



# Plant and Mine Operations for Mining

Today's mining industry is increasingly looking for new ways to enhance operations through improved industrial control data and expert collaboration. Cisco® Plant and Mine solutions provide a converged, standards-based architecture for applications that monitor and gather data right down to the sensor level. The resulting detail helps managers improve operational efficiency, create and adjust business processes, and comprehensively manage surface and underground sites.

Mining companies face increased material and production costs that can be resolved only by improving process efficiency and making better use of assets. At the same time they must also safeguard employee health and safety, especially in remote areas. Sometimes such issues are almost impossible to address with current networking capabilities, due to a lack of visibility into real-time information. As a result, facilities are unable to accurately set schedules, track equipment, or grow the system architecture in line with the business.

## Benefits

- Powerful visibility into every aspect of surface and underground mining operations
- Faster decision making based on real-time information
- Flexible implementation of advanced applications, and reduced time to deployment of devices, avoiding expensive cabling
- Better management of resources and assets with the enablement of mobility applications over the wireless network
- Improved safety for personnel and property
- Greater regulatory and security compliance
- Lowered costs through greater efficiency and physical security

## Industry Challenges

### Connectivity across the network

Many companies are locked into costly, proprietary IT environments, maintaining multiple networks for business and control systems. By contrast, Cisco can interconnect a wide variety of applications for business, security, and processes—from wireless phones and remote video collaboration to industrial control systems and enterprise applications. The Cisco solution is based on an open-standards IP infrastructure that integrates and interoperates with all major industrial protocols, including ISA.100.11a and WirelessHART for sensors. It is powered by Cisco routers and switches ruggedized for harsh refinery environments, ATEX certified wireless mesh Access Points (APs), and Cisco CleanAir® technology to reduce radio interference and help improve performance.

### Visibility into instrumentation systems

Co solutions allow real-time visibility and access to sensor-level information. This level of condition-based monitoring to assure high performance from equipment at all times. In alignment with the Internet of Things, sensor-based capabilities lower OpEx by reducing unplanned downtime and shortening planned maintenance windows. They also support comprehensively integrated on-site and remote operations, providing “eyes and ears” on remote sites to validate and resolve issues.

### Location-based asset management and people safety

Key to improving operational efficiency is managing the location of assets throughout the plant. With partners such as AeroScout (Stanley Industrial), Cisco offers innovative Radio Frequency Identification (RFID) Location-Based and Context-Aware Services over the IEEE 802.11 wireless network. By tagging equipment, vehicles, and containers with active RFID tags, workers can monitor their location to reduce loss and theft and to help ensure that assets are available when needed. People assets are also protected by an automated sensor-based system that monitors and alerts workers regarding their surroundings. Along with a panic button, it provides alerts on environmental conditions, such as dangerous levels of gases or temperature variances. Other partners offer portable gas detectors and sensors to protect workers and improve safety.

### Assuring cyber and physical security

Cisco’s network promotes information and system security with a full suite of industry-leading asset visibility tools, asset risk detection, firewalls, next-generation encryption, interference analysis, rogue access point-detection tools, intrusion detection, network management, client security, and other critical control measures. It also provides a set of RFID-specific services and supports message-level controls such as authentication and authorization. Using video management and partner camera solutions, Cisco supports physical security systems to help guard the site from intrusion.

## Why Cisco

Cisco has more than 25 years of experience in industrial networking, extending the reach of your operation while protecting your investment in remote or hazardous sites.

For additional information, visit [www.cisco.com/go/mining](http://www.cisco.com/go/mining)

## Build smarter, safer, more productive operations

Cisco plant and mine operation solutions enable digital operations by connecting machines and sensors to OT systems through secure and standards-based industrial wired and wireless networks.

- **Digital process and production:** Apply network, security, and data management technologies to Industrial Automation and Control Systems (IACS) for real-time plant and mine operations.
- **Asset visibility:** Automate the collection and integration of noncritical operational data and asset location with periodic, low-cost wireless communications into on-premises or cloud dashboards, enterprise resource planning, distributed control systems, or Operational Technology (OT) maintenance applications.
- **Equipment monitoring:** Enable machine visibility, improve maintenance, and support two-way communications for monitoring and control by collecting equipment data in near real time and publishing it to cloud and third-party applications.

