers may freely switch operation without affecting dispatch audio quality. Headset jacks shall be compatible with six wire headsets. Radio consoles shall support both radio and telephone communications using the same operator headset. Proposers shall be responsible for this interconnection and the equipment that supports it.

6.8.7.3.5 Footswitch

A single pedal footswitch with high durability shall be included to provide Push-To-Talk (PTT) for the headset. The footswitch shall be heavy-duty and non-skidding. The Proposer shall supply and install a foot switch for each console.

6.8.7.3.6 Time Generator System

The MoHA requires a high accuracy timing clock system. Proposer shall provide and interface a time generator system that references the Global Positioning System (GPS) to synchronize all 911 dispatch, CAD, radio, and audio recorder clocks at all radio console positions. This time generator system shall be fully interfaced to and control the event-time display of the radio consoles, console audio recorder, radio system management tools, radio system alarm system, microwave alarm system, E911 and CAD systems at each radio dispatch location. A large remote display unit connected to

the time generator system shall be installed within view of all console positions. The system shall provide for tamperproof recordings to be made from the master recorded log for evidence purposes.

The clock output must be capable of sending signals throughout the Dispatch Center and other remote locations from the clock location.

6.8.7.3.7 Operating System and Network Management Functions

The console application shall run on Window's 7 or higher operating system platform. The consoles shall be software driven to allow for access to future features and technologies. The Proposer shall set-up each radio console so that all dispatch personnel shall have their own unique system login.

6.8.7.4 Console Electronics

6.8.7.4.1 System Interfaces

Control of marine radios (VHF-FM) must be provided.

Proposers shall also interface the dispatch subsystem, either directly or through other subsystems, to the MoHA existing logging recorder system.

6.8.7.5 Console Furniture

No console furniture is required. The proposed console system must be adaptable to the existing Watson console furniture.

6.8.7.5.1 Furniture System Grounding

The furniture system shall be grounded in accordance with an industry accepted standard.

6.8.7.5.2 General Information –Dispatch Centers

The primary Dispatch Center is the 911 PSAP location. The functions of both Dispatch and 911 are housed in single consoles. All console functions must operate with a single mouse.

6.8.8 Towers

6.8.8.1 Requirements

It is permissible to use existing towers at established sites. The additional loading placed on these towers must be described in the Proposer's submittal. The existing towers shall be analyzed and reinforced as required for the new loading conditions. Cost of the tower analysis shall be included in the base price.

Proposers shall supply a tower loading report detailing the tower analysis within 60 days of contract execution.

The basic design standard of newly or existing required steel antenna towers, wave guide bridges and supporting structures, shall be ANSI/EIA-222-G or latest version Design shall also conform to local land development ordinances.

Any new towers proposed shall be a self-supporting structure having an overall height to be determined by the Proposer, based on the requirements of area coverage and availability of clear microwave paths for site connectivity.

6.8.9 Phasing/Implementation Schedule

6.8.9.1 Phasing of New System

Proposers must arrange and submit a comprehensive migration plan that prevents disruption of communications on the existing trunked radio system and provide a smooth transition to the new digital voice radio system:

- Proposers shall supply a detailed project schedule that shows the sequence of events for the installation of the new system showing any effect the different stages of installation may have on existing systems. Any relocation or modification to existing equipment shall be predetermined and will require prior written approval obtained from the MoHA's Project Manager.
- Proposers shall provide a project completion time period (in days), based on the MoHA's execution of a Notice to Proceed. Proposers must provide a schematic representation of the implementation process as well as a hypothetical migration plan.
- These required submittals will be used by the MoHA to evaluate the Proposer's ability and understanding of specification requirements to perform this work in a method that offers no disruption to ongoing public safety communications operations.
- Proposers shall provide a time schedule for system managers, dispatchers, and user personnel training. Proposers shall supply time schedules for the orderly transfer of departments onto the new system and estimated time period when the transfer could be completed.

Proposers shall direct the orderly transfer of services to the new system only after having successfully concluded equipment alignment and installation procedures, successful completion of the system acceptance test and completion of manager, dispatcher, and user training programs.

Proposers must not dismantle or change the existing radio systems without prior written approval of the MoHA's Project Manager. Some portion of the existing system may remain operational after acceptance of the new system. The MoHA Project Manager will notify the Proposer when elements of the old analog infrastructure equipment may be reallocated to meet interoperability requirements or otherwise can be decommissioned.

