

WHERE IoT POWERS MISSION-CRITICAL APPLICATIONS

SKYWAVE™
AN ORBCOMM COMPANY

Case study



Kuchera supports remote mining site sustainability and productivity with SKYWAVE IoT technology

Helping customers in mining improve utilization, boost revenue, reduce CO2 emissions and cut fuel consumption with dual-mode satellite-cellular IoT.

The challenge

There are tens of thousands of mines operating around the world today. The largest mines produce millions of metric tons of copper, gold, iron ore, nickel, bauxite, tellurium, molybdenum and more. Mines operate in remote, rugged areas that make it difficult for the people and vehicles that keep the operations running to be connected via cellular networks. The disconnected operations often have challenges in managing and monitoring the mines that can cover hundreds of thousands of square kilometers.

Berlin-based mining technology company Kuchera identified numerous areas where mining

operations could improve and developed their teamUP mining operations platform to help drive productivity and optimize equipment utilization for their customers. However, according to Kumbirai Chipadza, co-founder and managing director of Kuchera, this came with some challenges.

“In many countries, such as Zimbabwe and South Africa, connectivity at mining sites is often spotty or non-existent,” Chipadza says. “Sometimes there are five- to eight-hour blackout periods where data isn’t delivered due to unavailable cellular coverage.”

The solution

Kuchera answered their connectivity challenges with SKYWAVE dual-mode satellite/cellular connectivity and devices. With SKYWAVE’s technology, Kuchera’s teamUP can do what it does best: help customers improve mining operations and boost employee collaboration, all while reducing negative environmental impacts.

“Kuchera’s teamUP is more than an IoT data platform,” Chipadza says. “It’s a performance management platform that empowers mining teams to set clear, achievable objectives and track their progress in real time. By automating data collection and offering actionable insights, Kuchera helps teams focus on what matters most—achieving their goals.





With tools to streamline operations, reduce downtime and enhance safety, Kuchera turns complex mining challenges into manageable tasks, driving both efficiency and success in every project.”

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“We wanted to provide a way for everyone working in the mining operation to collaborate on developing goals and related key performance indicators that would help the entire team work together to realize better results,” he says.

“We knew that persistent communication among workers and mining fleets was imperative to supporting transparency and goal realization.

We also wanted our application to provide immediate feedback to the drivers and people working in the field.” SKYWAVE’s programmable dual-mode terminals send data to teamUp. Versatile and environmentally sealed, the terminals are built for the remote, rugged regions where Kuchera’s customers operate. The ability to switch between satellite and cellular networks keeps vehicles, people, and assets connected seamlessly while keeping airtime costs down. Plus, being able to process data and send updates over the air helped significantly reduce device upkeep, says Kuchera co-founder and Chief Product and Technology Officer Christian Hugger.

“What we really liked was the flexible programming environment SKYWAVE provides that includes a development kit and offers open APIs for easy integration of teamUP and the addition of functionality,” Hugger says. “Plus, installation of SKYWAVE satellite IoT terminals takes 20 minutes or less and doesn’t impact vehicle warranties. This was especially important for our customers.”

A key part of this successful partnership was the way that SKYWAVE and Kuchera worked together from solution ideation to deployment and beyond. Chipadza says, “When we were rolling out teamUp, SKYWAVE helped us determine exactly what we needed to ensure our customers would realize the benefits of our application.

Having SKYWAVE supporting our launch has been valuable as we began connecting people and vehicles operating in the field. They could see how their efforts in the field were directly impacting the results. We saw people lighting up with excitement to see how their daily efforts were making a difference."

"We didn't want our solution to be just another IoT application that provides data but not results," he says. "We saw mining IoT solutions on the market that weren't having a positive impact on mine productivity or operational efficiency."

By the numbers: Kuchera delivers results

This is just a handful of measurable results Kuchera customers have realized since implementing its solutions.

Accurate distance reporting up to 100m: Corrected invoicing for a mining contractor billing one km per trip to a dump site that was actually 1.4km. This resulted in a 40% revenue increase during the next billing cycle.

True inclination reporting: Discovered a six-degree incline

was actually 11 degrees, leading to additional revenue after correction.

Optimizing operating hours: Increased uptime from 8.5 hours per shift to ten hours within the first week of using the solution.

Improved accuracy for productive loads: Increased accuracy from 80% to 95% within the first month.

Planned and daily rate of bank cubic metre: Increased operator output from six to

eight loads per hour through cycle standardization times and recommended output rates.

Reduced idling: Decreased idling time from an average of three hours per shift to less than 30 minutes.

Optimized fuel consumption: Reduced average fuel consumption from 1,300 litres to less than 900 litres across a fleet of ten dump trucks.



Results

Measurable increases in mining productivity for Kuchera's customers

Every element in a mining operation is an opportunity to improve production. Instead of simply collecting and reporting on data, Kuchera is tying the data to

employee-influenced KPIs focused on optimization. This has resulted in shorter cycle times per load, an increased number of loads and less waiting time per load.

Minimizing environmental impact to comply with regulations

Traditionally, mining is known for having a negative environmental impact. Today, there's increasing regulatory pressure to improve mining sustainability, leading many to turn to technology for help.

Thanks to teamUP, Kuchera is helping mining operations reduce their environmental footprint by optimizing fuel consumption, cutting CO2 emissions and reducing waste.

Empowering employees to make a difference

teamUP empowers employees by providing them with immediate feedback on the impact that they're making. It gives everyone a voice and an opportunity to contribute to defining KPIs and measuring performance against team-set goals.

"With SKYWAVE's support, we're providing our customers and their employees with the data they need to develop constructive solutions so they can accomplish goals together, and that is exactly what we set out to do," says Chipadza.

For more information about our technology or to book a demo:
Email: sales@skywave.com | Call: 1-800-672-2666

Visit our website www.skywave.com

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