



**MARITIME ORGANIZATION FOR EASTERN
SOUTHERN AND NORTHERN AFRICA – MOESNA**

TENDER NO: MOESNA/OT/06/ PWIS/2025

**TERMS OF REFERENCE FOR THE PROCUREMENT
OF A PORTABLE & WIRELESS INTERPRETATION
SYSTEM**

TERMS OF REFERENCE

MARCH 2025

1. BACKGROUND

MOESNA is an intergovernmental maritime organization whose members are the States of Kenya, Tanzania, Uganda, Zambia, the Democratic Republic of Congo, the Federal Democratic Republic of Ethiopia, Botswana, Burundi and Malawi and is expanding to the rest of the states in eastern, southern and northern regions of Africa. The organization was established in 1967 with the mandate of Promoting, Protecting and Coordinating the shipping and maritime interests of its members and the eastern, southern and northern region at large.

2. OBJECTIVES OF THE ASSIGNMENT

The objective of this assignment is to procure a high-quality portable interpretation system that enhances multilingual communication by providing clear, interference-free audio transmission for interpreters and listeners. The system should be user-friendly, reliable and compliant with international standards, ensuring seamless integration into various event settings. Additionally, the inclusion of an ISO-standard portable booth will ensure a professional and acoustically optimized environment for interpreters.

3. SCOPE OF PROCUREMENT

The supplier shall provide a Portable Interpretation System with the necessary components and accessories. The system should be easy to transport, set up, and operate while providing high-quality audio transmission for interpreters and listeners.

4. TECHNICAL REQUIREMENTS

The interpretation system should consist of the following key components:

4.1. Transmitter

The transmitter should be suitable for 19-inch rack or table-top mounting and shall contain a dedicated slot for one module. The transmitter is the central element in the system. It shall accept analogue or digital input and shall modulate these signals onto carrier waves and transmit these carrier waves to radiators located in the room.

The transmitter should offer the following features and benefits:

- Universal mains power facility for use worldwide
- Distribution of a maximum of 4, 8, 16 or 32 audio channels
- Automatic distribution of emergency messages to all channels
- Flexible configuration of channels and channel quality modes for efficient distribution
- Adjustable sensitivity for each input to enable fine tuning of audio levels
- Test mode, which produces a different frequency tone for each input/channel, with the tone gradually rising as the channels are stepped through.
- Built-in mini infra-red radiator for audio monitoring
- Radiator and system status indication via display
- Automatic standby/on function
- 19" (2U) housing for table top use or rack mounting
- Handgrips for easy transportation
- Mains cable

The transmitter should have the following controls and indicators:

- 2 x 16 character LCD display for status information and transmitter configuration
- Rotary push button for navigation through menus and configuration
- Power on/off switch on front panel

The transmitter should offer the following interconnection facilities:

- Male Euro socket for mains connection
- Slot with audio data bus connector (H 15, female) for accepting audio input and interpreter module
- 4, 8, 16 or 32 cinch connectors for input of asymmetrical audio signals
- 3.5 mm stereo headphone socket for monitoring inputs and channels
- Six BNC connectors for output of HF signal to up to 30 radiators

The transmitter should have the following electrical characteristics:

- Asymmetrical audio inputs: +3 dBV nominal, +6 dBV maximal (+/- 6 dB)
- Symmetrical audio inputs: +15 dBV nominal, +18 dBV maximal (+/- 6 dB)
- Emergency switch connector: emergency control input
- Headphone output: 32 Ohm to 2 kOhm
- HF input: nominal 1 Vpp, minimum 10 mVpp, 75 Ohm
- HF output: 1 Vpp, 6 VDC, 75 Ohm
- Mains voltage: 90 to 260 V, 50 to 60 Hz
- Power consumption: maximal 55 W
- Power consumption (standby): 29 W

4.2. Transmitter Flight Case

The flight case shall be used for storing and transportation of transmitters.

