
MAG 23 02 PTT - Technical Specification

Quotation Requirement

Provision of MAG's requirement for PTT equipment and Air time (talk groups)

Please include technical specifications for each item offered in your submission as an annex.

Units Types

ICOM IC-SAT 100 or similar capable of full integration

Iridium PTT 9575 or similar is capable of full integration

Docking station

DriveDOCK Iridium

The current capacity that the provider will need to migrate and integrate under the new contract:

41 (Forty One) ICOM IC – SAT 100 with the possibility of expansion (non-country specific)

2 (Two) Iridium PTT 9575

2 (Two) DriveDOCK Iridium for 9575 units

Antennas and associated ancillaries

Talk groups online management platform

Procurement Volume

Estimated value of \$100,000 as an upper cap.

MAG offers no guarantees that the level of purchase for the period covered by this invitation to tender will meet or exceed the indicative figures supplied above.

Technical specifications:

Technical Specification for Iridium/IC- SAT100 Push-to-Talk (PTT) Tender

Introduction:

This technical specification document outlines the requirements for the procurement of Iridium Push-to-Talk (PTT) services, including supply, maintenance, and support. The purpose of this technical tender is to establish a comprehensive solution that enables reliable and efficient communication using the Iridium PTT system.

Scope of Work:

The scope of work includes the following components:

2.1 Service Provision:

- a) The contractor should provide a robust and scalable Iridium PTT service that allows for instant and secure communication between users.
- b) The service should support both group and individual PTT calls, allowing users to create and manage dynamic talk groups.
- c) It should support a wide range of devices compatible with Iridium PTT, including handheld units, vehicle-mounted units, and fixed station units.
- d) The service should provide country, regional and global coverage, ensuring reliable communication in remote and challenging environments where indicated
- e) The contractor should offer flexible service plans tailored to meet the specific needs of the organization, including options for voice and data usage.
- f) The contractor **must have** the provision to be able to support more than one country

2.2 Supply of Equipment:

- a) The contractor should be able to supply a comprehensive range of Iridium PTT devices, including handheld units, vehicle-mounted units, and fixed station units.
- b) The supplied devices should comply with the latest Iridium PTT specifications and standards.
- c) The devices should be rugged, durable, and designed to withstand harsh environmental conditions.
- d) The contractor should ensure an adequate supply of devices, with the ability to scale up the provision based on the organization's requirements.
- e) The devices should support advanced features such as GPS tracking, emergency alerts, and remote device management where required.

2.3 Maintenance and Support:

- a) The contractor should provide comprehensive maintenance and support services for the supplied Iridium PTT devices.
- b) Maintenance services should include routine inspections, testing, repairs, and firmware/software updates as necessary.
- c) The contractor should establish a dedicated technical support team, available 24/7, to handle any queries or issues related to the Iridium PTT service and devices.
- d) The support team should offer timely response and resolution times to ensure minimal disruption to the communication system.
- e) The contractor should provide training programs for system administrators and end-users to ensure proper usage and troubleshooting.

Technical Requirements:

The following technical requirements should be met by the contractor:

3.0 Network Infrastructure:

- a) The contractor should have a robust and redundant network infrastructure to support the Iridium PTT service, ensuring high availability and reliability.
- b) The infrastructure should include satellite gateways, terrestrial links, and network operations centres (NOCs) strategically located for optimal global coverage.
- c) The network should be scalable to accommodate increasing demand and provide seamless connectivity across the service area.

3.1 Security:

- a) The Iridium PTT service and devices should employ strong encryption mechanisms to ensure the confidentiality and integrity of communications.
- b) The contractor should adhere to industry best practices for data security and protection, including secure storage and transmission of user information.
- c) The system should provide user authentication and access control features to prevent unauthorized usage.

3.2 Integration:

- a) The contractor should provide APIs or integration capabilities to facilitate the integration of the Iridium PTT service with existing communication systems, such as dispatch consoles, command centres, or third-party applications.
- b) The integration should enable seamless interoperability and data exchange between the Iridium PTT system and other communication platforms when required.

3.3 Deliverables:

The contractor should deliver the following:

- a) Detailed implementation plan, including timelines and milestones.
- b) Provision of Iridium PTT service, including all necessary hardware and software components.
- c) Supply of Iridium PTT devices as agreed.

4.0 Design and Ergonomics:

- a) The handheld PTT units should be compact, lightweight, and ergonomically designed for ease of use in various operational scenarios.
- b) The units should have a rugged construction, capable of withstanding shocks, vibrations, and exposure to extreme temperatures, humidity, and dust.
 - a) MIL- 810 G IP67/55/54 MIL-STD- 810- C D E and F
- c) The devices should feature a user-friendly interface, including a clear display, intuitive buttons, and a backlit keypad for easy operation in low-light conditions.