Proposers shall assist the MoHA Project Manager and all user groups in preparing user talkgroup fleet mapping, initial priority levels, and shall complete the necessary user equipment installation, programming, and record keeping, as required. This activity shall be completed prior to service cutover.

Prior to contract execution, the successful Proposer shall commence negotiations with MoHA's Project Manager to develop a comprehensive test and acceptance plan that addresses, minimally, the following major functionality and operability issues:

A. Transmitter Equipment

- Provide RF power stage measurements at different levels of the transmitter system such as transmitter, combiner, cable, antenna, etc.
- Test R.F. components for specified insertion loss.
- Test for proper frequency, modulation, digital signaling, and stability.
- Coverage testing and report of DAQ and signal margins throughout proposed service area, in all required configurations (portable in-vehicle, portable on-street, portable in-buildings, Mobile on-street, etc)

B. Receiver Equipment

- Test of compliance to specifications of equipment provided.
- Provide log of signal gain or loss to equipment within the receiver system such as antenna, cable, preamp, splitter, and receiver antenna port.
- Test of audio quality and level (reciprocal of that necessary for the transmit path) of system balance.

C. Console Audio/System Controllers

- Test of compliance to manufacturer's published specifications of provided equipment.
- Test of audio level and quality.
- Verification of system failure modes in response to forced failures of individual communications/control lines, sub-systems, and complete site failures. A complete written explanation is required.

D. Dispatch Centers

- Testing of operational features per dispatch position.
- Test system operation during simulated failures of system components i.e. console electronics, sites, power loss, etc.

E. Subscriber Equipment

- Vendors must provide samples of each subscriber model being proposed for the system. Each will be tested for the following;
 1. Validate compliance with vendor specifications for transmitter, receiver, and control circuitry
 2. Check for compliance with RFP specifications and originally proposed functionality
 3. Validate proper user profile programming of equipment and operation on the system
 4. Testing of supportive accessory equipment, i.e., speaker/microphone, DTMF signaling, chargers, batteries etc.
- Proposers shall supply all test equipment, diagnostic services, documentation, software, personnel, vehicles, and other items necessary to test the delivered and installed radio system in accordance with the contracted test and acceptance

plan, including operational features, to complete a total system functional test.

- Proposers must disclose test procedures and equipment that will be used to verify radio system coverage as specified in **Section 6.8.6**.
- Proposers shall present within their proposal submittal a sample test and acceptance plan that is representative of the scope and complexity of the proposed radio system. This plan must address all items described in **Section 6.8.9.1 A to E**.

6.8.9.2 Parallel Implementation

The new system shall be installed in a parallel implementation. This requires infrastructure equipment to be fully installed and operationally ready before the existing voice system can be decommissioned. The current system is the MoHA's only public safety voice communications trunked system, thus requiring 24/7/365 operation. No interruptions in service of any duration shall be allowed without prior written approval of the MoHA Project Manager. Therefore, fully duplicated voice radio systems may coexist for some period of time. This period of time of parallel installation shall be used to perform operational and functionality testing of the entire system, dispatch consoles, mobiles, portables, control stations, system connections, features, interoperability, high capacity receiver-voting, system management applications, and simulcast transmitter operations. After the new system has been fully tested on a subset of radio channels and later accepted, the Proposer must remove all existing system equipment, inclusive of any surplus antenna system components and equipment, as directed by the MoHA.

Proposers shall be responsible for developing the plan to accommodate both existing and proposed systems during the parallel and transitional periods of installation and implementation.

Proposers will be responsible for provisions and cost of warehousing, insurance, storage, and security of radio system infrastructure and user equipment prior to and during the construction and installation phases of the project.

Proposers must furnish comprehensive training on user operation of portable and mobile radios, control stations, dispatcher consoles, and other user equipment as required by the contract. Proposers must also furnish comprehensive training for system diagnostics and management systems for System Managers. The new system must comply with all technical parameters specified in the approved Testing and Acceptance plan.

Proposers shall be responsible for any site modifications required to accommodate infrastructure equipment proposed for location in the MoHA-owned as well as in non-MoHA-owned properties.

All radio frequency coordination, license application preparation, technical support, and engineering activities/fees associated with the modification of existing radio licenses and/or the acquisition of additional licenses required to facilitate the operation of the proposed digital radio system shall be the responsibility of the Proposer.

