**AIR TRAFFIC AND NAVIGATION SERVICES SOC. LTD**

**REPUBLIC OF SOUTH AFRICA**



**APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY AND SUPPORT OF THE PORTABLE EMERGENCY HANDHELD RADIOS.**

**REQUEST FOR PROPOSAL: ATNS/TPQ/RFP037/23.24/PORTABLE EMERGENCY HANDHELD RADIOS**

**TECHNICAL SPECIFICATION**

**PROJECT MANAGEMENT**

**LOGISTIC SUPPORT**

**Version 2**

**Volume 2, 3, 4**

**OCTOBER 2023**

**The information contained within this document is confidential to ATNS in all respects and it is hereby acknowledged that the information as provided shall only be used for the preparation of a response to this document. The information furnished will not be used for any other purpose than stated and that the information will not directly or indirectly, by agent, employee or representative, be disclosed either in whole or in part, to any other third party without the express written consent by the Company or its representative.**

|  |
| --- |
| TABLE OF CONTENTS |

[TABLE OF CONTENTS 2](#_Toc144725582)

[ABBREVIATIONS AND ACRONYMS 4](#_Toc144725583)

[**1** **GENERAL INSTRUCTIONS TO TENDERERS** 6](#_Toc144725584)

[**2** **PROJECT INTRODUCTION** 7](#_Toc144725585)

[2.1 Background 7](#_Toc144725586)

[2.2 Scope of Work 7](#_Toc144725587)

[VOLUME 2 – TECHNICAL SPECIFICATIONS 9](#_Toc144725588)

[**3** **GENERAL SPECIFICATIONS** 10](#_Toc144725589)

[3.1 Environmental Conditions 10](#_Toc144725590)

[3.2 Power Requirements 11](#_Toc144725591)

[3.3 Life Span 13](#_Toc144725592)

[3.4 Antenna 13](#_Toc144725593)

[**4** **SYSTEM SPECIFICATIONS** 14](#_Toc144725594)

[4.1 Transmitting Function 14](#_Toc144725595)

[4.2 Receiving Function 15](#_Toc144725596)

[**5** **OPERATIONAL REQUIREMENTS** 15](#_Toc144725597)

[5.1 Operating Band 15](#_Toc144725598)

[5.2 Display and User Interface 16](#_Toc144725599)

[5.3 Channel Requirements 17](#_Toc144725600)

[5.4 Noise Cancellation 18](#_Toc144725601)

[5.5 Squelch Requirements 18](#_Toc144725602)

[5.6 Miscellaneous 19](#_Toc144725603)

[**6** **TRAINING SYSTEM** 20](#_Toc144725604)

[**7** **SYSTEM INTERFACE REQUIREMENTS** 21](#_Toc144725605)

[7.1 Interfaces 21](#_Toc144725606)

[**8** **SUPPORTING INFRASTRUCTURE** 21](#_Toc144725607)

[8.1 Mounting Brackets 21](#_Toc144725608)

[8.2 External Antenna 22](#_Toc144725609)

[VOLUME 3 – PROJECT MANAGEMENT REQUIREMENTS 24](#_Toc144725610)

[**9** **PROJECT MANAGEMENT** 25](#_Toc144725611)

[9.1 General 25](#_Toc144725612)

[VOLUME 4 – LOGISTIC SUPPORT REQUIREMENTS 27](#_Toc144725613)

[**10** **LOGISTICS AND GUARANTEE** 28](#_Toc144725614)

[10.1 Support 28](#_Toc144725615)

[10.2 Guarantee 28](#_Toc144725616)

[10.3 Manuals 29](#_Toc144725617)

