

IP Backhaul

Repeater Site



RTU

Transceivers

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SUMMARY

Supervisory control and data acquisition (SCADA), automated meter reading (AMR), and advanced metering infrastructure (AMI) are three technologies used for the wireless monitoring and control of remote systems. Primarily used in oil and gas pipelines, waste water treatment, and oil and electric utilities, these technologies allow users to centrally monitor and control the flow of resources to reduce environmental risks and efficiently manage operations.

FEATURES

- Wireless monitoring
- Reliability, even in harsh environments
- Non-line-of-sight frequency bands
- Low bandwidth requirements
- Broadband data speeds
- Ability to handle distances in excess of 20 miles
- Signal relay capabilities
- Configurable to multiple needs and industries
- Some technologies allow for two-way transfer
- Remote control over physical operations

BENEFITS

- Reduction in operation and maintenance costs
- Elimination of system false alarms
- Centralized monitoring of remote real-time data
- Control, alarm and trend analysis
- Immediate notification of environmental issues
- Reduction in site visits and manpower requirements
- Outage management
- Maximization of profits through efficient operations

REAL WORLD EXAMPLES

Situation: An oil company had numerous oil pipelines running through rugged and remote terrain. Monitoring the flow of oil was required to prevent potential environmental damage, assess volume for sales potential, and track customer usage for billing.

Problem: Operating the pipelines required frequent site visits and significant resources.

Solution: The oil company installed 900 MHz SCADA radios at multiple points along the pipeline. The system allowed the company to monitor the flow and send real-time information to a centrally located monitoring station. They reduced expensive outages and reduced manpower requirements. In addition, they installed an outdoor UPS system to ensure the network was powered at all times to prevent any disasters.

Situation: An electric company needed an efficient way to track the electricity usage for each of its customer's households on a monthly basis to ensure accurate billing.

Problem: A technician had to stop at each customer's house to visually inspect the household's electricity usage as recorded on the meter.

Solution: Using AMR technology, the technician could simply drive around the neighborhood, wirelessly collecting readings, greatly reducing labor costs.

Situation: A state's Department of Natural Resources (DNR) needed a way to monitor a series of small dams along a moderate sized stream, so that they could send crews to adjust the dams when they caused flooding that occasionally washed out the bridges that crossed the stream.

Problem: Officials were unable to determine that the stream had overflowed prior to being notified by civilians or emergency services. This delay caused significant risks to motorists and caused hours of delays on the bridges.


Solution: The DNR installed a wireless SCADA system to monitor each dam along the stream for water flow and height, enabling them to remotely close or open the dams as needed.

ADDITIONAL CONSIDERATIONS

- Does the location have power?
- What is the distance to the monitoring location?
- How many master and remote sites are there?
- What are the required heights of antennas?
- What is being monitored or controlled?
- Are there competing frequencies in the area?
- Is it a harsh environment?

PRODUCTS

- Antennas
- Transceivers
- Remote Terminal Units (RTU)
- Enclosures
- Batteries and power options
- Cables and connectors
- Lightning protection
- Grounding kits
- Tools



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