The flight case shall have the following features and benefits:

- Robust construction with reinforced corners
- Easy to carry and store
- Shaped interior
- Holds up to two 19" units

4.3. Radiators and Accessories

a. Medium Power Radiators

The infra-red radiators shall be medium power infra-red radiators. A selectable power output, coupled with the effective directionality of the radiators, shall give very good coverage of the venues or hall with high ceilings.

The radiator shall offer the following features and benefits:

- The medium power radiator covers up to 1000 m² (one carrier, 4 standard quality channels)
- Power output selection for efficiency and economy
- Universal mains power facility for use worldwide
- No fan - cooled by convection - for quieter operation and less moving parts to wear out
- LED indicators for radiator status checking
- Communication between radiator and transmitter for easy checking by the operator
- Automatic switching on when transmitter is switched on and vice versa

- Automatic gain control to ensure the IREDs (infra-red emitting diodes) function with maximum efficiency
- Automatic cable equalization to ensure maximum transmission efficiency with different quality of cables
- Automatic cable termination for simplified installation
- Temperature protection circuitry for automatic switching of radiator from full- to half- power if the temperature becomes too high
- Floor stands, for simplified installation
- Adjustable radiator angle to ensure maximum coverage
- IREDs protected by a cover plate, so the units shall be easy to maintain and clean
- Mains cable

The radiator shall have the following controls and indicators:

- Two yellow LEDs: one on each radiator panel to indicate that this panel is switched on and is receiving carrier waves from the transmitter
- Two red LEDs: one on each radiator panel to indicate that this panel is in standby mode
- Red and yellow LEDs simultaneously illuminated to indicate the radiator panel is malfunctioning
- Red LED flashing and yellow LEDs to indicate the radiator panel is in temperature protection mode
- Power reduction switch to reduce the output of the radiator to half-power
- Two delay compensation switches to compensate for differences in cable lengths between transmitter and radiators

The radiator shall offer the following interconnection facilities:

- Male Euro socket for mains connection
- HF input and output connectors (2 x BNC) for connection to transmitter and loop-through to other radiators

b. Radiators and Cables Flight Case

The flight case shall be used for storing and transportation of radiators and cables.

The flight case shall have the following features and benefits:

- Robust construction with reinforced corners
- Easy to carry and store
- Shaped interior
- Holds one radiator

4.4. Receivers, Battery Packs, Charging Units and Storage Suitcases

a. Receivers

These ergonomically designed receivers shall incorporate the latest electronics technology - including a specially designed IC - to ensure maximum performance and a long battery lifetime.

The receiver shall offer the following features and benefits:

- Specially designed IC for maximum performance and a long battery life time
- Recharging electronics integrated in the chip to ensure optimum charging performance

- 2-digit LCD display with battery and reception status indication
- Synchronization facility so number of available channels is always the same as the number of channels in use by the system. This shall eliminate the need to scroll through unused channels
- Automatic muting of audio signal when the signal is too low, to ensure that the user shall only receive high-quality audio
- Power via disposable batteries (2x AA alkaline batteries, not included) or environmentally-friendly NiMH rechargeable battery pack
- No power used when headphone is disconnected
- Clip for easy wearing
- Measurement mode for easy checking of radiator coverage
- Attractive and stylish design
- Up to 200 hours operation with alkaline batteries
- Up to 75 hours operation with battery pack
- Recharge from empty to full capacity within 1 hour and 45 minutes

The receiver shall have the following controls and indicators:

- 2-digit LCD display with channel number, battery and reception status indication
- On/off button
- Volume control slide adjuster
- Channel selection up/down buttons
- Charging indicator LED

The receiver shall offer the following interconnection facilities:

- 3.5 mm (0.14 in) stereo jack output socket for headphones
- Battery contacts for use with AA alkaline batteries
- Connector for use with battery packs
- Charging contacts on the left-hand side of the receiver for compatibility with LBB 4560/XX charging units

The receiver shall have the following electrical and optical characteristics

- IR irradiance level: 4 mW/m² per carrier
- Angle of half sensitivity: +/-50°
- Headphone output level at 2.4V (battery voltage):
450 mVrms (speech at maximum volume,
32 Ohm headphone)
- Headphone output frequency range: 20 Hz to 20 kHz
- Headphone output impedance: 32 Ohm to 2 kOhm
- Max. signal-to-noise ratio: > 80 dB(A)
- Supply voltage: 1.8 to 3.6 V, nominal 2.4 V
- Power consumption at 2.4 V:
- 15 mA (speech at maximum volume, 32 Ohm headphone)
- Power consumption (standby): < 1 mA

b. NiMH Battery Pack

These NiMH battery packs, available in sets of 10, shall be suitable for use with the receivers.