4.1 Communication Features:

- a) The handheld units should support full-duplex PTT communication, allowing for simultaneous talking and listening.
- b) They should have a built-in speaker and microphone with noise-cancelling capabilities to ensure clear and intelligible audio transmission.
- c) The devices should provide adjustable volume control and support for external audio accessories, such as headsets or earpieces.
- d) The units should have a PTT button with tactile feedback for easy activation and deactivation of communication.

4.2 Connectivity and Range:

- a) The handheld units should be compatible with the Iridium PTT service and operate on the Iridium satellite network.
- b) They should support multi-network roaming capabilities, allowing for seamless communication transitions between different satellite networks or terrestrial networks when available.
- c) The devices should offer a reliable and extended communication range, enabling global coverage (talk zones) and connectivity in remote and isolated areas.

4.3 GPS and Tracking: (where applicable)

- a) The handheld units should integrate GPS functionality for accurate positioning and tracking of users.
- b) They should support real-time location reporting, allowing for efficient monitoring and coordination of field personnel.
- c) The devices should provide waypoint navigation and breadcrumb tracking features to assist users in navigating unfamiliar terrains.

4.4 Battery Life:

- a) The handheld units should have a long battery life to ensure extended operation without frequent recharging.
- b) The battery should be easily replaceable or rechargeable using standard charging methods.
- c) The devices should have power-saving features and low battery indicators to alert users of battery status.

4.5 Durability and Environmental Protection:

- a) The handheld units should comply with international standards for environmental protection, such as IP67 or MIL-STD-810G.
- b) They should be resistant to water, dust, shock, and vibration, enabling reliable operation in harsh conditions.
- c) The devices should be designed to withstand extreme temperatures and humidity levels.

4.6 Accessories and Expansion:

- a) The contractor should provide a range of accessories for the handheld units, including belt clips, lanyards, carrying cases, and vehicle mounting options where requested /required
- b) The devices should support expansion options, such as external antennas, external speaker/microphone units, or data connectivity ports for additional functionality.

5.0 Compliance and Certifications:

The handheld PTT units should comply with relevant industry standards and certifications, including but not limited to FCC, CE, RoHS, and Iridium PTT device certification.

Note: The above specifications are provided as a general guideline and can be modified or expanded based on specific organizational requirements and preferences.

5.1 Contract Term and Asset Transfer:

- a) The contract term should specify that the new provider will assume ownership and responsibility for the assets and talk zone currently held by the existing provider.
- b) The existing provider should cooperate with the new provider to facilitate a smooth transition of assets and talk zone management.
- c) The asset transfer should include all relevant hardware, software, licenses, and documentation necessary for the operation and maintenance of the Iridium PTT system.
- d) The talk zone, including talk group configurations, user profiles, and any associated data, should be transferred to the new provider's system without loss or disruption.
- e) The transfer of assets and talk zone should be completed within a mutually agreed-upon timeframe, ensuring minimal downtime or interruption to the communication system.
- f) The new provider should conduct a comprehensive audit and verification of the transferred assets and talk zone to ensure accuracy and completeness.

Note: The specific terms and conditions related to asset transfer and talk zone management should be negotiated and agreed upon between the procuring organization and the new provider, taking into consideration legal and contractual requirements.

5.2 Expansion of Service Coverage:

- a) The contract should include a provision that allows for the expansion of service coverage to additional countries upon request by the procuring organization.
- b) The new provider should have the capability to extend the Iridium PTT service to new countries as needed, ensuring global coverage in accordance with the organization's requirements.
- c) The expansion of service coverage should be accompanied by appropriate adjustments to network infrastructure, gateway access, and regulatory compliance in the newly added countries.
- d) The new provider should provide a clear roadmap and timeline for the implementation of expanded service coverage, including any necessary coordination with local authorities and regulatory bodies.

e) The costs associated with expanding service coverage to additional countries should be defined and agreed upon as part of the contract terms and conditions.

