CUSTOMER SUCCESS STORY

NOMADIC WIRELESS TERMINALS SUPPORT CRITICAL COMMUNICATIONS IN REMOTE OIL SANDS REGION

Extracting oil from the Athabasca oil sands in remote, northern Alberta, Canada is rugged and dangerous work in a harsh environment. The active open-pit mining region covers hundreds of square kilometers. A global oil and gas company that runs the mine deploys a dedicated workforce to operate the giant excavators, bulldozers and dump trucks used for extracting and transporting the oil-rich sand to nearby processing plants.

CUSTOMER SITUATION

Communications are critical to running efficient, continuous and safe open-pit mining operations. The customer uses a wireless mesh data network to connect heavy equipment operators to each other, and with the operations center. The mesh network comprises Cisco 1572 Wi-Fi access points (APs) operating at 5.8 and 2.4GHz. The 2.4GHz band connects nearby mobile devices while the 5.8GHz band backhauls traffic from the mesh nodes to the operations center.

Over such a wide area, communications between vehicles and the operations center often traverses multiple Wi-Fi hops. Multipath transmissions like these cause signal degradations and slow data connections.

Rather than routing signals around an expanding drainage pond using more APs, the customer wanted to transmit signals across the pond over a hop of nearly 6 Km. A fixed point-to-point (PTP) microwave hop would not work with APs in motion.

SOLUTION

At Redline's recommendation, the customer ordered a RDL-3000 XP Ellipse sector controller and RAS (Rapid Alignment System) Elite nomadic terminals.

Not an omni-directional antenna, the RAS Elite is an intelligent terminal with ten (10) 36° antennas mounted inside the cylindrical housing for full 360° coverage. With no moving parts, it is very reliable.

RAS Elite terminals identify each Ellipse sector controller in the area as they constantly scan 360°, then lock on to the one with the strongest signal. Once it moves out of range, the RAS Elite rescans for the next-nearest Ellipse.

The RAS Elite terminals are mounted atop telescopic towers on portable trailers. A collocated Cisco AP is connected to the RAS unit. The Cisco AP integrates the mesh network and the RAS Elite provides the backhaul.

The Ellipse sector controller is positioned on the south side of the drainage pond and aimed towards the RAS terminals on the north side. These RAS Elite terminals are aligned in 45° and 130° sectors to extend signals over the entire backside of pond.

Both RAS Elite terminals operating at 5.4GHz avoid interference with the 5.8GHz Cisco APs. RAS transmit power is set at maximum output to ensure strong connections with the Ellipse.

OUTCOME

RAS Elite nomadic terminals immediately improved communications with faster connections even as heavy equipment moves around the open pit. Mesh connections now are made in as few as 2-3 hops.

The RAS Elite terminals proved very reliable, maintaining steady signal connections through prevailing cold and windy conditions.

When he saw the improved system performance with the RAS Elite after struggling for a solution, the customer's field manager said simply, "Unfrigginbelievable!"

ABOUT REDLINE COMMUNICATIONS

Redline Communications is the creator of powerful wide-area wireless networks for the world's most challenging applications and locations. Used by Oil & Gas companies, militaries, municipalities and telecom service providers, Redline's powerful and versatile networks securely and reliably deliver voice, data, M2M and video communications for mission-critical applications.

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