Any modification or relocation of existing equipment will require prior written approval by the MoHA's Project Manager. The Proposer shall supply "as built" drawings and complete written documentation of modifications or relocations to existing systems to

facilitate maintenance of this MoHA-owned equipment in the future.

6.8.10 Warranty, Spare Parts, and Maintenance Guidelines

6.8.10.1 Warranty of System Performance

Proposer acknowledges that it has carefully reviewed the functional requirements and warrants that the digital radio system proposed in its response to the RFP shall function according to equipment specifications, industry standards, and the minimum operative characteristics specified in **this RFP** after the date of system acceptance.

Proposer shall further be responsible for providing radio system coverage as defined in **Section 6.8.6**. All costs and expenses incurred in order to fulfill the functional, operational, and technical requirements of this RFP shall be the responsibility of the Proposer.

6.8.11 Maintenance

Proposers shall be responsible for all maintenance of the radio system for the duration of the lease. Proposers shall provide a single 24/7/365 contact point responsible for Proposer maintenance issues.

Proposers will have qualified technicians available on-site, in response to a reported major service outage, within four hours, 24/7/365. Proposers will have qualified technicians available on-site, in response to a reported minor service outage, within four hours during normal working hours (8AM to 5PM Monday through Friday)

Response default penalties: In the event of default on the response time on reported major service outages, Proposers agrees to pay the MoHA the following response penalties. Proposers shall pay a \$500 penalty for each occasion where its fails to meet the response time obligation. Proposers shall pay a \$1,000 penalty per twenty-four hour period in which defective infrastructure site equipment is not restored to operational status.

Proposers will provide software updates, at no additional cost, for the entire period under which the MoHA has committed for Proposer-provided after warranty maintenance services.

Proposers must include in their proposal a detailed Disaster Recovery Plan, stating the processes used to assist clients in the immediate aftermath of events such as but not limited to floods, hurricanes, and acts of terrorism. Proposers must provide information detailing processes for maintaining adequate spare parts stocking levels to support extraordinary needs; their ability to furnish emergency quantities of portable radios, chargers, battery packs, and the ability to furnish transportable emergency trunked radio systems; and their ability to provide skilled technical resources. Proposers must supply summaries, that include client references, of Disaster Recovery Support provided in response to at least two recent disaster events (i.e., events must have occurred within the past four years).

6.8.12 Radio Programming Requirements

Proposers shall assist the MoHA with development of user identification and talkgroup assignments.

Proposers shall program all portables, mobiles, control stations, network, consoles, and infrastructure equipment supplied by the Proposer to operate on the properly licensed operating frequencies and the talk paths necessary.

Proposers shall furnish the MoHA "as programmed" documents for each radio type (infrastructure & subscriber) placed on the system.

Proposers shall provide two sets of radio and equipment programming software and all other support equipment and special cables necessary to program each type of equipment supplied by the Proposer.

6.8.13 Training

Proposers shall provide all user, dispatcher, and system management training.

User and dispatcher training shall be done on-site by the proposer's personnel. Dispatcher training shall be more extensive and will involve all designated full and part time dispatchers employed by the MoHA at the time of system operational testing.

Proposers shall provide comprehensive training to the department's management staff in the proper system management skills needed to quickly adjust system parameters (i.e. talkgroup creation, channel steering, etc) to optimize performance and to diagnose equipment. Proposers shall provide operational training for personnel, either on site or at remote factory locations

Users, dispatchers, and system manager follow-up training will be provided and scheduled no more than ninety (90) days after system acceptance for the purpose of training reinforcement

6.9 Exceptions to Functional Response

Any exceptions, deviations, substitutions, etc. between the MoHA specifications and the proposal must be adequately explained. **Exhibit E must** be submitted with the RFP response. Each item of the checklist **must** be checked as "Read and Agreed", "Variation or Alternative" or "Exception". For each item listed as "Variation or Alternative" or "Exception" the proposer must provide an explanation. The reason(s) for the exception, deviation, or substitution are an integral part of this proposal. Describe any alternative functionality that may suffice. List each exception by the referenced requirement number(s).

6.10 Pricing

6.10.1 Proposal Pricing Summary Sheets

Proposers must provide detailed price breakdown. Any errors or omissions in submitting pricing for the equipment or services shall be the responsibility of the Proposer.