[10.4 Delivery 29](#_Toc144725618)

|  |
| --- |
| ABBREVIATIONS AND ACRONYMS |

|  |  |
| --- | --- |
| AC | Alternating Current |
| AGC | Automatic Gain Control |
| ATA | Aviation Training Academy |
| ATC | Air Traffic Controller |
| ATNS | Air Traffic and Navigation Services SOC. Ltd. |
| ATS | Air Traffic Service |
| CATS | Civil Aviation Technical Standards |
| CDRL | Contract Data Requirements List |
| dB | Decibels |
| DC | Direct Current |
| FACT | Cape Town International Airport |
| FAPE | Port Elizabeth International Airport |
| FAGG | George Airport |
| FAEL | East London Airport |
| FAUT | Mthatha Airport |
| FALE | King Shaka International Airport |
| FAPM | Pietermaritzburg Airport |
| FAVG | Virginia Airport |
| FABL | Bram Fischer International Airport |
| FAKM | Kimberley Airport |
| FAUP | Upington International Airport |
| FAOR | OR Tambo International Airport |
| FALA | Lanseria International Airport |
| FAWB | Wonderboom National Airport |
| FAGM | Rand Airport |
| FAPN | Pilanesberg International Airport |
| FAPP | Polokwane International Airport |
| FAKN | Kruger Mpumalanga International Airport |
| FAMM | Mahikeng Airport |
| Hz | Hertz |
| ICAO | International Civil Aviation Organisation |
| kHz | kilohertz |
| LED | Light Emitting Diode |
| MHz | Megahertz |
| OEM | Original Equipment Manufacturer |
|  |  |
|  |  |
| PMP | Project Management Plan |
| PTT | Push to Talk |
| SINAD | Signal to Noise and Distortion |
| µV | microvolts |
| VHF | Very High Frequency |
| V | Volts |
| W | Watts |
|  |  |

1. **GENERAL INSTRUCTIONS TO TENDERERS**

The Tenderer shall submit all responses, diagrams, project management documentation and drawings according to the GENERAL INFORMATION AND INSTRUCTIONS TO TENDERERS document and in the English language.

To assist Tenderers only, each paragraph or article has been appended throughout with the letters “(M)”, “(D)”, “(O)” or “(I)”, to indicate whether the requirement is **M**andatory, **D**esirable, **O**ptional or for **I**nformation only.

**ALL RESPONSES TO THE REQUIREMENTS IN THIS DOCUMENT SHALL BE PROVIDED AS FOLLOWS:**

TENDERERS SHALL RESPOND IN FULL TO EACH ITEM IN THE FORMAT PROVIDED AND REFERENCES (CHAPTER, SECTION, PAGE NUMBER, PARAGRAPH NUMBER) TO DOCUMENTS AND RELEVANT INFORMATION SUPPORTING THE RESPONSES SHALL BE INDICATED IN THE SPACE PROVIDED. THIS INFORMATION WILL BE THE **ONLY RESPONSE USED FOR THE EVALUATION AND ASSESSMENT**.

Responses, provided in the space allowed, that are not clear or inadequate or the lack thereof shall be interpreted as **“Not Compliant”** even though the compliance column is declared as “Comply” and/or the Tenderer’s offer meets the requirement. Tenderers shall ensure that each response correctly addresses the requirement stated. Responses not addressing the requirement of the specific paragraph shall be interpreted as **“Not Compliant”**.

Tenderers shall declare compliance to each and every paragraph of this document in the column labelled “Compliance” as follows:

C: fully compliant = 2 points:

PC: partly compliant = 1 point;

NC: not compliant = 0 points.

Noted: Noted and accepted (applicable to paragraphs marked as “I”, not containing requirements)

Tenderer’s shall, for paragraphs declared “PC” or “NC”, include a statement as to the nature of the variation and may additionally supply supporting information in the space provided to demonstrate how the proposal meets the needs of ATNS.

Paragraphs marked “(M)”, indicates that the requirement is mandatory and proposals not compliant with the requirement shall be disqualified for further evaluation.

Paragraphs marked “(D)”, indicates that the requirement is desirable, and the tenderer is expected to declare their level of compliance, formal response and reference supporting documents.

Paragraphs marked “(I)”, indicates that the requirement is for information, however the tenderer is still expected to respond and provide information if requested. Any information gathered herein may form part of the contractual terms.

Paragraphs marked “(O)”, indicates that the requirement is optional, and the tenderer may decide how to respond.

1. **PROJECT INTRODUCTION**

## Background

SA-CATS 172.03.4 stipulates that every ATC facility must have the means to monitor the emergency frequency 121.5 MHz independent of mains and standby radio equipment. VHF transceiver radios are used to monitor the emergency frequency 121.5 MHz and for use as a radio backup in the event of total Very High Frequency (VHF) communication failure. VHF transceiver radios are furthermore used by the technical personnel to communicate with the ATC (Air Traffic Controller) when performing their duties on the airside of the airport.

