

NLT Australia Pty Ltd/Grasstree Mine Mining Personnel Monitoring & Asset Tracking

Case Study



Wavetrend Channel Partner

NLT Australia Pty Ltd (NLT), a subsidiary of NL Technologies, designs and manufactures underground lighting and communications solutions for the mining industry. NLT has leveraged its mining expertise to design underground tracking and communications systems aimed at improving safety and efficiency and preventing mine emergencies.

Business Challenge

Grasstree Mine (Grasstree) is an underground coking coal mine located in central Queensland, operated and managed by Anglo Coal Australia Pty Ltd (Anglo). As underground mines represent some of the harshest working environments, ensuring the safest conditions for its workers at Grasstree was of the utmost concern for Anglo. Communication and the location of personnel and equipment within the mine can be a difficult endeavor. Additionally, Anglo Coal expected to reduce costs and save time by being better able to locate personnel with specific skill sets when needed and keep track of equipment between shifts.

Solution

Anglo contracted NLT to design and install an underground digital communications network. NLT determined that Wavetrend's active RFID products could provide the superior tracking precision and effective real-time monitoring critical to achieving Anglo's objectives, and that Wavetrend's active RFID product offering was rugged and reliable enough to withstand the rigors of the underground environment.

Wavetrend supplied the active RFID hardware that integrates into the communications infrastructure and provides the foundation for advanced tracking of people and assets within the mine.

Readers were installed at various locations throughout the length of the mine. When a tag enters the read range of the reader, data is transmitted to a wireless access point and then relayed via fiber to the control room. The operator monitoring the system has complete visibility of the movement of personnel and equipment throughout the mine, and via NLT's two-way messaging function, can immediately alert workers in the event of an emergency. Furthermore, management can locate highly skilled workers and specialized tools and equipment and reassign them so that the mine operates at peak efficiency. The NLT Digital suite of software can be accessed anywhere on the network to obtain locations or send instant messages.

Another key component of the network is the Messenger Cap Lamp equipped with a Wavetrend active RFID tag. This innovative approach fosters real-time personnel tracking by seamlessly

integrating the tag into the miners gear. Assets and vehicles are tracked in a similar fashion by affixing a tag directly to the item.

As the installation at Grasstree evolves, the system will incorporate add-on features, sensors that minimize many of the risks of underground mining, including the detection of many different gases and the monitoring of air flow in the mine, that fully integrate into the NLT digital network and software.

NLT's underground digital communications network, supported by active RFID hardware from Wavetrend, has enhanced visibility of activity in the mine. The management of Grasstree now has access to data they can use to make split-second decisions and take immediate action. With the system in place, Anglo has achieved its goal of improved safety and experienced an increase in productivity as a result of the real-time information that active RFID provides.

Results

- Significantly upgraded two-way communications within the mine
- Reduction in response times to emergency situations has dramatically improved overall safety
- Real-time personnel monitoring and asset tracking has increased productivity as specialized staff and equipment can be quickly located and reassigned
- Compliance with legislation necessitating two-way messaging and tracking

Customer Comments

"Anglo Coal and specifically Grasstree Mine have shown real leadership and commitment to the safety of their underground employees. The project objectives for this installation were ambitious. As Wavetrend has always shown a determined willingness to work with us to accomplish our goals, we knew they would be the right partner to provide the active RFID hardware for this project."

- Tim Haight
Managing Director, NLT Australia Pty Ltd



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