Optimizes efficiency and safety

Coordinated operations perform more safely with higher efficiency – and few industries know this than the rail industry. With increased status measurements, controls, and video verification, freight gets to the right place on time and without incidents. Extending measurements to monitor the health and wellbeing of workers also increases operational safety. As more performance enhancing sensors and cameras are brought onboard, leading freight rail operators are turning to private communications networks to connect remote devices and controls reliably and at substantial cost savings compared with leased lines. Wireless communications infrastructure can also be implemented without causing interruptions to operations, without the time and labor cost of trenching cables.

SCADA BACKHAUL

Certain applications in yards, intermodals, the wayside, and the mainline rail still require serial communications. If these sensors and controls are already in place, they simply remain active – measuring and performing actions with a private wireless communications infrastructure network connecting the operation center with the remote facilities. Seamless, secure integration of serial communications on IP enables manageability – control can be rapidly centralized and standardized across the operation, without the time and cost associated with replacing field devices.

DATA TRANSFER

SCADA devices don't need much bandwidth, but high data rates are needed to enable adequate capacity to backhaul wayside messaging servers for trains, as well as transmit large HD video files from unmanned aerial vehicle (UAV) drones that inspect the track for impediments, check conditions and scan for evidence that maintenance may be required. A wireless broadband network can be used to transfer the aggregate data from all of these functions from the field to the operation center. As implementation of streaming video grows to include more cameras in the field, including rail crossings, the network can quickly and easily scale to support emerging requirements.

VOICE CONNECTIVITY

For decades, freight rail operators have relied on large telephone companies, who are in the process of retiring most copper and T1 services in favor of voice over IP (VoIP) across operations. Now, those rail companies can simply implement their own private IP network that is customized for their specifications, giving them exclusive rights to and priority over the network, 24/7, without the subscription OPEX associated with leased line services.

INHERENT BENEFITS OF WIRELESS

A wireless broadband IP-based network has significant business benefits when compared to alternative solutions:

- Rapid deployment – Wireless networks can be installed without the time it takes to trench fiber. In addition to this fundamental benefit, wireless network solutions from Cambium Networks include features that further streamline the installation and commissioning process:

  a. LINKPlanner software enables network designers to identify the GPS locations of all equipment and model performance prior to installation, ensuring that correct inventory is ordered and the system meets performance requirements when installed.

  b. cnMaestro™ management software assists with the provisioning and commissioning of cnPilot Wi-Fi indoor and outdoor access points, helping installers get the Wi-Fi connectivity up and running without the hassle of requiring an IT specialist in the field.

  c. cnMaestro provides a bird's eye view of the entire network, enabling technicians in the operation center to quickly isolate throughput issues and get maintenance personnel on site for minimal communications down time.

- Non-disruptive to existing operations – Freight trains must keep moving. All delays are costly, making a significant impact on the business. Wireless technology can be deployed in freight yards, along right of way, and at strategic points along railways, without interrupting day-to-day schedules and operations. The communications network can be tested and cut over to a wireless IP infrastructure per the needs of the operation.

FIELD PROVEN RELIABILITY

Wireless broadband networks have been deployed by freight rail operators for the following applications:

- Rail yard connectivity

- Remote control of unmanned locomotives

- Trestle monitoring

- Field area connectivity

- Video surveillance

ABOUT CAMBIUM NETWORKS

Cambium networks is a world leader in Wireless technology with over 7 million radios sold and deployed around the world. Cambium is a channel focused company that sell through a world-wide network of distributors, VARs and System Integrators to diverse verticals including education, government and industrial sectors. For more details please visit: **http://www.Cambiumnetworks.com.**