As this is a turnkey system, any pricing omission of a scope that is normally considered part of a trunked radio system will be provided for by the Proposer at no additional cost to the MoHA.

Subscriber equipment (mobiles, portables, control stations and accessories) is intended to be leased as part of this RFP. This procurement is structured for the lease of both infrastructure and future user equipment from a turnkey provider.

6.10.2 Maintenance Costs

All maintenance cost for the term of the lease shall be included in the lease payment.

6.10.3 Future Cost Considerations

It is the intent of the MoHA to operate this new radio communications system for, minimally, the next fifteen years. It is important that the MoHA receive reasonable safeguards in regards to future pricing.

6.10.4 Subscriber Equipment

The MoHA envisions several tiers of portable and mobile radio units for use by the various public safety and non-public safety agencies

Proposers shall develop cost proposals for providing low, mid and high-tier radio products using the following general base format and the requirements of this specification:

High-Tier Portable

1. At least 100 modes/talk groups/channels
2. Multi-line alpha-numeric LCD text display
3. Radio/ System status icons
4. 3-button keypad
5. Private/Individual Call
6. Emergency Button
7. Programmable option buttons
8. Talk group scan
9. System Scan
10. Flex antenna
11. AC Charger

Mid-Tier Portable

1. At least 100 modes/talk groups/channels
2. Multi-line alpha-numeric LCD text display
3. Radio/ System status icons
4. 3-button keypad
5. Private/Individual Call
6. Emergency Button
7. Programmable option buttons
8. Talk group scan
9. System Scan
10. Flex antenna
11. AC Charger

—

Low-Tier Portable

1. At least 100 modes/talk groups/channels
2. Single-line alpha-numeric LCD text display

3. Radio/ System status icons
4. Private/Individual Call (receive)
5. Emergency Button
6. Flex antenna
7. AC Charger

High Tier Mobile Radio

1. At least 100 modes/talk groups/channels
2. Dash mount and remote mount configurations
3. Multi-line alphanumeric LCD text display (minimum 12 characters)
4. Radio/System status icons
5. 9-button keypad
6. Private/Individual Call
7. Emergency Button
8. Programmable option buttons
9. Talk group scan
10. System Scan
11. Palm Mic
12. Installation

Low Tier Mobile Radio

1. At least 100 modes/talk groups/channels
2. Dash mount and remote mount configurations
3. Multi-line alphanumeric LCD text display (minimum 12 characters)
4. Radio/System status icons
5. Private/Individual Call
6. Emergency Button
7. Talk group scan
8. System Scan
9. Palm Mic
10. Installation

7. Proposal Authorization Form

(To be submitted with each Price Proposal)

I (or we) do hereby declare that I (or we) have carefully examined this RFP Specification and have a clear understanding of said Specifications, and shall provide the required communications equipment and the necessary permits and authorizations, tools, machinery, apparatus, and other means of construction, and to furnish all labor, materials, and services specified in the Contract or called for in the said Specifications (including all taxes/fees) necessary for the completion of the work described herein.

Respectfully submitted,

By:

Authorized Signature

Title

Printed Name

Business Name

Business Address

Telephone Number

Date

8. Legal Agreements

Please provide any warranty, license agreements, boilerplate contract, support agreements, etc. that you propose be used to form the contract with the MoHA.

The RFP's requirements shall be included in the final contract and provisions inconsistent with this RFP shall not be included.

Payment schedule shall be determined in the final contract.

The MoHA will withhold from payments due to Proposer ten percent (10%) until acceptance of system by the MoHA and final payment.

Dispute resolution provisions may be required.

COST PROPOSAL FORMATS

The proposer must include a schedule of lease payments for the duration of the lease period which is estimated at fifteen (15) years.

The proposer must respond to this RFP with a detailed cost proposal following the format required in the following pages.

The lease proposal must accurately describe all costs and conditions. It must include a payment schedule for all costs for the expected life of the system.

All optional item costs and alternative item costs shall be clearly identified in this cost proposal.

Installation costs of user equipment must be broken down by model. If costs vary due to location or type of vehicle this must be clearly indicated. Costs of all installation hardware must be clearly identified as to item, description, unit cost and total cost.

IT IS ASSUMED BY THE MoHA THAT ALL COSTS ARE SHOWN IN THE PROPOSAL. ANY HARDWARE OR SOFTWARE WHICH IS NECESSARY FOR THE COMPLETION OF THE RADIO SYSTEM IS ASSUMED TO BE AT NO ADDITIONAL COST IF IT IS NOT SEPARATELY IDENTIFIED.

