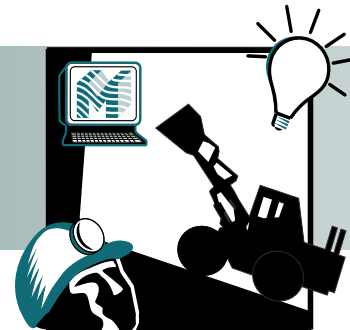


MINING

Project Fact Sheet



WIRELESS MINE-WIDE TELECOMMUNICATIONS TECHNOLOGY

BENEFITS

- Increases practicality of fully autonomous equipment
- Increases underground mine safety
- Increases underground mine productivity
- Reduces construction needs in underground mines

APPLICATION

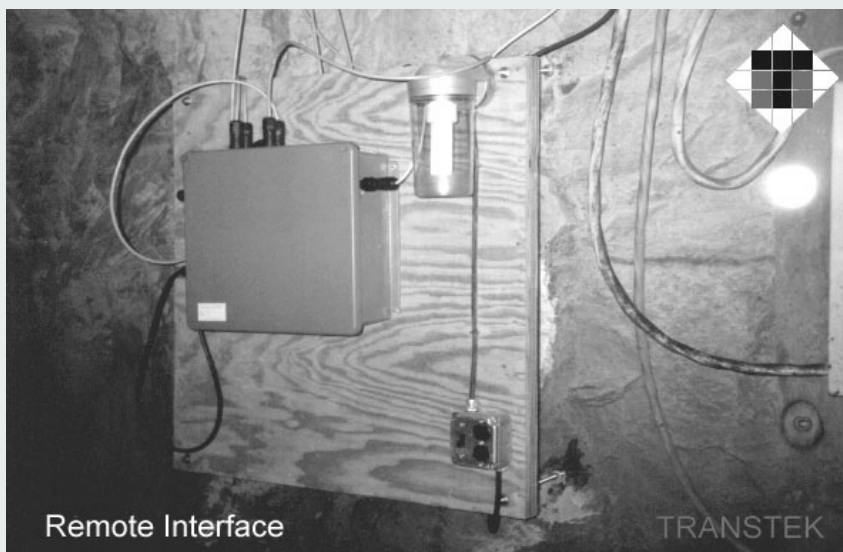
Wireless mine-wide telecommunications throughout the mine will allow underground personnel and surface personnel to communicate through voice and data transmissions. This technology will increase safety and efficiency in underground mines.

WIRELESS TELECOMMUNICATIONS ELIMINATES THE NEED FOR A DEDICATED HARD-WIRED NETWORK

Project partners will design and test a comprehensive wireless mining communications system that will allow two-way communications among underground personnel and between underground and surface personnel. The wireless system will not require any dedicated cable inside the mine or between the mine interior and surface. This technology will increase system reliability and simplify the installation process considerably making it less disruptive to mining operations.

Two methods of signal transmission will be studied. The methods differ in formatting approaches. The studies will center on evaluating the results of these approaches in terms of differences in product cost, clarity of signal and freedom from interference. The chosen system will be optimized for performance and reliability.

REMOTE INTERFACE



Remote Interface stations like the one above is similar to the wireless communication stations



Project Description

Objective: To develop a two-way, real-time, wireless communications system for use in underground mines. This technology will lower the cost of mining by increasing productivity as well as increase the safety of miners.

Progress and Milestones

This project includes the following activities:

- Develop in-mine voice capability
- Expand the through-the-earth voice technology to data transmission capability
- Develop the digital data transmission capability of the in-mine system
- Develop tracking sensors and beacons to track positions of personnel and equipment
- Test the wireless telecommunication systems

A limestone mine in Wampum, Pennsylvania and a coal mine owned by CONSOL, Inc. have given permission to use their mines as test sites. Arrangements have also been made to use an experimental coal mine operated by National Institute for Occupational Safety and Health for testing and demonstrations.

Commercialization Plan

Marketing and sales will be done through Transtek, Inc. in collaboration with Victor Products USA, a Federal Signal Corporation company.



PROJECT PARTNERS

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University of Pittsburgh
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Victor Products USA
Cranberry Twp, PA

National Institute for Occupational
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Library, PA

Gateway Commerce Center
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