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New technology creates safer and more efficient mines

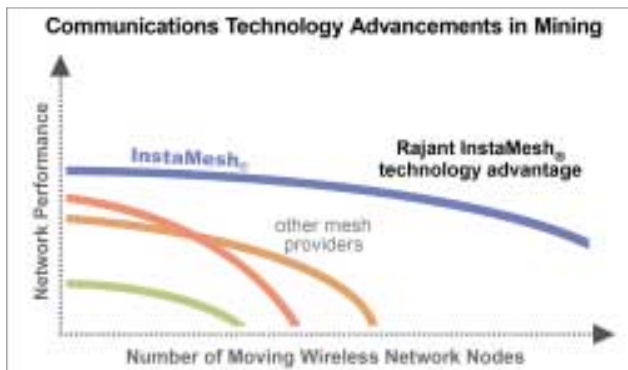
Glenn Booth, Vice President, Marketing, Rajant Corp notes that the key element that underlines safety and reaches into productivity is communications technology.

Communications play the vital role in first response situations, diagnostics, personnel management and more. Having reliable communications technology becomes not a question of possibility but a matter of necessity.

Traditionally, the implementation of new technology within a mine leads to better safety training and more defined processes for employees. The recent developments and improvements in broadband wireless networks have allowed for more data to be transmitted and captured in real-time, allowing staff to be proactive as opposed to reactive. Consistently identifying potentially hazardous conditions before they occur reduces the amount of overall accidents.

Rajant's InstaMesh® technology provides portable wireless mesh networks that utilise open standard 802.11 protocols to provide the necessary communication backbone for real-time decision making. InstaMesh is the intelligence that manages hundreds of connections from Rajant devices (known as BreadCrumb® units) to other stationary or moving devices. Traditionally, mesh networks have difficulty adapting to physical changes in a wireless network creating excessive lag time. By the time the network stabilises, a node could have been moved or line of site could have been blocked and the stabilisation process starts again resulting in lost time and data.

InstaMesh technology is always one step ahead of any changes in the



network with rootless meshing that adapts in real-time. Miners, wireless phones, wireless cameras, haul trucks, shovels, loaders and other equipment move around in normal operation without lag in communications. Importantly, the system is easily configured, self-healing and extendable without the need of an on-site IT specialist.

Because of InstaMesh technology, Rajant devices can maintain multiple high speed paths to transfer data, voice and video ensuring network resiliency. Critical information can be instantly transmitted not only to the mine's first responders in the instance of a possible safety breach but also to the engineers, operators and management during normal mining operations.

Rajant InstaMesh technology also gives the added advantage of reach-back



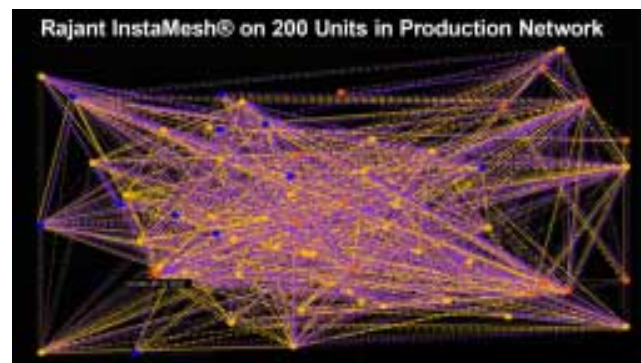
to existing non-mesh networks. In the case of a mine disaster, first responders can communicate with each other using the existing network or can very quickly extend the existing network to cover additional resources or physical areas. InstaMesh technology can also extend into and through underground mines, notoriously difficult places for wireless networks to function. In fact, the West Virginia Office of Miners' Health & Safety certified the Rajant BreadCrumb WE-IS product as an intrinsically safe wireless mesh device for underground tracking and communications.

Also aligning safety and production within a mine is the ability to track and manage assets. Interfacing heavy equipment with various sensors such as alarms and video cameras gives mine operators real-time access to vital information. With a wireless network covering the entire mine, cameras can be placed at critical intersections to monitor movement thus avoiding potential collisions, overloads or malfunctions. Sensors can not only warn nearby personnel of hazardous conditions but can also send information over the network to dispatch operators. Cameras placed in the front and rear of haul trucks can identify obstacles that might cause tire damage while sensors placed on-board can monitor diagnostics such as tire pressure, oil and engine temperature, tachometer, fuel, payload and GPS co-ordinates.

Before the advent of portable, wireless mesh networks, productivity increases were related to the implementation of closed proprietary third party fleet management and condition monitoring systems. These systems are not easily integrated with each other and can require separate networking platforms. Rajant BreadCrumb units were designed with 802.11 open standards to allow 3rd party vendors and other applications to connect with dispatch, machines, miners and the entire worksite on one common platform.

Rajant recently proved the viability of the BreadCrumb network by deploying 200 units (specifically the BreadCrumb ME and BreadCrumb XL products) to form a large scale wireless network in a well-known open-pit mine. This particular network is used to monitor overall shift production on individual vehicles as well as equipment health diagnostics. The InstaMesh networking algorithm allows each unit and sensor on the network to maintain connectivity despite the mobility that causes conventional networks to experience severe instability. The Rajant network allows the mine operator to maximize mine excavation uptime, efficiently monitor vehicle maintenance conditions and synchronise the movement of vehicle activities throughout the mine.

Additionally, the InstaMesh technology allows operators to easily manage the complexity of a densely populated mesh network. Rajant Corporation is the trusted source for this mine's 24 hour, seven days a week operational network.



Presently, Rajant offers five configurations of its BreadCrumb product designed for specific tasks: BreadCrumb XL, XLV, XLE, XLR, SE, WE, ME & ME2. www.rajant.com IM