PROPOSAL COST DETAIL

DISPATCH RELATED EQUIPMENT

Describe all cost identifiable items related to the dispatch and logging functions

Item	Quantity	Unit lease cost	Extended Cost
	Total Dispatch related costs		\$

BACKUP (PORTABLE) CONSOLE EQUIPMENT

Item	Quantity	Unit lease cost	Extended Cost
Console			
Installation			
Miscellaneous (add items as required for complete system)			
	Total Dispatch related costs		\$

PROPOSAL COST DETAIL

**PORTABLE, MOBILE AND DESKTOP RADIO EQUIPMENT
STANDARD RADIO PACKAGE AS DESCRIBED**

Type	Model Name Or Model Number	Per unit monthly Lease cost
Portable (PS)		
High Tier		
Mid Tier		
Low Tier		
Portable (Gen Gov)		
High Tier		
Mid Tier		
Low Tier		
Mobile		
High Tier		
Mid Tier		
Low Tier		
Desktop Fixed		
High Tier		
Low Tier		

SUBSCRIBER UNIT OPTION COSTS

These costs are for additional items beyond the per unit cost of option items purchased with subscriber units as described in the RFP

Description	Per unit option cost
Voice Encryption	
Intrinsically Safe	
Integrated voice/data capability	
Over-the-Air Programming	
Private Call capability	
Text	
GPS	
Leather Carrying Case	
Belt Clip	
Spare Battery	
Shoulder Mic without Antenna	
Shoulder Mic with Antenna	
Covert Microphones	
12 volt vehicular chargers	
AC Gang Charger (6 unit)	
AC single unit charger	
Programming	
Vehicular repeater	
Vehicular Adaptor	
Misc (Define in Detail)	

(Add pages as required)
PROPOSAL COST DETAIL
INSTALLATION AND PROGRAMMING

List the installation costs of all mobiles, desktop radios and remotes. Identify the individual types of radios, quantities, unit costs and extended costs for all items. Installation costs include programming, remote wiring, etc. where necessary.

Radio / vehicle Type	Installation Description	Unit Cost	Extended Cost

Add lines if necessary to completely describe installation/programming costs

Total Installation Cost	\$
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PROPOSAL COST DETAIL
TRAINING

Type of Training	Included?			Cost
User Training	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Dispatcher Training	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
System Management Training	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Total Cost of Training				\$

NOTE: If training is not broken down by type, check appropriate boxes and enter total amount.

Exhibit A - Structures Requiring In-Building Coverage

Name	Address	
John A Cumber Primary School	44 FOUNTAIN RD	GCM
John Gray High School	73 ACADEMY WAY	GCM
University College of the Cayman Islands	168 OLYMPIC WAY	GCM
International College	595 HIRST RD	GCM
Edna M Moyle Primary School	907 NORTH SIDE RD	GCM
East End Primary School	17 EASTLAND DR	GCM
Savannah Primary School	1659 SHAMROCK RD	GCM
Prospect Primary School	169 POINDEXTER RD	GCM
Red Bay Primary School	271 SHAMROCK RD	GCM
Lighthouse School	223 SHAMROCK RD	GCM
Triple C School	74 FAIRBANKS RD	GCM
St. Ignatius Prep School	599 WALKERS RD	GCM
Cayman Prep & High School	559 WALKERS RD	GCM
Cayman Islands Further Education Centre	515 WALKERS RD	GCM
Cayman Preparatory School	242 SMITH RD	GCM
George Town Primary School	179 SCHOOL RD	GCM
Cayman International School	95 MINERVA DR	GCM
West End Primary School	12 COTTON TREE BAY RD	CYB
Layman E. Scott Snr. High School	941 DENNIS FOSTER RD	CYB
Spot Bay Primary School	107 SPOT BAY RD	CYB
New John Grey High School (not open)	135 OLYMPIC WAY	GCM
Sunrise Adult Training Centre	181 POWERY RD	GCM
Clifton Hunter High School	311 FRANK SOUND RD	GCM
Bodden Town Primary School	64 CONDOR RD	GCM
Public Works Department	386 NORTH SOUND RD	GCM
Central Police Station	69 ELGIN AVE	GCM
Craddock Ebanks Civic Centre	923 NORTH SIDE RD	GCM
Dica Brown Memorial Health Centre	925 NORTH SIDE RD	GCM
Elliott Conolly Civic Centre	623 AUSTIN CONOLLY DR	GCM
East End Police Station	460 AUSTIN CONOLLY DR	GCM
William Allen McLaughlin Civic Centre	80 JOHN MCLEAN DR	GCM
Lilith McLaughlin Memorial Health Centre	2367 SEA VIEW RD	GCM
Caribbean Haven	2409 BODDEN TOWN RD	GCM
Ebenetus Hall	51 CLIFF HILL LN	GCM
James M. Bodden Sr. Civic Centre	445 BODDEN TOWN RD	GCM
Department of Vehicle Licensing	990 CREWE RD	GCM
The Pines Retirement Home	60 PINES DR	GCM
HMP Northward	48 SHEFFIELD DR	GCM
Frances Bodden Girls Home	112 LOTTERY RD	GCM

