Photo Source: CCL

Overview

In order to increase the productivity, safety and security of mining, staying abreast with the latest communication technology is the key to achieving these objectives. The extreme environment of coalfields makes wireless connection an ideal solution for various applications since wireless can be deployed virtually anywhere.

Operated by Sainik Mining and Allied Services Limited ("Sainik'), the open-pit mines in Jharkhand of India urgently required a high capacity wireless broadband network to provide internet connection for its site offices, RFID tracking application as well as wireless video surveillance system. Reliable and always available connectivity is crucial in the coalfield because when a data network shuts down or becomes unavailable, the entire operation will be suspended. Compared to wired solutions, wireless devices are easier to be replaced in the event of failure.

Pixel House Automation Pvt. Ltd. ("Pixel House") was appointed by Sainik to design and install the wireless network for its coalfield. Owing to the rugged, dusty and ever changing landscape of the coalfield, Pixel House selected Altai's C1n series to provide point-to-point wireless connection. With a total area of over 6 sq. km, the entire coalfield is fully covered by Altai Super WiFi.

Customer Name:
Central Coalfields Limited ("CCL")
(coalfield owner)
Sainik Mining and Allied Services Limited
(coalfield operator)
Pixel House Automation Pvt. Limited
(system integrator)

Deployment Location:
Jharkhand, Ranchi of India

Application:
Private network for video surveillance system, RFID applications and LAN network

Products used:
Altai C1n, C1an and C1xan

Result:
The Altai Super Wi-Fi network is able to withstand the harsh environment of coalfield to provide full network coverage for internet access, RFID vehicle tracking application and wireless video surveillance system.
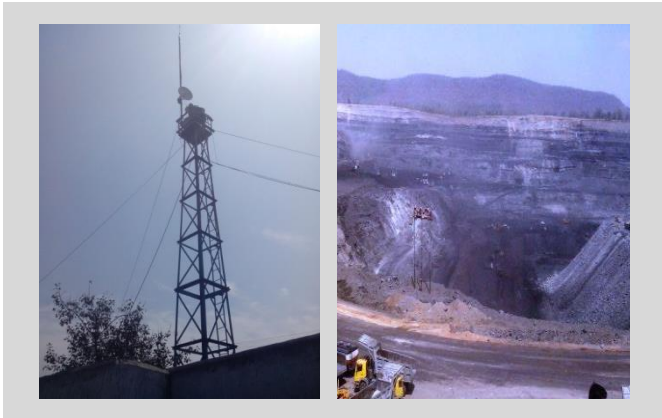
Testimonial:

"We found Altai point-point & point-multipoint radios a stable solution for Wireless CCTV backhaul, providing stable and sufficient bandwidth for IP CCTV Surveillance for real-time viewing. These Altai radios provide very high throughput in point-point, point-multipoint or daisy-chain topologies without impairing real-time viewing experience of high grade megapixel CCTV cameras."

SH. V.K Shukla, Project Officer (Ashoka Project, CCL)
Major N. S Rathore, COO (Sainik Mining & Allied Services Ltd.)

The Challenge

- Dusty, rugged and ever changing landscape with limited sites for installation
- Lack of Ethernet & Internet backbone
- Network redundancy is required
- The network must be expandable and easy to deploy
- Extending live CCTV feeds from Control Rooms to 'Coalfields WAN' over Internet in phases

The Solution

In order to provide full outdoor WiFi coverage, C1n and C1an are mounted on towers to provide internet connection for RFID vehicle tracking application and central control room.

Operating on 5GHz channels, the C1xan's are installed on different towers and rooftops of on-site offices to provide up to 6km point-to-point wireless connection for the video surveillance system. All the wireless CCTV cameras are connected to the central control room and the cameras are installed in strategic locations to avoid blind spots. Since the wireless network must be always available, another pair of C1xan are connected to provide network redundancy.

The Result

With high gain smart antennas and advanced signal processing algorithms, the Altai C1n series is able to provide long range coverage with high throughput. Owing to the ever changing landscape of open-pit mines, the compact and portable design of the C1n series enables the network operator to expand its WiFi network easily.

About Altai

Altai Technologies is a leading provider of carrier-grade WiFi products and technologies with a distribution network reaching 100 countries. Altai Super WiFi is the leading solution for vertical industrial markets, covering over 180 terminal ports and airports globally.

The Altai Super WiFi Solution includes a complete portfolio of indoor and outdoor products for carriers, WISPs, and enterprises to support a wide range of applications such as mobile data off load, public access, WLAN access, and backhaul.

Utilizing patented smart antenna technology, as well as a cloud-based management system called AltaiCare, the Altai Super WiFi Solution is designed from the ground up to deliver WiFi networks that have unprecedented performance, reliability, scalability, and manageability.

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