Satellite Communications Equipment and Airtime

IC- SAT100

- 57.8 × 135 × 32.8 mm, 2.3 × 5.3 × 1.3 in
- 360 g, 12.7 oz (with BP-300 and antenna)
- Display (W × H, approximate) 33 × 27 mm, 1.3 × 1.1 in (viewing area)
- Operational temperature range –30°C to +60°C, –22 °F to 140 °F
- Audio output power Internal speaker
- External speaker
- 1500 mW typical (At 5% distortion into an 8 Ω load)
- 1000 mW typical (At 5% distortion into an 8 Ω load)
- Battery life (Approximate) 14.5 hours
- Talkgroup 15 groups (Maximum)
- **General Overview:**
 - The PTT IC-SAT100 is a compact and ruggedized Push-to-Talk (PTT) satellite communication device designed for reliable voice and data communication in remote and challenging environments.
 - The device operates over the Iridium® satellite network, offering global coverage, low-latency communication, and seamless connectivity between users.
- **Physical Specifications:**
 - Dimensions: Detailed
 - Weight: Detailed
 - Ruggedized Design: The PTT IC-SAT100 is built to withstand harsh environments, featuring a rugged and durable construction that can withstand shock, vibration, dust, and water ingress (IP67 rating).
 - Display: The device is equipped with a [specify display type and size] for easy navigation and viewing of information.
 - Keypad: The PTT IC-SAT100 includes a [specify keypad type and layout] for intuitive operation and quick access to essential functions.
- **Communication Features:**
 - Satellite Network: The PTT IC-SAT100 operates on the Iridium® satellite network, providing global coverage and reliable communication even in remote areas.
 - Push-to-Talk (PTT): The device supports instant one-to-one and group PTT communication, enabling quick and efficient voice transmissions between users.
 - Low-Latency Communication: The PTT IC-SAT100 offers low-latency communication, minimizing delays and ensuring real-time voice transmission.
 - Encryption: The device incorporates robust encryption algorithms to secure voice and data transmissions, ensuring the confidentiality and integrity of communication.

- **Noise Suppression:** Advanced noise suppression technology enhances voice clarity by reducing background noise and improving overall audio quality.
- **Speaker and Microphone:** The PTT IC-SAT100 features a high-quality speaker and microphone to ensure clear and intelligible voice communication.
- **Data and Messaging Capabilities:**
 - **Text Messaging:** Users can send and receive text messages using the device, allowing for efficient communication in situations where voice communication may not be feasible.
 - **Status and Location Updates:** The PTT IC-SAT100 enables users to share their status and location information, facilitating situational awareness and coordination.
 - **File Transfer:** The device supports the transfer of files and data, allowing users to share important documents, images, and other digital assets.
- **Power and Battery:**
 - **Battery Life:** The PTT IC-SAT100 is equipped with a long-lasting battery that provides extended operation time [Specify battery life and usage conditions].
 - **Charging Options:** The device supports various charging methods, including [Specify charging options: AC, DC, solar, etc.] for flexibility in different environments.
- **Interfaces and Connectivity:**
 - **Bluetooth:** The PTT IC-SAT100 includes built-in Bluetooth functionality, enabling wireless connectivity with compatible peripherals such as headsets or external devices.
 - **USB Port:** The device features a USB port for data transfer and charging purposes, allowing for convenient connectivity with external devices.
- **User Interface and Software:**
 - **Intuitive User Interface:** The PTT IC-SAT100 incorporates a user-friendly interface that is easy to navigate, facilitating quick access to communication features and settings.
 - **Software Updates:** The device supports firmware updates to ensure compatibility with the latest features, enhancements, and security patches.
 - **Management Software:** The PTT IC-SAT100 can be integrated with management software, providing centralized control and monitoring capabilities for efficient fleet management.

Options (non-exhaustive list and further options should be available)

- Battery Pack – BP-300
- Charger – BC- 241
- Multi-Charger – BC- 214N
- Speaker- Microphone – HM- 222
- Tie Clip Microphone HM-163MC

- Antennas FA-S102U/AH-40

Airtime/ Talk Group

MAG will also wish to arrange a flat rate for each Talk Group and Region through the same supplier: As such we will be looking for the following rates:

- Contract Activation Fees
- Cancellation Fees
- Monthly Contract Rates
- Talk Group rates
- Regional rates
- Contract discounts

Talk Group Requirements

Talk groups play a crucial role in Push-to-Talk (PTT) systems, facilitating efficient and organized communication within various organizations or groups. The sizing of talk groups depends on the scale of the operation, ranging from small to medium and large. In a small-scale scenario, talk groups may be designed to accommodate a limited number of users, such as a small team or department. These talk groups ensure effective communication within the defined group, enabling quick information exchange and coordination.

For medium-scale operations, talk groups expand to accommodate larger teams or multiple departments. This allows for seamless communication between different units within an organization, enhancing collaboration and streamlining workflows. The increased size of these talk groups necessitates more extensive coverage and the ability to handle higher user densities while maintaining reliable and clear communication.

In large-scale environments, talk groups serve to connect numerous teams, departments, or even entire organizations. These talk groups encompass a substantial number of users and require robust infrastructure to support extensive coverage, high-capacity communication, and efficient call management. This involves advanced systems capable of handling large volumes of voice traffic, ensuring reliable transmission, and managing the complexity of a large user base.

To meet the diverse requirements of MAG, it is essential for them to have full access to the talk group platform. This allows MAG to reassign and reshape talk group sizes and coverage as needed, adapting the system to evolving organizational structures, team configurations, and communication needs. By granting MAG this flexibility, they can optimize the talk group organization, tailor it to their specific requirements, and ensure efficient communication across their entire operation. This capability empowers MAG to align its PTT system with its dynamic business environment, enhancing productivity and operational effectiveness.

- Small - up to 100,000 km²
- Medium - up to 300,000 km²
- Large – up to 750, 000 km²