HMP Fairbanks	73	FAIRBANKS RD	GCM
RCIP Traffic Department	24	LYNDHURST AVE	GCM
Immigration Department	94	ELGIN AVE	GCM
Radio Cayman	111	ELGIN AVE	GCM
Education Department	130	PRINTER WAY	GCM
National Archive	37	ARCHIVE LN	GCM
Port Authority	110	PORTLAND RD	GCM
Public Works Department	370	NORTH SOUND RD	GCM
Marco Giglioli Building	99	RED GATE RD	GCM
Cayman Islands Environmental Centre	580	NORTH SOUND RD	GCM
Legislative Assembly	33	FORT ST	GCM
Courthouse	61	EDWARD ST	GCM
Port Authority	45	HARBOUR DR	GCM
Government House	1195	WEST BAY RD	GCM
West Bay Fire Station	2204	WEST BAY RD	GCM
West Bay Police Station	242	WEST CHURCH ST	GCM
West Bay Health Centre	186	REV BLACKMAN RD	GCM
Little Cayman Police Station	256	SPOT BAY RD	LYB
Public Works Department	204	SPOT BAY RD	LYB
Terminal & Fire Station	840	GUY BANKS RD	LYB
Fireman Residence	64	BLOSSOM VILLAGE DR	LYB
Government House	96	BLOSSOM VILLAGE DR	LYB
Arrivals & Departures Terminal	25	CHURCH CL	CYB
Cayman Brac Fire Station	57	CHURCH CL	CYB
District Administration Building	19	KIRKCONNELL ST	CYB
Kirkconnell's Community Care Centre	207	DENNIS FOSTER RD	CYB
Faith Hospital	217	DENNIS FOSTER RD	CYB
Public Works Department	1042	DENNIS FOSTER RD	CYB
Aston Ruddy Centre	264	ASHTON REID DR	CYB
Day Care Centre	296	ASHTON REID DR	CYB
Custom's Warehouse	385	CREEK RD	CYB
Cayman Brac Police Station	9	IVORY LN	CYB
Government Administration Building	133	ELGIN AVE	GCM
Owen Roberts Airport	298	OWEN ROBERTS DR	GCM
Frank Sound Fire Station	403	FRANK SOUND RD	GCM
MRCU	223	SONGBIRD DR	CYB
Immigration Detention Centre	71	FAIRBANKS RD	GCM
RCIP Marine Base	1101	HIRST RD	GCM
Morritt's Tortuga Club	2289	QUEENS HWY	GCM
Grand Cayman Beach Suites	747	WEST BAY RD	GCM
Castaway Coves	2159	QUEENS HWY	GCM

Royal Reef Resort	2221	QUEENS HWY	GCM
Treasure Island	269	WEST BAY RD	GCM
Comfort Suites	22	PIPER WAY	GCM
Kimpton Hotel (Under construction)	60	RALEIGH QUAY	GCM
Marriott Resort	389	WEST BAY RD	GCM
Ritz-Carlton Resort	1012	WEST BAY RD	GCM
Sunshine Suites	1465	PENINSULA AVE	GCM
Westin Casuarina Resort & Spa	1149	WEST BAY RD	GCM
Cobalt Coast Suites & Restaurant	18	SEA FAN DR	GCM
Ugland House II	121	SOUTH CHURCH ST	GCM
Appleby	75	FORT ST	GCM
Walkers	190	ELGIN AVE	GCM
Kirk House	22	ALBERT PANTON ST	GCM
Butterfield Bank	12	ALBERT PANTON ST	GCM
CUC	511	NORTH SOUND RD	GCM
One Technology Square - LIME HQ	19	EASTERN AVE	GCM
Camana Bay		ESTERLEY TIBBETTS HWY	GCM
Health City	1283	SEA VIEW RD	GCM

