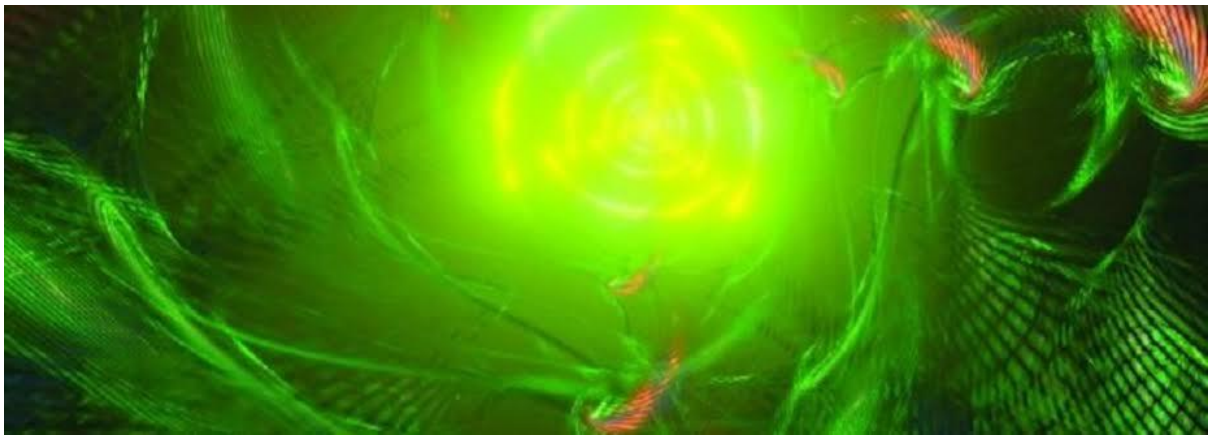
Underground mine connectivity facilitated with innovative solution



By Lou Caruana for ICN

RAJANT Corporation, together with Madison Technologies, Poynting, Extronics, and Australian Droid + Robot, have joined together to provide fully mobile, underground mine connectivity.

Underground mines and tunnels are some of the most challenging environments in which to deploy network systems.

Connectivity and throughput demands are high, but circular ramps and declines, stopes, and mine layout place limitations on how far wireless signals can travel.

Many mines, therefore, depend on fibre to achieve reliable underground communications, but installing fibre in active drives, panels and declines is difficult to schedule and can create operational and maintenance nightmares.

In addition, development plus drill and blast areas can rarely support any fibre infrastructure. It is not uncommon for trucks to accidentally catch and rip down sections of fibre and when that happens connectivity across the entire underground mine can be lost.

Rajant's Kinetic Mesh provides a robust alternative to fibre and traditional single radio wireless systems using multi-radio, multi-frequency BreadCrumb nodes, and Rajant's patented InstaMesh networking software.

The nodes, combined with Poynting's wide-band, bi-directional, circular polarized antenna system, create a complete underground and tunnel-wide wireless network for mission-critical data, video, and voice communications.

Both Poynting Antennas and Rajant represent quality and excellence in industrial IoT, which is of positive and powerful customer significance, according to Poynting Antennas CEO Stephen Froneman.

Extronics rugged and intrinsically safe AeroScout Wi-Fi-based active RFID tags for personnel and asset tracking operate in real-time over Rajant's network, which never breaks for handoff.

With location tracking precision of about 10m, the tags can be used to identify productivity bottlenecks for improved operational efficiency.

Rajant sales & marketing executive vice president Geoff Smith said with the greater safety, efficiency, and autonomy this underground network provides, it can support lifesaving as well as asset-protecting technologies within extreme hazardous mine environment.

Australian Droid + Robot's Explora droid has onboard Rajant BreadCrumb technology for underground inspections.

With the mining industry facing increased, stringent safety and productivity mandates, they look to leverage bandwidth-intensive autonomous systems and applications.

Rajant's Kinetic Mesh maintains uninterrupted high throughput and low latency to overcome any interference, enabling the machine to independently scan, sense, and explore where hazardous to miners.