The emergency (mobile) VHF transceiver radios refer to the portable radios that are used by maintenance personnel. These radios are kept at the maintenance centres/ control towers.

The emergency (mobile- vehicle) VHF transceiver radios refer to the portable radios that are installed in ATNS maintenance vehicles, used by ATNS technical personnel.

The standby (fixed) VHF transceiver radios are the portable radios that are kept in the Air Traffic Control tower and are used to monitor the emergency frequency 121.5 MHz independent of the main and standby radio equipment.

## Scope of Work

The project caters for the replacement of portable emergency radios at the airports listed in Table 1.

The project scope includes:

1. Supply and delivery of the portable emergency radios.
2. Support of the new portable emergency radios.

Table 1: Requirements per Site

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Station** | **Emergency (Mobile)** | **Emergency**  **(Mobile-Vehicle)** | **Standby (Fixed)** | **Total Number of Radios** |
| 1 | FACT | 7 | 0 | 0 | 7 |
| 2 | FAPE | 5 | 3 | 0 | 8 |
| 3 | FAGG | 1 | 0 | 2 | 3 |
| 4 | FAEL | 4 | 0 | 1 | 5 |
| 5 | FAUT | 1 | 0 | 0 | 1 |
| 6 | FALE | 9 | 2 | 0 | 11 |
| 7 | FAPM | 1 | 0 | 1 | 2 |
| 8 | FAVG | 1 | 0 | 1 | 2 |
| 9 | FARB | 1 | 0 | 0 | 1 |
| 10 | FABL | 4 | 0 | 0 | 4 |
| 11 | FAKM | 1 | 0 | 0 | 1 |
| 12 | FAUP | 1 | 0 | 0 | 1 |
| 13 | ATA | 2 | 0 | 0 | 2 |
| 14 | FAOR | 2 | 0 | 0 | 2 |
| 15 | FALA | 1 | 0 | 2 | 3 |
| 16 | FAWB | 1 | 0 | 1 | 2 |
| 17 | FAGM | 1 | 0 | 1 | 2 |
| 18 | FAPN | 1 | 0 | 1 | 2 |
| 19 | FAPP | 1 | 0 | 1 | 2 |
| 20 | FAKN | 1 | 0 | 1 | 2 |
| 21 | FAMM | 1 | 0 | 1 | 2 |
| 22 | Spare | 3 | 0 | 0 | 3 |
|  | **TOTAL** |  |  |  | **68** |

# VOLUME 2 – TECHNICAL SPECIFICATIONS

1. **GENERAL SPECIFICATIONS**

The term VHF transceiver herein refers to the emergency (mobile) radios or standby (fixed) radios. Specifications as stated in this document are applicable to all VHF transceivers.

## Environmental Conditions

1. The VHF transceiver and all its auxiliary components shall withstand and operate within specifications under the environmental conditions as provided in Table 2. Bidders shall include data sheets to indicate compliance with the values and tolerances in the table below. (D)

Table 2: Environmental Conditions

|  |  |
| --- | --- |
| Ambient Temperature | 10 °C to 40 °C |
| Relative Humidity | 0% to 80% non-condensing |
| Altitude | 0 to 3600 meters |

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall be dust and waterproof with a minimum Ingress Protection of 54 (IP54). The Bidder shall provide supporting information indicating how this requirement will be achieved. D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Power Requirements

1. The VHF transceiver shall accommodate multiple power supply requirements, 230 VAC and 12 Vdc. Bidders shall provide specifications of the power supply of the transceiver offered. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall be delivered with a battery charger that shall operate from a mains power supply as defined below (D):

* 230 VAC, Tolerance: +15%, ‑15%
* Frequency: 50 Hz, Tolerance: +2 Hz, -2 Hz

The Bidder shall provide supporting information indicating how this requirement will be achieved.

