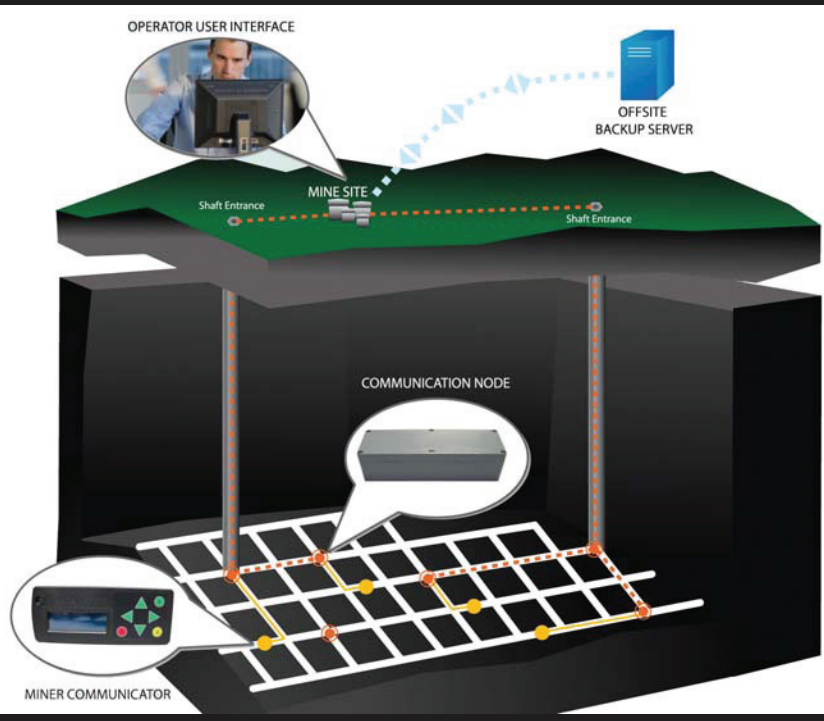


Wireless communications and electronic tracking system

COMMTRAC



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WHAT IT IS:

Strata CommTrac is a truly wireless, battery powered mesh communications and tracking system for underground mining. It consists of an underground network of fixed nodes that communicate with individual miner worn mobile devices to transmit two-way data between the surface and underground. Strata CommTrac is intrinsically safe and MSHA approved.

COMPONENTS COMMUNICATION NODES



Stand-alone, battery operated devices deployed underground and create a mesh communication network. The Communication Nodes do not require an external power supply and have no external antenna. They are powered by four (4) D-cell alkaline batteries and will operate for approximately 10 months. They are approved for use with Energizer E95 and Energizer EN95 Industrial batteries. Device health, battery level and network statistics are reported back to the surface every five (5) minutes.

MINER COMMUNICATOR

Small, compact units worn by miners and function as the system's communicators and trackers. The devices have an LCD screen for reading messages and toggle arrows for composing and sending messages. A high intensity LED light indicates when a message has been received.



GATEWAY TRANSPONDER

A gateway transponder node at the mine entrance interfaces between the underground wireless networks and the above ground networks. They are compatible with multiple types of networks including WiFi, CommTrac surface nodes and fiber optics.

SURFACE INTERFACE

Secure server on-site or at a remote site that provides the interactive digital mine map, text messaging and tracking data. A user friendly graphical user interface displays real-time location tracking of each miner and logs all text message activity. Surface operators interact with underground personnel via this interface. Map layering enables operators to alternate between the underground mine map view and the surface road view. Mine Maps are easily customized and updated.

FUNCTIONS:

MESSAGING –

Two way text message

- Individual or Broadcast
- Canned or Freeform
 - Miner to Surface
 - Surface to Miner
 - Miner to Miner
- Broadcast alerts

TRACKING –

- Periodic ID data transmission
- Location to within 200 feet
- Real-time visual on surface interface
- Bread-crumbs tracking and direction of travel

SYSTEM HIGHLIGHTS

FULLY WIRELESS

- Wireless mesh with no hard-wire backbone
- No requirement of existing communications infrastructure
- Every component underground is intrinsically safe
- Self-healing
- Redundant

BATTERY OPERATED

- No external power supply
- Always on and operating



EASE OF INSTALL

- Simple "pick-n-place" installation of nodes
- No hard-wiring
- No antennas to set
- Self-forming routing scheme

SELF MONITORING

- Automatic system checks/network health
 - Battery Life
 - Node Failure
 - Quality of Service

BENEFITS

- Intrinsically safe and MSHA approved
- No cables, wires, or fiber installations
- No cumbersome external antennas
- Rapid "pick-n-place" installation
- Easy advancement
- Easy expansion
- Self-forming, self-healing, self-monitoring
- No power connections or battery back-up
- No fuse replacement
- Minimal maintenance
- Proven functionality

WHICH WOULD YOU CHOOSE?



CommTrac

Wired System