EXPLORER Push-To-Talk (PTT) is a rugged voice dispatch and communication system. It is a cost effective, IP based voice and data communication system designed to replace VHF/UHF based trunk radio systems widely used in the field service, search and rescue, utility, mining and Oil & Gas sectors. The system extends classical Push–To-Talk capabilities to hybrid data networks such as terrestrial 2G/3G/GPRS networks where available supplemented by the Inmarsat BGAN satellite network where no terrestrial network coverage is present. With no user intervention required the system automatically routes voice and data traffic via the least expensive network available.

The EXPLORER PTT solution is the result of 1½ years of field evaluation. The customer, a South American electricity distribution company covering 66,000 miles of distribution lines and a concessional area of 120,000 square kilometers were facing a communication challenge. They were using a traditional VHF trunk radio system provided by an infrastructure of 180 VHF towers with combined satellite and land line backhaul to the dispatch center. The mobile work force consisted of 500+ field engineers maintaining the power grid and serving subscribers on a daily basis. Faced with high infrastructure maintenance costs, poor VHF voice quality and limited coverage the company was looking for an alternative. They were looking for a cost efficient, simple and user friendly communication solution with a PTT/VHF user experience and with improved voice quality, support of data connectivity as well as expanded coverage.

The complete EXPLORER 325 Push-To-Talk solution (3G modem optional)
The EXPLORER PTT solution solved the majority of the built-in challenges of the previous VHF system.

- The use of BGAN and already existing 2G/3G/GPRS networks extended the coverage area.
- Improved voice quality with IP based digital voice quality compared to the analogue VHF voice quality.
- No expensive infrastructure (no VHF towers, no fixed VSAT) and thereby lower maintenance costs.
- High-quality voice but also an on-the-move internet connection.

Simplicity permeates the EXPLORER PTT solution. The look and feel is exactly like the VHF system replaced - only a few buttons (on/off and call) and easy push to transmit communication.

When the system is connected to the cellular networks the cost of communication is typically based on a flat rate data package. A state of the art voice transfer protocol ensures that the bandwidth usage is minimized to an absolute minimum in order for optimal use on background satellite connections.

In summary EXPLORER Push-To-Talk turns traditional satellite communication, cellular networks and the internet into a closed managed Wide Area Network with beyond line-of-sight communication.

The EXPLORER PTT solution forms the basis for communication in remote and challenging environments. It provides a robust and effective means of communication that is particularly valuable when the use of conventional VHF and cellular solutions is not practical. The EXPLORER PTT solution can be used for a variety of applications, including emergency response, disaster management, and remote area management.

The EXPLORER PTT solution is designed to be easy to use and highly reliable, even in environments where traditional communication methods are not available. It is ideal for use in remote and challenging environments, where the use of conventional VHF and cellular solutions is not practical.

In order to secure communication, the PTT box must always be connected to the EXPLORER PTT servers. The network uses a secure connection to ensure that all communication is encrypted and protected from unauthorized access.

The EXPLORER PTT solution is designed to be highly reliable and robust, even in challenging environments. It is able to withstand harsh conditions and is designed to be easy to use and highly reliable, even in environments where traditional communication methods are not practical.

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The EXPLORER Push-To-Talk server infrastructure

The heart of the system is the PTT servers. A server setup initially consists of two standard 19” rack servers that can be placed anywhere connected to the public internet:

1. The PTT server is handling all switching between the mobile units and the dispatchers.
2. The transcoding server handles the voice transcoding and compression

The PTT server can handle any number of users, while the transcoding server can accommodate 20 concurrent calls, more transcoding servers can be added when the need arises. All information is stored in the PTT server including:
- GPS position of each PTT user.
- Statistics on availability of each PTT user on each network.
- Recordings of call logs and voice communication.

Dispatch client software

The Dispatch client software is a combined PABX switchboard and VOIP softphone. The software runs on a standard PC and the dispatcher uses a headset to communicate with the PTT box users in the field. The Dispatch client software, the dispatcher can:
- answer calls from mobile users
- initiate calls to mobile users
- create conference calls between mobile users
- lookup the GPS position of each mobile user on map (google maps or similar).