

Success Story

Canadian Oil Company to Design a Network Solution for Mobile Equipment



Challenge

A Canadian oil company wanted to monitor the performance of their entire fleet of mobile equipment in real time. In order to achieve this goal, the oil company needed a network infrastructure that would be reliable and capable of operating in harsh environments.

Solution

The company contracted Industrial Cyber Security to engineer the hardware and software solution that would transmit the operational data from the entire fleet of mobile mining vehicles in real time and make this data available for monitoring and analysis.

Advantage

With their experience working in process control environments, Industrial Cyber Security understood the value of real-time asset monitoring as well as the challenges of designing a network solution for mobile equipment operating in harsh conditions.

For this project, the Industrial Cyber Security team drew upon their:

- 10+ years' experience providing industrial strength security solutions
- 50+ projects combining IT best practices and complex process control environments

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Challenges of Condition-Based Maintenance

A Canadian oil company wanted to move from the common practice of time-based maintenance to a condition-based maintenance approach. To realize this goal, real-time performance monitoring of equipment needed to be put in place. Achieving this goal for an entire fleet of mobile mining equipment would be no small feat, however. The environment presented a number of challenges:

- extreme weather conditions ($\pm 40^{\circ}\text{C}$)
- constant vehicle vibration
- intermittent wireless connectivity
- poor input power quality

Industrial Cyber Security Provides a Solution

The company contracted Industrial Cyber Security to engineer the hardware and software solution that would allow the company to achieve their goal of real-time monitoring of their fleet of mobile mining equipment. In addition to designing the solution, the Industrial Cyber Security team also assisted with its implementation, ensuring that it was properly networked and fully functioning.

Using a combination of robust hardware, buffering capability and wireless mesh networks, the solution uses a data logger to collect process data from the vehicles and forward the data over the wireless network infrastructure to servers on a fixed local area network. Maintenance personnel then analyze the collected data to make informed decisions on repairs, parts, ordering and overall equipment health.

The project is now in a second phase, with the addition of a new fleet of vehicles and includes a re-engineered data logger platform that is smaller, more rugged and provides greater functionality.

The oil company was able to utilize Industrial Cyber Security's years of experience in the design and implementation of solutions within a process control environment. With the completion of this project, the company realized the cost savings of condition-based maintenance through reliable real-time monitoring of mobile equipment.



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For more information:

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SS 918
June 2011
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