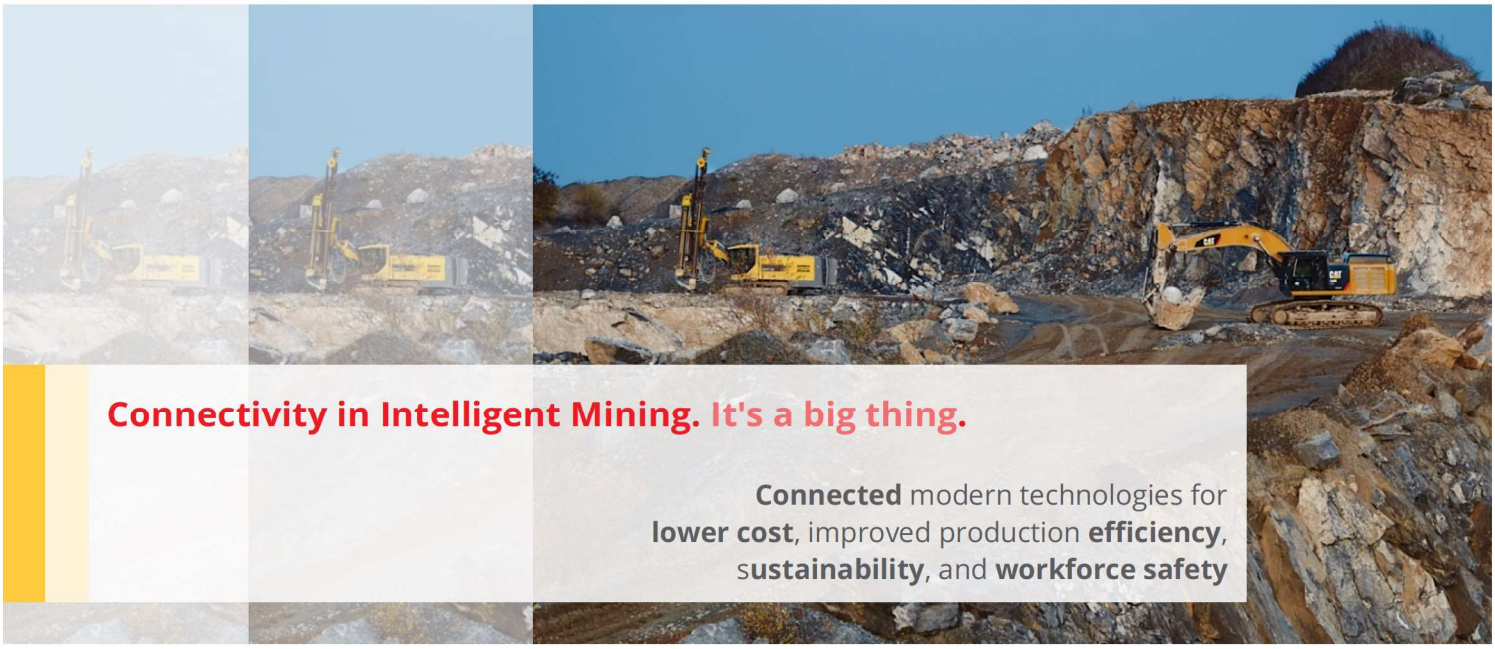
Anywhere

INTELLIGENT CONNECTIVITY

SOLUTION NOTE MINING INDUSTRY



Connectivity in Intelligent Mining. It's a big thing.

Connected modern technologies for **lower cost**, improved production **efficiency**, **sustainability**, and **workforce safety**

The Challenges at the Mining Site

The digital transformation of the mining industry is probably the most revolutionizing operational shift ever. The many technological advancements that is currently happening, transform whole organizations down to the very mining site.

There is an explosion of Industrial Internet of Things (IIoT) technologies available to improve profitability, reduce the environmental footprint, and address workforce safety. This in turn has led to convergence of Information and Operational technologies – the merge of IT and OT – to break down information silos and build a holistic efficiency approach.

But whether the IIoT technologies are applied in the pit, the plant or the loading site, they all need to be connected to achieve the goals. Adding then the demand for video surveillance, access control, and SCADA systems for workforce and site safety, the need for efficient intra-site connectivity becomes even broader and more demanding.

