

Wireless makes the connected mine possible – and powerful

Mining operators face the predicament of wanting to reap the value of a connected mine while having operations that are perhaps the hardest in the world to reliably connect. With the need for greater data access, real-time analytics, and autonomous systems and services, Rockwell Automation is realising the connected mine faster than some of its competitors.

Initially setup to address operational challenges including process efficiencies, cost control, worker health and safety, and skills gaps in the mining industry, Rockwell Automation's Connected Mine infrastructure will see a boost with the acquisition of Italy-based ASEM, S.p.A., a leading provider of digital automation technologies.

"We are delighted to have the opportunity to leverage our pioneering expertise in the design and production of Industrial PCs and industrial software to broaden Rockwell Automation's control and visualisation offering and accelerate the digital transformation of our customers," says ASEM founder, president and CEO, Renzo Guerra.

Mining operations not only span great distances, but they are often located in remote areas – including far below ground – with minimal or no communications infrastructure. Added to this, constant digging or blasting can reshape the landscapes where communications need to take place.

ASEM's high-performance automation solutions enable the Connected Enterprise with smarter technology, enhanced productivity, and a more secure environment by integrating smart devices, the control platform, and design and operational software on a single network.

"ASEM's strength in the IPC market and expertise in HMI will further expand our control and visualisation hardware and software portfolio and enhance our ability to deliver high-performance, integrated automation solutions," says Fran Wlodarczyk, senior vice president: architecture and software at Rockwell Automation.

"The company's products will provide our customers with a high degree of configurability for their industrial computing needs through innovative hardware and software that allows them to achieve faster time to market, lower their cost of ownership, improve asset utilisation, and better manage enterprise risk."

ASEM has a leading market position in Italy and a brand that is synonymous with quality. It is expected to complement/supplement Rockwell's existing integrated technologies, the Connecting Mine, which allows mining companies to gather and aggregate data for obtaining end-to-end visibility into their operations and make informed business decisions to enhance mining operations.

"The Connected Mine concept provides our global mining customers with the digital infrastructure needed to tap into exciting new technologies for optimised operations," says market development manager, Fabio Mielli.

The system can be used to improve various areas of mining operations such as extraction, process management and optimisation, material handling, and mine electrification.

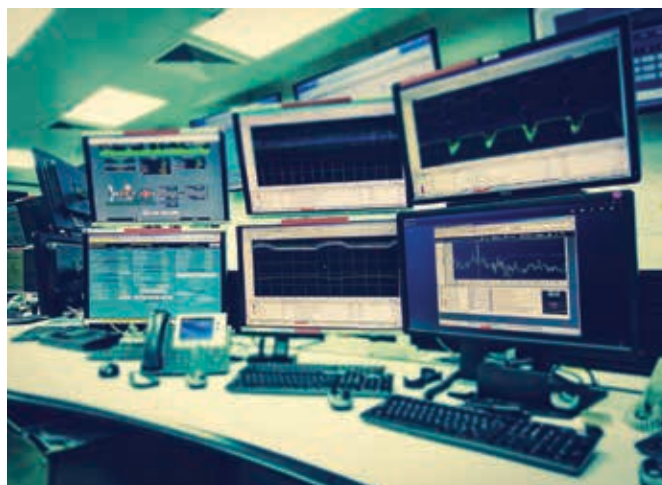
How does the Connected Mine software work?

How does a mining operator connect your operations and maintain network uptime, which is crucial to safety and productivity?

First, you need to have the right foundation in place. This requires converging your information technology (IT) and operations technology (OT) systems into a single, unified network infrastructure to eliminate silos of information and enable seamless information sharing across the entire mining operation.

With a unified network infrastructure in place, you can implement wireless mesh communications to connect people, places and technologies. Wireless is ideal for connecting all aspects of your operations – from trucks or trains, to underground workers, to analytics tools – because it can reach wherever you go, above or below ground.

It can also support new capabilities in your mine to help improve efficiencies, enhance safety and reduce costs.



The Connected Mine utilises digital technology and Internet of Things cloud with on-premise platforms to reach the level of cross-functional communication the modern mining environment demands.

Remotely connecting people: When downtime occurs it is essential that employees have immediate, information-enabled support to resolve the problem quickly. Wireless communications in a mining operation can connect workers with the right people, in any location, helping to speed up troubleshooting when downtime happens.

Deploying autonomous transportation: Some mining companies are already using autonomous trucks and trains that provide efficient transport and safety benefits. By using wireless to implement autonomous transportation, you can help to reduce the number of workers on the road and refocus their efforts on production goals.

Locating employees in an emergency: Built-in sensors on underground mining equipment – such as wristbands and helmets – are one of many ways to help locate employees in an emergency. This technology also can be useful in high-risk environments to help make sure all employees are in a safe place prior to dangerous tasks, such as blasts.

Adjusting ventilation settings underground: Ventilation-on-demand (VoD) systems can sense the presence of people and running vehicles, and change settings accordingly. This can enhance onsite safety and help to reduce energy costs.

Deploying wireless communications in a mining environment can be overwhelming, but there is no denying the value or competitive advantages at stake. Ask your automation and IT providers for help to determine the right course for deploying a connected mine. □