RAJANT

CASE STUDY

Wenco Chile Delivers Complete Solution Using **Rajant Kinetic Mesh® Network** to Achieve Timely "Go Live" Milestone for Chilean Gold Mine

Wenco Chile's mining customer is an open-pit gold operation in a remote area in the mountains of Northern Chile. It is nearly 4,500 meters above sea level, with adverse weather conditions where winds can reach speeds of up to 100 km/h and temperatures close to -30°C. As with most open-pit mines, the shape, depth, and configuration of the mine are constantly changing as extraction occurs, which makes the terrain dangerous.

The Challenge

In growing numbers, open-pit gold mines such as this are turning to automation to improve efficiency and reduce costs. As a result, this Chilean gold mine chose to put into place a state-of-the-art fleet management system (FMS) to increase productivity. After a thorough review process, the mine assigned Wenco as the FMS provider, implemented Wenco's Fleet Management Systems (including the Bench Manager solution and high-precision systems for drill machines and loading units, as well as an asset health solution for the entire fleet), and selected an LTE network for real-time connectivity of the entire fleet. Unfortunately, the whole project was at risk of not meeting various milestones, including the "go live" milestone of the system.

Unlike traditional Wi-Fi and 4G/5G/LTE networks, Rajant's Kinetic Mesh is designed specifically for use in mining. Rajant customers enjoy immediate scalability to add multiple new technologies now and in the future — with no additional OPEX for these benefits.

The Customer

- Chilean Gold Mine

The Partners

- **Rajant -** Pioneers peer-to-peer radio communications enabling real-time voice, video, and data to connect machines, robots, and people together as part of a secure private mobile network.
- **Wenco -** Developed an integrated suite of solutions to support the digital transformation of the mining industry. Fleet management, asset health, data analytics, and other technologies join together in the spirit of open interoperability to raise mine productivity and efficiency, lower routine costs, and establish a safe and smooth mining operation.

Solution Components

- Rajant BreadCrumb ME4
- Rajant BreadCrumb ES1

Outcome and Impact

- Ruggedized and reliable wireless network installed
- Full suite of fleet management solutions deployed
- Increased mine productivity and efficiency

The Solution

Wenco was in immediate need of a proven communications solution for the mine that was available to be delivered to the mine in a matter of weeks and not months. It needed to offer scalability of performance without annual recurring expenses to the mine. Faced with such a risk to the project, Wenco decided to implement their FMS using Rajant's Kinetic Mesh network, which efficiently addressed the need for real-time connectivity and one proven to work in extreme conditions. Wenco's previous successful experience working with Rajant was an advantage as there were no concerns about integration between the two technologies.

> "We have deployed many successful projects with Rajant, and with all the challenges this time, it was truly a group effort involving the mine, the Wenco team, and Rajant to deliver a successful installation of our fleet management system."
>
> **— Sergio Contreras,**
> Sales Manager, Wenco

The decision-makers at the mine, however, also had to agree on Rajant. Their main concern was a quick deployment since they did not want project milestones to be put at risk. But, since Rajant's Kinetic Mesh network has already been proven at more than 270 mines around the world, including several active mining companies in Chile, Wenco's mining customer immediately approved the use of Rajant's solution.

Sergio Contreras, Sales Manager at Wenco, stated, "For us, the decision was easy. Our customer also realized that this is the only way to get back on track and deliver a successful deployment. That's why Rajant was chosen."

Once Rajant was brought in, Wenco's team and Rajant's engineers immediately worked to quickly design and deploy the complete fleet management system and wireless network suitable to the requirements of the mine in the short term and in the long term.

A mix of 24 Rajant BreadCrumb® models were deployed, such as the ME4 and ES1 models, along with Rajant's patented InstaMesh® protocol and four infrastructure points. These proved to be the necessary components for the network, providing high bandwidth and ruggedized mobile connections throughout the entire operation. The Rajant BreadCrumb ME4 provides portability, but it also brings the power of multi-frequency access, high bandwidth, and constant connectivity to whatever on-the-move asset it is attached to, including vehicles, equipment, and even people. Meanwhile, the Rajant BreadCrumb ES1 is a commercial-grade version of the ME4, providing the same performance and capabilities in a compact, lightweight form factor that can withstand extreme temperatures, vibration, and shock. They are ruggedized BreadCrumbs that self-configure for easy deployment and secure coverage across an entire mobile operating environment.

The Results

After a rapid deployment, success was realized. The key milestones were met, and Wenco's FMS was operating as planned. The mine began to monitor its fleet in real time to report on and improve productivity.

The challenge was to implement networking in a remote location that could function in extreme conditions and meet the requirements of a complex mining operation. Rajant fulfilled the need. The ruggedized wireless Rajant Kinetic Mesh is highly reliable, redundant for continuous connectivity, and simple enough to be deployed rapidly to meet the customer's "go live" milestone. Fortunately, unlike other networking options, Rajant delivered the wireless network that enabled the Wenco FMS solution in exact accordance with the customer's needs. In the end, Rajant provided peace of mind for the customer and contributed to the future success of the mine.

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