Exhibit B-Talk Group

Department	No of Talkgroups
ATC Patch Channels	2
Caribbean Haven Residential Centre	1
Cayman Islands Airport Authority	5
Cayman Islands Cadet Corp	1
Cayman Islands Emergency Communications	1
Cayman Islands Fire Service	12
Cayman Islands National Museum	1
Cayman Islands Postal Service	1
Cayman Islands Red Cross	2
Civil Aviation Authority	1
Computer Services Department	1
Department of Agriculture	1
Department of Children & Family Services	2
Department of Environment	4
Department of Environmental Health	3
Department of Immigration	3
Department of Planning	4
Department of Vehicle & Equipment Services	2
District Commissioners Office	1
Elections Office	4
Facilities Management	4
Government Information Services	1
Governor's Office	1
Hazard Management Cayman Islands	1
Health Services Authority	8
Her Majesties Customs	8
Her Majesties Prison	6
Information and Communications Technology Authority	1
Lands & Survey Department	6
Legislative Assembly	1
Ministry of Community Affairs, Youth & Sports	1
Ministry of District Administration, Tourism & Transport	1
Ministry of Education, Employment & Gender Affairs	1
Ministry of Finance & Economic Development	1
Ministry of Home Affairs , Health & Culture	1
Ministry of Planning, Lands, Agriculture, Housing & Infrastructure	1
Mutual Aid	2
National Archives	1
National Emergency Channels	16
National Housing Development Trust	1
Petroleum Inspectorate	1
Port Authority Cayman Islands	5
Portfolio of the Civil Service	1
Public Works Department	8
Radio Cayman	1
Royal Cayman Islands Police Service	12
VHF Patch Channels	4
Water Authority Cayman Islands	4

Exhibit C – Current Inventory

AGENCY	XTS 3000	PRO 7750	XTS 1500 Base	XTS 1500 HH	XTS 2250 (407)	XTS 2250 (205)	XTL 2500 Base	XTS 5000	APX 7000	APX 2000 HH	APX 2000 Mobile
GAB					1	12					
Min of Tourism					4	8					
Agriculture		5									
Archive		2									
Brac Power & light						1					
Cadets		2			10						
CAA						2					
Lime						1					
CIAA		51			2	63	8			20	4
Civil Service					3	3					
Computer Service				8							
Counselling					4						
Dapah/DAWLA					20	4	1				
DOE						19	1				
HMCI		54		2	13	136	16		2	10	2
DOEH		15				38	7				
DVES		4			3		1				
FIRE	35					20	25	3			
GIS						7					
Govern Office	1				5						
Hospital -EMT	10	14			18	4				6	1
Immigration		1			10		2				
Lands and Survey						10					
District Admin					3						
Min of Health					3	3				2	
MRCU		2									
Planning						2					
NEC		11	21	19			6				
RCIP	106				121	153	10	17			
Port					2	9	2				
Post Office						5					
Prison					13	51	3				
PWD		22				47	3				
ICTA						1					
Radio Cayman						3					
DCFS					4						
Customs	9	2					5	12			
Water Authority		10		1		7					
911	1					6	6				
RPCU						10					
NHDT						2					
Red Cross		5			4	7					
Total	162	200	21	30	243	634	96	32	2	38	7

Exhibit D – Evaluation Criteria Scoring Sheet

Evaluation Criteria		Possible Points
Proposer's Qualifications and Experience with Similar Projects		
1	Responsiveness to customer requirements and understanding of the project	6
2	Company experience	5
3	Team experience in similar projects	4
Sub-Total		15
System Features and Functional Requirements		
1	Compliance with specifications	10
2	Superior design and value added features	2
Sub-Total		12
Guaranteed Radio Coverage and Capacity		
1	Compliance with specifications	20
2	Coverage and capacity guarantees beyond specifications	5
Sub-Total		25
Consoles		
1	Acceptability of console design and features	4
3	Availability of portable/backup consoles	1
Sub-Total		5
Price		
1	Price	30 *
Sub-Total		30
Installation management, maintenance and support		
1	Compliance with specifications	3
2	Warranty, Maintenance, and Support programs beyond specifications	2
3	Training Program	3
4	Implementation with no down time	5
Sub-Total		13
Total		100