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall have a battery overcharge protection to avoid degrading of the battery life. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall be supplied with lithium-ion batteries. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The batteries shall be rechargeable and withstand the environmental conditions as stated herein. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The batteries shall have a standby backup capacity of 8 hours. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The recharge time and expected battery life of the proposed batteries shall be provided. (I)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The conditions under which the expected battery life can be achieved shall be provided. (I)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Life Span

1. The VHF transceiver and its auxiliaries shall operate within the environmental conditions stated in Chapter 2 Section 1.1, for a minimum period of 10 years. Bidders shall indicate to what extent this requirement may be exceeded. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Antenna

1. The VHF transceiver shall have a flexible whip or spring steel band antenna with an impedance of 50 Ohm. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. **SYSTEM SPECIFICATIONS**

## Transmitting Function

1. VHF transceiver shall have a carrier output power of at least 5W. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall have an adjustable transmit time-out timer, to prevent continuous transmission. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The frequency error shall be within ± 1 x 10-6 over the whole VHF range and under the environmental conditions stated herein. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The transceiver shall achieve a peak modulation factor of at least 85%. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Receiving Function

1. The VHF transceiver shall have a receiver sensitivity of greater or equal to 12 dB SINAD at a voltage of 2 microvolts or less (≥12 @ ≤ 2 µV). The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall be tuneable over the frequency range of 117.975 to 137 MHz without any change of elements. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. **OPERATIONAL REQUIREMENTS**

## Operating Band

1. The VHF transceiver shall operate on the air-band frequency range between 117.975 MHz and 137 MHz. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall operate in simplex mode that is, transmitting and receiving in turns. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall by default be in the receiver mode unless it is transmitting. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Display and User Interface

1. The VHF transceiver shall have an intuitive user interface to guide the user in operating the system. Bidders shall provide the layout of the user interface of their proposed solution. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall have a light emitting diode (LED) display to show operating information, that is: The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)
2. Operating frequency
3. Channel
4. Radio on or off
5. Operational status (e.g., transmitting, receiving or standby, etc.).
6. Power source (e.g., DC, AC or charging)
7. Battery status (Low battery, charging, fully charged, etc.)
8. Error messages.

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Channel Requirements

1. The VHF transceiver shall support 25 kHz and 8.33 kHz channel spacing. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall have at least twenty (20) programmable memory channels. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Noise Cancellation

1. The VHF transceiver shall incorporate a noise filtering mechanism to reduce background noise. Bidders shall indicate how their proposed solution shall achieve this. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Squelch Requirements

1. The VHF transceiver shall have an automatic squelch function to detect the signal level and automatically adjusts the squelch level to maintain a received call. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall also have a manual squelch function to enable adjustment of the squelch level. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall have a squelch test function to manually open the squelch for testing purposes. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Miscellaneous

1. The VHF transceiver shall be supplied with a hand-held microphone with a push to talk (PTT) switch and an internal loudspeaker. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall come in a portable, durable case. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The VHF transceiver shall be provided with a hand microphone, an antenna, battery, and a battery charger. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The weight of the VHF transceiver, including battery, hand-held microphone, and an antenna, shall not exceed 5 kg. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. Should ATNS request to view the proposed products, Bidders shall be able to demonstrate their offered product to ATNS. The Bidder shall provide supporting information indicating how this requirement will be achieved. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. **TRAINING SYSTEM**
2. Two (2) VHF transceivers that are the same as the ones presented herein, shall be delivered to the ATA to provide training to technical staff. Bidders shall indicate the these under the relevant Ata sheet in the pricing schedule (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. Two (2) dummy loads shall be delivered to the ATA. Bidders shall indicate the dummy loads in the pricing schedule. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. **SYSTEM INTERFACE REQUIREMENTS**

## Interfaces

1. The VHF transceivers shall have the following interfaces: (D)
   1. Antenna connector.
   2. Microphone connector
   3. Battery charger
   4. Recording download

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. **SUPPORTING INFRASTRUCTURE**

## Mounting Brackets

1. Mounting brackets shall be supplied for all fixed VHF transceivers to mount the radios for ease of retrieval during emergency or evacuations. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The mounting brackets shall be located on the side of the ATC consoles and on the side of the support base surface. The VHF transceivers shall be easily attachable and detachable from the mounting brackets. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The areas of contact for the VHF transceivers shall be protected from wear and tear. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. It shall be possible to charge the VHF transceiver while it’s attached to the mounting bracket. The mounting bracket shall not obstruct the VHF transceiver charging cables. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The existing ATC consoles make provisions for the VHF transceivers with dimensions 270mm x 80mm x 280mm (width x depth x height). (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## External Antenna

