

IP Connected Rescue

An emergency occurs approximately 3 km inside an underground mine. The rescue team is stationed at that location, where there is access to IP/LAN infrastructure but limited or no direct radio coverage from the surface.



Solutions Overview

Deploying a BatNode at the incident site and connecting it to the mine's internal IP/LAN network via a RS-485 to LAN (IP) converter. It provides instant communication back to the surface or command center.

This setup enables the BatNode to act as a local radio coverage point, bridging communication from the underground rescue team to the broader radio network or dispatcher system located outside the mine.

How it works:

» *Deploy BatNode Underground*

The BatNode inside the mine connects to the converter via RS-485.

» *Connect to LAN via RS-485/IP Converter*

The converter then transmits data over the local IP network to another BatNode–converter pair outside the mine (e.g., in the Security office)

» *Establish End-to-End Connectivity*

If both endpoints are on the same LAN, the configuration is straightforward. If the endpoints are on different networks, the setup becomes slightly more complex, requiring router configuration and potentially VPN tunneling, but it remains entirely feasible.

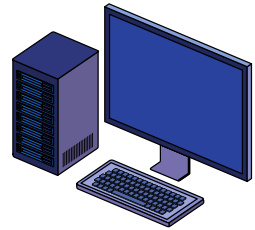
On both sides of the connection, an mPhone device is required to decode the data stream and provide audio input/output, enabling full voice communication.



*Important Note on Safety

Not all converters are ATEX/IECEx certified. If the rescue team operates in a hazardous or explosive zone, use intrinsically safe, certified alternatives, or ensure the first drop node is placed outside the ATEX zone.

BatNode

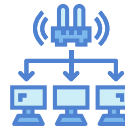


Control room



RS-485 / LAN Converter

LAN IP



Existing LAN network

Underground wireless network

