ANNEXURE A

Specifications / Terms of reference

1. Purpose of the Bid

1.1. The Independent Communications Authority of South Africa (hereinafter referred to as "the Authority") intends to procure 3 (three) portable RF spectrum analysis tools and 3 (three) directional antenna which supports the Authority's Regional Offices with Monitoring, Enforcement and Spectrum management functions.

2. *Description of the requirement*

2.1. The Authority currently has to perform investigation functions at remotely located sites and inaccessible areas throughout the different existing and new Regional offices across the country of South Africa. The Authority requires specialized portable devices capable of analysing and tracing radio frequency emissions up to a minimum 6GHz. The authority has extended its regional offices to include North West, Mpumalanga and Limpopo provinces. The equipment is a requirement as the new regions do not have appropriate test equipment.

2.2. This equipment is needed to check compliance to radio frequency spectrum licences and resolve harmful interference.

3. Objectives of the Bid

3.1. The purpose of this bid is to procure the supply, support and training of 3 (three) portable RF spectrum analysis tools and 3 (three) directional antenna for the Regional offices. This should include all accessories, measurement standards, associated options and or firmware to provide a complete solution with or without the use of external equipment. Section 5 below details the Hardware Requirements of the equipment required.

3.2. The Authority needs to check compliance to radio frequency spectrum licenses and resolve harmful interference in inaccessible areas as well as analyse, identify, detect and locate hidden signals overlaid on each other.

4. Requirements

Section 5 below (Technical Specifications) defines the configuration and functionality requirements which are imperative in order to fulfil the Spectrum Analysers requirements as set out in this document. Bidders are thus required to demonstrate how the under-mentioned will be achieved. Please provide a comprehensive analysis to these requirements, by indicating whether you comply or not. The supplier will have to demonstrate to ICASA that the equipment works to expected standards before final appointment.

5. Technical Specifications

General Specifications for wideband spectrum monitoring/Analyser receiver. (3 units)

- Receiver Analyser Frequency range: 9 kHz – 6GHz(minimum)
- Unit must be upgradable to include Geographical display, Electronic compass bearing, GPS co-ordinates and Line-of-Bearing for manual and automated Directional Measurements
- RF input 50 Ω connector.
- Full Spectrum and Spectrogram display on colour screen.
- Panorama Scan. High speed FFT scan across user selectable scan range
- Field strength measurement in bar display and in dBuV/m.
- Average, min hold and max hold analysis.
- IF spectrum display range from 1kHz to 10 MHz
- Demodulation modes to include AM, FM, PULSE, I/Q, SSB and CW.
- IF Demodulation Bandwidths 150/300/600 Hz and 1/2/5/10/20/50/100/200/500 kHz.
- The demodulation of audio to be selectable from internal speaker and supplied headphones. (selectable)
- Both hard transit case for and soft carry back- pack to be included for receiver.
- A LAN TCP/ IP 10BaseT Interface is required for the controlling unit intended for full remote control of Analyser.
- Weight of unit must not exceed 3,5 Kg
- 65-megabyte internal storage for recording of measurement data.
- Battery life 4 hours
- Spare battery and drop charger.
- Carry Holster with rain cover.
- Soft carry case

Power requirements

- External AC Power Supply connection or adaptor: 220V@ 50Hz nominal
- 12V vehicle supply with lighter charging point.
- Standard South African wall plug must be fitted to power lead

Directional antenna. (3 Units)

- Frequency Range : 9kHz – 6000 MHz(minimum)
- Built in wide band amplifier.
- Switchable bypass switch for passive mode.
- Integrated GPS receiver and electronic compass.
- Compact in size and not to exceed 2kg in weight.
- Rugged case for transportation.

Remote control software.

- To allow for convenient and efficient operation of the analyser from a PC workstation.
- Graphical displayed results to include IF spectrum / RF panorama with spectrum and/or waterfall diagram.
- Recording and playback of RF and IF signal spectra.
- Marking signals to allow automated frequency list for storage and further analysis.

Software requirements

- Control software should be compatible with Windows© 10.
- Software licenses and upgrades must be valid for 3 years.
- Firmware upgrades to be included for 3 years.

Other specifications and requirements

- All necessary cables, connectors and associated accessories to be included and supplied to ensure a fully functional system must be included in bid
- Portable RF spectrum analysis tool analyser to have a two year warranty
- Telescopic antenna to be included.
- Additional spare battery with drop in charger (high capacity).
- Compatible head phones to be included.

Training

- The cost for training at a centralised point must be included in the bid. Training should be provided over two sessions with a maximum of 12 attendees per session.
- Candidate list will be provided by ICASA.
- Training must include all functions of the analyser including hardware, software and specialised functionality.
- Training materials and documentation to be supplied to all candidates on training list.
- Training should not exceed 1 week in duration at an instance.

Service and Calibration

Bidders shall indicate:

- The extent and location of service facilities for the equipment offered.
- The extent and location of calibration facilities for the equipment offered.
- The calibration interval required on the instrument and associated accessories.

-End of Specifications-