While the remote mining site in itself can be connected via satellite the key challenge is how to create a secure and cost-efficient intra-connected site. **What is the best way to connect the many IIoT devices, security cameras, SCADA systems, and more, with the local IT and OT systems on the site?**

Field Data Applications
Underground Mining Vehicles
Trucks & Loaders
Field Sensor, Seismic Radar
Autonomous Reclaimers, Stackers
SCADA

Video Surveillance
Real-time Monitoring
Communication Trailer Backhaul
Facility Access Control
Mobile Vehicle Access

Mobile Equipment Telemetry
Electricity Distribution System
Fleet Management App
Guidance System

Anywhere

INTELLIGENT CONNECTIVITY

Connectivity for Autonomous Operations and Applications

SCADA Process Control | Fleet Management | Telemetry Applications | Mining Operations



To improve productivity and for enhanced workforce safety, more and more processes and equipment are being automated. It drives operational efficiency and mitigates the risks of incidents in hazardous environments. SCADA applications, Fleet Management, Mobile Equipment Telemetry (MET), and other mining control and management systems, simplifies the process control for excavation, bulldozing and hauling and optimizes the entire mine and extraction operation through continuous real-time work order.

The Smart Wireless Network connects the many IIoT devices and applications forming these solutions throughout the whole mining site.

Connectivity for Remote Control and Asset Tracking

SCADA and Field Sensors | Mining Utility Vehicles | Remote Control Equipment

For the site and operational management to make the right decisions, information capturing the various aspects of the site is vital. **It is real-time data from a wide variety of field sensors for the SCADA systems, mining utility vehicles and equipment in the pit, as well as the plant and loading site.**

The many sensors and systems involved to create a holistic view can not be operated in silos. It is only when they are interconnected on the site all the vital information is available for critical decision and AI-supported solutions to be made.



Anywhere

INTELLIGENT CONNECTIVITY

Connectivity for Workforce and Site safety

Workforce Safety | Site Protection | Asset Protection

Workforce safety is certainly the highest priority for every company. The measures taken to minimize the exposure to hazardous environments and situations involve a wide range of technologies. Cameras, sensors, and detectors are essential building blocks together with more intelligent AI-driven systems for preventive measures.



But workforce safety is not only limited to the working hours. Also, the residential areas for on-site staff need security where there is a growing trend with more video surveillance being installed. Another aspect is the mining site itself. The video surveillance or sensor-based perimeter protection, smart tags and valuable assets, as well as the many access control systems within the site, are all essential systems that need to be connected.

Workforce safety, site and asset protection, can not be secured without a proper IT network infrastructure.

High-Capacity Throughput • Security • Automatic Load Balancing • Flexible Topology Design

Redundant Smart Routing • Rapid and Easy Deployment

The Solution: Smart Wireless Network – Efficient Connectivity for Mining Sites

The **Smart Wireless Network** from Anywhere Networks is more cost-efficient and saves up to 80% of the installation time, compared with a conventional fibre network infrastructure. It provides the highest level of cybersecurity for data integrity. The Smart Wireless Network creates a static network infrastructure but also connects moving vehicles throughout the site. It is designed with the highest environmental demands in mind.

It provides a reliable high-performance backbone IT network infrastructure for the demanding mining site, connecting high-resolution video surveillance (CCTV) cameras with video management systems (VMS), access control, and SCADA systems. It is also the connectivity of choice for the many Industrial Internet of Things (IIoT) devices. The Smart Wireless Network creates **a holistic network infrastructure** for the whole mining site to fully drive the digital transformation in Intelligent Mining.

Being the **quickest-to-deploy** network connectivity solution is one of the strongest drivers when selecting a Smart Wireless Network. It can be installed and fully operational in days instead of weeks or months as is required for a wired fibre network. It saves up to 80% of the installation time and can also easily be extended to broaden the coverage. It can seamlessly connect more devices and systems, and adapt to changes in the topology as the demands and needs change. Scalable, future-proof, and adaptable, are the foundations in the design behind a Smart Wireless Network.

Anywhere

INTELLIGENT CONNECTIVITY

It is also a **cost-cutting solution**. Compared with a fibre network infrastructure, a **Smart Wireless Network** saves 45% of the cost or more. The larger the network the more the savings. It requires no trenching or other expensive civil work and is also much less labour intense for the installation. But a Smart Wireless Network can also be deployed where fibre is not feasible or even doable. One such an example is mobility. While the Smart Wireless Network most of the time connects **static** locations such as cameras and IIoT devices along the site perimeter, on poles, or buildings, it can actually also provide connectivity for **moving** mining utility vehicles and scalers.

The **Smart Wireless Network** is based on wireless transmission technology and utilizes the highest **cybersecurity** encryption to ensure full data integrity. This ensures maximum data protection while at the same time allow for full system integration. The equipment creating the Smart Wireless Network is fully IP67 rated to meet the **highest environmental demands** in the rugged mining environment, and designed for an extreme temperature range from -40°C to +65°C, in any weather condition. **The Smart Wireless Network is an important building block for agile Pit-to-Port initiatives for greater production efficiencies, reduced environmental impact, and workforce and site safety.**

Save up to 80% of the installation time

Save 50% or more of infrastructure cost

Maintained maximum cybersecurity

Static and mobility connectivity

Long-range, high data throughput and low latency

Smart Wireless Network – The Anywhere Connectivity Solution for Mining Sites

