

Mining APPLICATION NOTE

Enhanced Security and Wireless Communication in the Mining Industry

ConnexALL application in the mining industry:

Objectives:

- Secure workers and provide a “man down” emergency response in mines
- Monitor critical alarms and provide instant notifications on wireless and wired devices
- Rapid Return On Investment (ROI)

Challenges:

- Deploying a wireless network and devices in an abrasive environment.
- Maintaining a minimal level of interaction between the miners and the actual security system.
- Minimizing new equipment installation.

Solution

- 1- ConnexAll Notification Server (CNS) (Software)
- 1 – Wireless Telephony Client (WTC) Spectralink. (Software)
- 1 – Device Assignment Client (DAC) (Software)
- 1 – Trigger Callpoint Client (TCC) (Software)
- Wireless Access Point Infrastructure (API) deployed throughout the mine.
- Rugged SpectraLink Netlink IP wireless with i640 handsets with 2-way communication capability

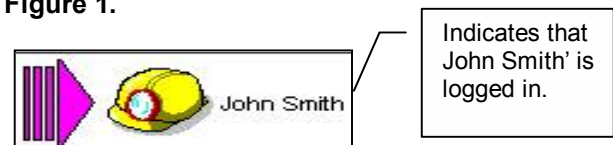
Prevention of disaster and timely response in case of emergency in the mining industry are critical.

Presently, the security measures in this industry generally require workers to “check in” with supervisors at a predefined time, with a two-hour time span. Miners must leave their designated work areas, go to the closest emergency phone and call in order to report their status, “alive and well”.

Bringing the appropriate technology in a mine is not an easy task to accomplish. However the combined solution offered by GlobeStar Systems, and SpectraLink made state of the art communication and safety achievable in the industry.

The complete solution has at its core ConnexALL's Trigger Call point Client. This software module prompts the miners' wireless phones to ring after a predefined time interval has elapsed and request acknowledgment. In order to engage in this “man down” functionality, workers are asked to register their presence on a touch screen wireless tablet PC, which is located near the “punch clock” for logistical purposes. A representative icon displaying the miner's name is activated at the touch of the screen. See **Figure 1** for a snapshot of the screen.

Figure 1.



The system is from this point on activated and the miner's wireless handset will ring/vibrate after a predetermined elapsed time interval. The miner can confirm their ‘well and alive’ status by pressing any key on the dial pad of their handset, without any need of leaving their work premises.

As a result, the mine increases its efficiency, while enhancing security simultaneously. If the miner fails to acknowledge their presence, the software will automatically send an emergency notification to any designated wireless device or PC signaling that miner John Smith has not checked in. If so desired, the notification procedure will start with the worker's immediate supervisor and escalate (if no answer is

received) to any internal or external person with designated responsibility.

Embedded in the software is also a Reporting Package that supplies management with all the necessary tools track and analyze performance.

ConnexALL is the corner stone of this application, but its success would not be possible without the presence of wireless communication. In this case, SpectraLink i 640 VOIP enabled handsets were chosen for their ruggedness and their ability to generate 10 “walky-talky’ types of communication. The backbone infrastructure chosen for this application was 802.11b network, making it highly reliable and very cost effective. For more information contact:

SpectraLink @ www.spectralink.com

GlobeStar Systems @ www.globestarsystems.com

Mine Shaft Diagram:



NetLink i640 wireless telephone

Central Equipment:



ConnexALL Solution
1 CNS
1 DAC
1 WTC

The touch screen tablet PC, featuring the TCC

