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SUMMARY

Like any business geographically far-flung, serving many customers, the railroad has an insatiable need for communication, which has been augmented within the last two decades by the use of centralized digital networks for both operation and business aspects. Railroads remotely monitor critical data and track vital assets throughout their transportation network. They manage these remote assets deployed throughout expansive geographical areas and increasingly require real-time, 2-way communication to more efficiently manage collection and distribution of this data.

FEATURES

- Wireless Monitoring
- Remote System Access
- Reliability, even in harsh environment
- Backhaul over private or public networks
- Low bandwidth requirements
- Integrated solutions for plug-and-play installation
- Remote power solutions
- Non-line-of-sight frequency bands

BENEFITS

- Reduction in business, operations, and maintenance cost
- Immediate notification of equipment failures
- Alarms for equipment where safety has been compromised
- Centralized monitoring of remote real-time data
- Reduction in site visits and man-hours

REAL WORLD RAILROAD APPLICATIONS

Problem: Brake bearings can overheat and cause rail car brakes to fail.

Solution: Infrared hotbox detectors are installed trackside. They scan the journal bearings of trains passing at any speed. They monitor bearings heat, axle operations, and brake condition. This maintenance data is remotely collected and transmitted via wireless over private or public network to the networks operation center for action.

Problem: Debris and other incidental material can be picked up either underneath or overhead on a train as it is in transit creating a safety hazard.

Solution: Dragging equipment detectors are located ahead of major bridges and interlocking plants where the potential cost of any resulting accident is high. Rockslide detector fences alongside and even overhead are connected to the block signal system to provide advance warning. High-water, earthquake motion, shifted load and high car detectors are also installed trackside. This maintenance data is remotely collected and transmitted via wireless over private or public network to the networks operation center for action.

Problem: Keeping track of millions of railroad cars in interchange service is an expensive problem that use to be handled by clerks walking yard tracks with clipboards and later by closed-circuit monitoring of illuminated labels creeping by a TV scanner. This was a very expensive undertaking in terms of man-hours and the high cost of reader installations.

Solution: Automatic Equipment Identification (AEI) equipment which uses Radio Frequency Identification Systems (RFID) has been installed to keep tabs on locomotive units, end of train devices, freight cars, and intermodal equipment. AEI is also being used to check equipment in and out of repair facilities and to expedite interchange reporting. These assets are outfitted with tags that the AEI readers scan. This data is remotely collected and transmitted via wireless over private or public network to the networks operation center for compilation.

ADDITIONAL CONSIDERATIONS

- Does the site have commercial power?
- Does the site require a tower?
- Is there existing structures to get the proper antenna elevation?
- Is this a harsh environment?
- Are enclosures/cabinets required?
- Is this a PTC site requiring 220 MHz equipment?
- What is being monitored/controlled?
- Do competing frequencies exist?

PRODUCTS

- Solar Power Systems
- LinkUPS Battery Back-Up Systems
- Batteries & Power Options
- Cable Assemblies/Jumpers
- Connectors
- Base Antennas
- Locomotive Antennas
- Enclosures
- Radios for Backhaul
- Towers
- Antenna Mounts
- Cellular Modems
- Grounding Equipment
- Lightning Protection/AC Protection