TAKE THE RAJANT

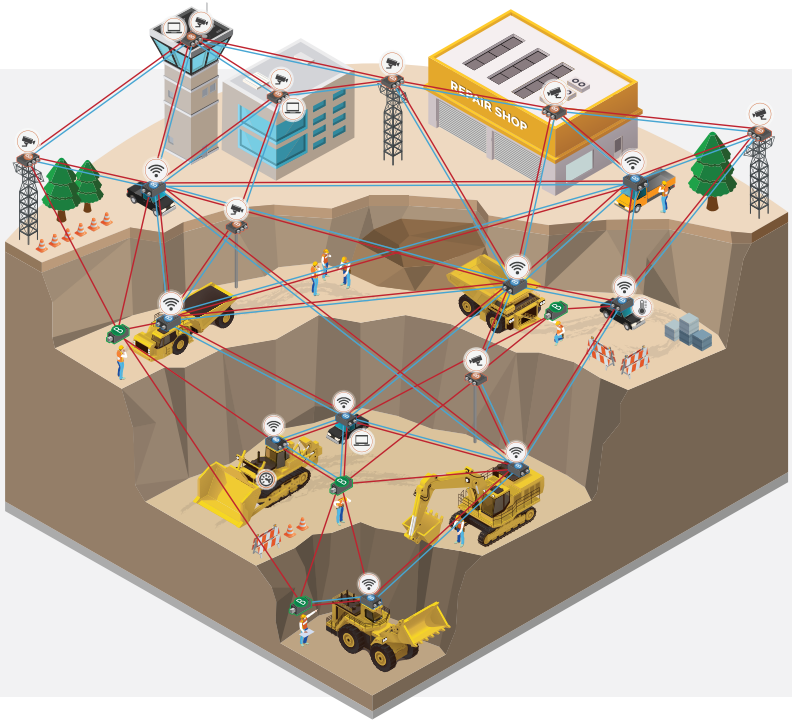
APPLICATION CHALLENGE

HOW APPDAPTABLE IS YOUR NETWORK?

RAJANT

Can your network **APPDAPT** to growing demands for unwavering application performance and total mobility?

Rajant Kinetic Mesh® networks run efficiency- and productivity-enhancing mining applications 24/7 across your diverse operating environment.



Applications Important to Streamlining Our Customers' Mining Operations:

Fleet Management:

- APS (Automated Positioning Systems)
- Carlson Fleet Manager Office
- Caterpillar MineStar
- Home Grown Production
- Jigsaw
- Micromine
- Modular Classic
- Modular Next Gen 6

Machine Health:

- CAT VIMS
- CAT MineStar Health
- CAT Detect
- CAT Command
- Dragline Vibration Monitoring
- Modular MineCare
- Pegasus Dragline Monitor
- Argus Shovel Monitor
- Thunderbird Drill App
- P&H Prevail
- Honeywell Matricon

Autonomy and Remote Control:

- Aerial Photography
- Aerial Inspection
- Infrastructure
- Environmental
- Emergency Management
- Search and Rescue
- Landscape
- Training
- R&D

High Precision:

- APS (Automated Positioning Systems)
- Atlas Copco Auto Drill
- Base Station CMRs
- Carlson Landfill Grade
- Carlson Mine Grade
- Jigsaw for Draglines
- Modular ProVision
- Terrain for Drilling
- Terrain for Grading
- Terrain for Loading
- Trimble GCS (Grade Control System)

Production Reporting:

- 3D-P Production and Maintenance Reporting

Miscellaneous:

- AeroScout WiFi RFID
- Autonomous Vehicles
- Dewatering
- Dust Monitoring
- Electrical Substation Breakers
- Explosive Weighing & Mixing
- Fuel Management
- Gas Well Monitoring
- Mobile Radio Trunking
- PLCs (Programmable Logic Controllers)
- Scales
- Slope Monitoring
- Supervisor Email/Internet
- Time Collection
- TPMS (Tire Pressure and Temp Monitoring)
- Video
- Voice-over-IP
- Weather Station
- Westco Blasting App

Many of the business-critical applications listed are supported in Rajant customer networks.

Maximize Network Adaptability with Easy-to-Deploy BreadCrumb® Wireless Nodes

Using Rajant's industrial-strength BreadCrumb wireless nodes powered by our patented InstaMesh® networking software, you can create a self-healing network able to dynamically adapt as people and assets move across your environment—all while keeping the network available, intact, and secure.

Each BreadCrumb can connect with multiple neighboring nodes via multiple links, providing fully redundant communications throughout the network. InstaMesh orchestrates this traffic and automatically optimizes communications based on physical surroundings and frequency availability.

BreadCrumb LX5

BreadCrumb ME4

Any BreadCrumb can be fixed or mobile, infrastructure or edge. The small-footprint, lightweight nodes are readily deployed on vehicles, towers, lampposts, buildings, and personnel.

Consider the following ways a Rajant Kinetic Mesh® network can help your mine to both reduce expenses and enhance profitability.

REDUCE COSTS with Improved Operational Efficiency.

Minimize unplanned downtime.

Unplanned downtime of one shovel can **impact production volumes by 25-35%.**[1]

Rajant's network empowers mining operators to remotely monitor and proactively manage maintenance of their high-value equipment fleet.

Move to a condition-based maintenance model.

30% of time-based preventative maintenance effort is wasted, and **30% is actually harmful.**[2]

Running equipment health monitoring applications can give you real-time status of shovels, pumps, loader trucks, and more—so that service efforts correlate to condition.

Prevent safety issues and violations.

In January 2014 alone, the Mine Safety and Health Administration (MSHA) issued **245 citations.**[3]

A Kinetic Mesh® network can support a plethora of mining sensors installed on mobile mining machinery, which MHSA has stated can increase personnel safety.

INCREASE REVENUES with Greater Productivity.

Increase equipment effectiveness.

The global average overall equipment effectiveness (OEE) performance of underground mines is **27%, and 39% for open-pit mining.**[4]

Mitigate the variability inherent in mining operations while unlocking new levels of productivity using sensor data from equipment—with the computing power and connectivity needed to interpret and act on that data.

Automate operations for added productivity gains.

Automated haulage can **reduce TCO by 15 to 40%.**[4]

Automation applications supported by Rajant's Kinetic Mesh network have the potential to improve operating discipline and efficiency while minimizing personnel safety risks.

Increase production yields quickly.

By analyzing real-time data with analytical engines, plants can often **improve their processed mineral yields by 3 to 10% within months.**[4]

Run applications that perform advanced analytics to identify new ways to optimize everything from scheduling to machine movements, processing, and more—all driving greater production output.

See the ROI for Yourself

Submit your application requirements—both current and desired—to Rajant's team at **www.rajant.com/applicationchallenge** to get started today!

1. https://www.honeywellprocess.com/library/marketing/whitepapers/EB-12-003-WhenEquipmentMonitoringMakesCents-ENG.pdf
2. "Prevent Your Machines Taking Sick Days", Alstom MSc, 2014
3. http://www.scanimetrics.com/condition-monitoring-news/14-equipment-monitoring/88-safety-officials-push-for-the-use-of-sensors-to-monitor-mining-equipment
4. http://www.mckinsey.com/industries/metals-and-mining/our-insights/how-digital-innovation-can-improve-mining-productivity

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