Exhibit E– Exceptions

All variations, alternatives and exceptions must be described in detail following this checklist	Read and Agreed	Variation / Alternative	Exception
1. Instructions to Proposers			
2.1.Receipt of RFP Documentation			
2.2. Timetable			
2.3. Questions, Queries and Clarifications			
2.4. Pricing			
2.5. Confidentiality			
2.6. Compliance			
2.7. Non-Binding Document			
2.8. Non Canvassing			
2.9. Additional Information			
2.10 Purpose			
3.1 Response to RFP items			
3.2 Multiple Proposals			
3.3 Response Format			
3.4 Responses in English			
3.5 Response Layout			
3.6 Evaluation Criteria			
4. Existing Public Safety Radio System			
5. System and Site Visits			
6.0 Proposal Submission			
6.1 Proposal Cover Sheet			
6.2 Proposer Cover Letter			
6.3 Proposer Questionnaire			
6.4 Project Team			
6.5 Project Management Methodology			
6.6 References			
6.7 General Characteristics of Proposer's Solution			
6.8.1.1 General			
6.8.1.2 Public Safety			
6.8.1.3 General Government			
6.8.1.4 Dispatch Centers			
6.8.2.1 General			
6.8.2.2 Talk Paths			
6.8.2.3 Call Privacy			
6.8.2.4 Over The Air Programming			
6.8.2.5 Logging Recorder Interface			
6.8.2.6 Other Requirements			
6.8.2.7.1 Encryption			
6.8.2.7.2 Conventional Backup			
6.8.2.7.3 Simplex			
6.8.2.8 Backup Consoles			
6.8.2.9 Dispatch Center			
6.8.3 Interoperability			
6.8.4.1 General			
6.8.4.2 Mobile Radio Equipment			
6.8.4.3 Portable Radio Equipment			
6.8.4.3.1 GPS microphones			
6.8.4.3.2 Unit location System			

All variations, alternatives and exceptions must be described in detail following this checklist	Read and Agreed	Variation / Alternative	Exception
6.8.4.4 Control Station Equipment			
6.8.4.5 Fixed Site Equipment Radio			
6.8.4.6 Site to Site Connectivity			
6.8.4.6.1 Microwave requirements			
6.8.5.1 General			
6.8.5.1.1 Analog connectivity at sites			
6.8.5.2. Infrastructure Functionality			
6.8.5.3 Site Antenna Systems			
6.8.5.4 System Control			
6.8.5.5 Voice Encryption			
6.8.5.6 Logging Recorder			
6.8.6.1 General			
6.8.6.2 Service Area			
6.8.6.3 Propagation Analysis			
6.8.6.3.1 Sites			
6.8.6.3.2 Propagation Studies			
6.8.6.4 Coverage Acceptance Criteria			
6.8.6.5 Operation of Radios in a High Noise			
6.8.7.1 General			
6.8.7.2 Radio Console Types			
6.8.7.2.1 Optional Remote Console Capability			
6.8.7.3.1 Dispatch Console Reliability			
6.8.7.3.2 Power Supply			
6.8.7.3.3 Flat Panel Display			
6.8.7.3.4 Headset Jack Configuration			
6.8.7.3.5 Footswitch			
6.8.7.3.6 Time Generator System			
6.8.7.3.7 Operating System and Network Mgmt			
6.8.7.4.1 System Interfaces			
6.8.7.5 Console Furniture			
6.8.7.5.1 Furniture System Grounding			
6.8.7.5.2 General Information – Dispatch Centers			
6.8.8.1 Requirements			
6.8.9.1 Phasing of New System			
6.8.9.2 Parallel Implementation			
6.8.10.1 Warranty of System Performance			
6.8.11 Maintenance			
6.8.12 Radio Programming Requirements			
6.8.13 Training			
6.9 Exceptions to Functional Response			
6.10.1 Proposal Pricing Summary Sheets			
6.10.2 Maintenance Costs			
6.10.3 Future Purchase Considerations			
6.10.4 Subscriber Equipment Pricing			
7.0 Proposal Authorization Form			
8.0 Legal Agreements			

Signature _____ Title _____

Company _____