The NiMH battery pack shall have a temperature sensor for optimal charging process

The NiMH battery pack shall have the following physical characteristics:

The NiMH battery pack shall have the following electrical characteristics:

Voltage	2.4 V
Capacity	1100 mAh

c. Charging Units

The charging units shall be used to recharge and store receiver units.

The charging units shall offer the following features and benefits:

- Accommodation of up to 56 receivers
- Universal mains power facility for use worldwide
- Mains input with loop-through facilities
- Rapid recharging: maximum time required; 1 hour and 45 minutes
- Mains cable

The charging units shall have the following controls and indicators:

- On/off switch

Charging status indication shall be on the receivers

The charging units offer the following interconnection facilities:

- Mains input with loop-through facility; male and female Euro mains socket
- 56 charging contacts. Compatibility with LBB 4540/XX receivers

The charging units shall have the following electrical characteristics:

Mains voltage	90 to 260 V, 50 to 60 Hz
Power consumption	56 receivers charging: 270 W
	Standby, no receivers in the charging unit: 17 W

4.5 Headphones

Lightweight Stereo Headphones

The lightweight stereo headphones shall be suitable for use with the receivers. Dishwasher proof solid ear pads and replacement ear pads shall be suitable for use with these lightweight stereo headphones.

The lightweight stereo headphones shall have the following physical and electrical characteristics:

Connection	1.3 m (4 ft) cable with 3.5 mm (0.14 in) gold-plated jack plug and durable cable
Impedance	32 Ohm
Audio frequency	50 Hz to 20 kHz (-10 dB)
Power handling capacity	50 mW
Sensitivity (1 kHz)	98 dB SPL/earpiece at 1 mW/earpiece

4.6 6-Channel Interpreter Desk and Accessories

a. 6-Channel Interpreter Desk

The 6-channel interpreter desk shall be a single-user, microprocessor-controlled interpreter desk, which shall offer an economical solution for providing interpretations to conference participants. It shall interface with the transmitter via the symmetrical audio input and interpreters module. The floor signal shall be routed from the transmitter to the interpreter desks.

The 6-channel interpreter desk shall offer the following features and benefits:

- Built-in loudspeaker
- Accommodation of 6 different language channels plus the original floor language
- Incoming channel pre-selector key to eliminate the need to manually search through all available language channels
- Quick switching between the floor language and the channel set on the channel selector to reduce the chance of operator errors
- Electronic channel interlock function to prevent interpreters in different booths from using the same output channel
- Auto relay enable function to allow the interpreter to provide the auto relay language (OR2) for relay interpretation
- A disable function on channel B to allow the interpreter to disable channel B while ensuring that the desk remains connected to channel A

The 6-channel interpreter desk shall have the following controls and indicators:

- Microphone mounted on a flexible stem, complete with a light ring, which shall illuminate when the microphone is on
- Headphone volume, treble and bass controls
- A-B channel selector key with channel select indicators
- Six outgoing B-channel select keys with channel select indicators
- Outgoing 'OR2' (auto relay) indicator
- 'Channel engaged' indicators to show which channels are in use by other interpreters
- Microphone 'mute' key

- Microphone activating key with LED status indicator
- Select key with LED indicators for fast switching between the original floor language and the channel set on the channel selector
- Incoming channel 'OR2' (auto relay) indicator to show that the original floor language has been replaced by a transfer interpretation channel, when the auto-relay facility is in operation.
- Incoming language channel selector for headphone monitoring
- Outgoing message key
- Incoming message indicator
- Rotary switch to preset the outgoing channel via the A output

The 6-channel interpreter desk shall offer the following interconnection facilities:

- 3 m cable terminated with a 25-pin sub D-type connector
- 25-pin sub D-type socket for loop-through connections
- 6.3 mm (0.25 in) stereo jack headphone connectors

The 6-channel interpreter shall have the following physical characteristics

b. Interpreter Headphones

These lightweight, dynamic headphones shall be suitable for direct connection to the 6-channel interpreter desk. A set of replacement ear pads shall be suitable for use with these high quality dynamic headphones.