1. All transceivers shall be provided with an external antenna that can be plugged by a twist lock connector that is required to enable the use of the VHF transceivers from inside maintenance vehicles. (D)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** |  | | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
|  | | *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
|  | | *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The external antenna shall have a magnetic base to attach on top of maintenance vehicles. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The external antenna shall withstand the environmental conditions stated herein. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

# VOLUME 3 – PROJECT MANAGEMENT REQUIREMENTS

1. **PROJECT MANAGEMENT**

## General

1. A schedule detailing the proposed timelines for the milestones that will ensure the successful completion of the project is required. The proposed schedule, timelines and milestones shall be included in the Bidder response. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The schedule shall clearly indicate the delivery and completion milestones. The target dates for delivery and completion shall be clearly highlighted in the bid response. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Contractor shall provide to the Company at two-weekly intervals (or at other mutually agreed intervals) Project Status Reports, which will capture the project performance to date and makes recommendations for future implementation and changes. Project status shall be presented relative to schedule critical path and cost and shall also include a Risk Report. The Risk Report shall identify risks and the measures taken either to manage or avoid the risks. Project status shall also include the Project Schedule and Schedule Analysis. The Contractor shall promptly submit to the Company the Master Project Schedule which, when updated, shows a negative float or indicates a significant change to the delivery schedule. A draft project communication plan shall be submitted with this bid. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. Bidders shall submit a proposed Contract Data Requirements List (CDRL) which incorporates all data requirements stated in this RFT, together with a delivery schedule. (D).

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

# VOLUME 4 – LOGISTIC SUPPORT REQUIREMENTS

1. **LOGISTICS AND GUARANTEE**

## Support

1. The Bidder shall provide a maintenance and support proposal which includes repairs and replacements of equipment to support ATNS technical personnel during the life cycle of the equipment (10 years). The maintenance support starts after the warranty finishes. The proposal shall be included in the bid response. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Bidder shall provide ATNS with a proposed spares plan to support the system for the required lifespan. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Guarantee

1. All VHF transceivers shall have at least a one (1)-year warranty. The Bidder shall indicate what guarantee are provided on the VHF transceivers offered. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The warranty shall cover all malfunctions on the system as well as their auxiliaries. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Manuals

1. A complete installation manual including test and calibration procedures shall be delivered with each of the VHF transceivers. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. A complete operation manual shall be delivered with each of the VHF transceivers. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

## Delivery

1. Delivery of all VHF transceivers and ancillaries to all stations is the responsibility of the supplier. Delivery shall be made to the stations as per table 3.

Table . Delivery locations

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Station** | **Total Number of Radios** | **Delivery Address** |
| 1 | FACT | 7 | FACT |
| 2 | FAPE | 8 | FAPE |
| 3 | FAGG | 3 | FAGG |
| 4 | FAEL | 5 | FAEL |
| 5 | FAUT | 1 |
| 6 | FALE | 11 | FALE |
| 7 | FAPM | 2 |
| 8 | FAVG | 2 |
| 9 | FARB | 1 |
| 10 | FABL | 4 | FABL |
| 11 | FAKM | 1 |
| 12 | FAUP | 1 | FAUP |
| 13 | ATA | 2 | FAOR |
| 14 | FAOR | 2 |
| 15 | FALA | 3 |
| 16 | FAWB | 2 |
| 17 | FAGM | 2 |
| 18 | FAPN | 2 |
| 19 | FAPP | 2 |
| 20 | FAKN | 2 |
| 21 | FAMM | 2 |
| 22 | Spare | 3 |
|  | **TOTAL** | **68** |  |

The Bidder shall submit a comprehensive delivery plan. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

1. The Bidder shall bear the costs for breakages of any equipment during transport. (D)

|  |  |  |
| --- | --- | --- |
| **COMPLIANCE (C/PC/NC/Noted)** | *Only responding C/PC/NC/Noted will not be accepted without proof.* |  |
| *[INSERT FULL RESPONSE FOR EVALUATION HERE]* | | |
| *[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]* | | |

-------------------------------------END OF DOCUMENT-------------------------------------