



## CASE STUDY

# Designing + Deploying a Reliable Wireless Network for a Mining Company



## The challenge: Automating and Optimizing Mining Operations with Reliable Wireless Network

A mining company wished to move from using a manual checklist to adopting a fully automated underground mining system, where operators could run everything remotely via a wireless network. Because the company desired to use telemetry to automate its communications, remote operators would need a completely reliable network to avoid missing marks when moving materials, as doing so would lead to significant product loss.

Operations management was also critically important to the company, as the equipment cost millions of dollars and had to be maintained properly to extend its life and maximize productivity. The company needed to streamline its process for monitoring its equipment for factors like engine performance, fuel usage, speed over the ground, tire pressure and wear, and oil temperature and viscosity.

While the company's IT staff was capable of managing the day-to-day technical operations, it was not prepared to design a new wireless network or select the proper equipment for it.

## The solution: Comprehensive Wireless Mesh Network Deployment for Automated Mining Operations

The company looked to C1 for help with the greenfield deployment of a network on a bare stretch of property four miles wide and ten miles long. This land would serve as the site of a new mine that would utilize a completely automated system.

Prior to this engagement, C1 had proven itself as a capable partner by redesigning an end-of-life solution into a more modern wireless system, so the company knew it could trust C1 to handle this arduous task. Further complicating matters, the mining industry had strict regulations that the company had to follow to protect its workers. The company had a set series of processes in place to ensure it adhered to regulations, and the new solution would have to meet its existing standards and guarantee seamless communications.

What made this network unique compared to typical corporate wireless deployments is that it would not be designed to carry internet traffic. It would be designed around reliability, not total volume.

To satisfy these requirements, C1 provided comprehensive design and deployment services for a wireless mesh networking solution. The solution provided mine telemetry and automation for continuous coverage, location accuracy, semi-autonomous equipment, fleet/task management systems, and RFID tags.



## **The result: Enhanced Efficiency and Profitability through Automated Mining Systems**

Since the wireless network has gone live, the company has been able to automate and optimize its mining systems so that work can be completed much more efficiently. This has made the mine more profitable by doubling efficiency and greatly extending the life of the mine.

The operations management processes are also now all computerized, so when a mine operating vehicle requires servicing, it is automatically flagged, pulled offline, and sent into the shop for maintenance.

Moving forward, C1 will help the company implement full location monitoring of all the personnel so that it knows where workers in the mine are at all times. This will allow it to automatically initiate man-down operations when someone hasn't moved from a particular spot for a long period of time.

C1's successful completion of the project has instilled confidence in the customer that it is the right partner to provide other IT services, as well. The company has since engaged C1 to upgrade its phone and video conferencing systems.

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