The interpreter headphones shall have the following physical and electrical characteristics:

Connection	1.5 m (59.05 in) cable with 6.3 mm (0.25 in) jack plug
Impedance	250 Hz to 13 kHz (-10 dB)
Power handling	200 mW
Sensitivity (1kHz)	97 dB SPL/earpiece at 0 dBV/system
	96 dB SPL/earpiece at 1 mW/earpiece

c. Extension Cables

The extension cables shall be used to interconnect 6-channel interpreter desks when the standard cabling is too short.

The extension cables have the following physical characteristics:

Type of connectors	25 pole sub-D-type with sliding lock mechanism and 25 pole sub-D-type socket with pin lock mechanism
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d. 2 Person Interpretation Booth

- Standard suited for 2 persons
- Standard size:W1600xD1600xH2000 mm
- Standard 11 panel configuration
- Completely sound proof
- ISO 4043 Standard
- At least 30dB
- 6 castor wheel flight case

BILL OF QUANTITIES

ITEM	DESCRIPTION	QUANTITY
1	Transmitter	1
2	Flight Case (transmitter)	1
3	Medium Power Radiator	2
4	Flight Case (Radiator)	1
5	Infra Red Receiver – 8 Channel	50
6	NiMH Battery Pack (10 pcs)	5
7	Charging/Storage Unit	1
8	Headphones	50
9	6-Channel Interpreter Console	6
10	Interpreter Headphones	6
11	Extension Cables – 5m	6
12	Extension Cables – 20m	3
13	Interpreter Console Case (2 each)	3
14	20m Co-axial Cable	2
15	2 Person Interpretation Booth (ISO Certified)	3

5. WARRANTY AND SUPPORT SERVICES

The supplier must provide:

- At least one (1) year warranty on all components.
- Technical support and maintenance services.
- Training for operators on system setup and troubleshooting.

6. DELIVERY AND INSTALLATION

- The supplier shall deliver the system at the MOESNA headquarters in Mombasa, Kenya
- Full system testing and commissioning must be performed upon installation.
- The supplier must conduct training for end-users.

7. EVALUATION CRITERIA

The supplier's proposal will be evaluated based on the following:

- Compliance with technical specifications
- Experience in providing interpretation systems
- Warranty, after-sales support and training
- Cost-effectiveness and value for money
- Delivery timeline and availability of spare parts

8. PRELIMINARIES EVALUATION

The following preliminaries evaluation shall be considered:

Preliminaries

- Certificate of Registration and/or Incorporation
- Valid VAT/PIN Certificate
- Trading license and/or single business permit
- Valid Tax Compliance Certificate
- Company profile indicating what the firm does, experiences, staffing, etc.
- Declaration stating that the firm has NOT been debarred by any Public Procurement Regulatory Authority.
- Properly Filled in, Signed and stamped Confidential Business Questionnaire.

Refer to the appendix document: Instructions to Bidders and Tender Mandatory forms for more detailed information.

9. APPLICATION MODE

All submissions (**Two Hardcopies and Softcopies**) are to be shared through the provided e-mail below & in properly sealed envelopes clearly marked "**ORIGINAL TENDER**" and "**COPY OF TENDER**" with the title "**PORTABLE & WIRELESS INTERPRETATION SYSTEM**" to:

The Secretary General
MOESNA Secretariat
Palm Drive, Off Links Road, Nyali
P.O Box 89112 – 80100 GPO
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Tel: +254 722 207940/ +254 721 207940
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