

AN 106E

Robust, Reliable and Cost-Effective Solutions for Wireless Data Transmission Within Wind Parks

When a highly reliable data transmission connection was needed for 5 existing wind turbines, Belden designed and delivered a cost-effective wireless solution that guarantees maximum uptime of the park communication.



For an Established Coastal Project in Northern Europe, a Leading Wind Turbine Manufacturer was Looking to Establish a Failsafe Data Transmission Connection Between 5 Existing Onshore Turbines. With a Strong Emphasis on 24/7 Safety.

- Cost efficiency: the elimination of cables reduces the complexity and costs
- Reduced risk of failure as there's no need for cabling during installation and operation
- Improved safety as technicians do not have to enter into the turbine which would be necessary if cables were used
- Maximum reliability and uptime of the wind park due to highly available, stable communication with industrial waterproofed devices
- Security requirements are met regarding unauthorized entrance or breakdown of the communication network

Long-term return on investment, availability and maximum productivity were the key considerations for an established coastal project in Northern Europe.

Belden was able to offer a reliable, safe and cost-efficient wireless solution that did not require mechanical changes at the turbines. Each tower was fitted with 2 wireless Hirschmann™ IP67 access points with magnet shoes. The overall installation meets all safety and security specifications against unauthorized entrance and/or breakdown of the communication network.

Overall, Belden's wireless solution provides a significant cost reduction and ensures a failsafe transmission of data between the towers without a need to retrofit cabling or drilling, avoiding possible subsequent failures in cable transmissions. The tried and tested Hirschmann™ industrial devices are waterproof for highly reliable and stable communication, and the system offers greater safety for personnel as technicians do not have to enter into the turbine as would be necessary for a cabled network.

System Requirements

- Connection of 5 existing wind turbines
- Distances up to 15 km
- Cables cannot be installed afterwards due to restrictions of the location
- Point-to-point connection is required
- Fast Ethernet is needed
- Outdoor installation
- Drilling is not allowed at the 5 towers

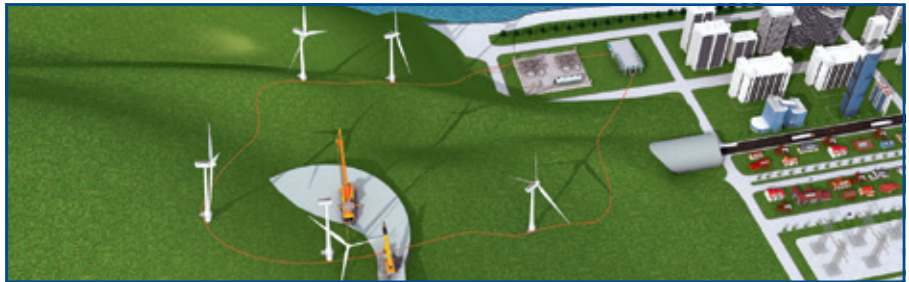


Belden® Solution

For this application, Belden designed a network topology based on Hirschmann™ BAT Wireless Access Points. These products are ideally suited to the application as they can be managed simply via safe and stable wireless communication that ensures monitoring of the network and remote access.

Our solution delivers the following benefits:

- Wireless Access points, Clients and Bridges – BAT family
 - Industrial hardened solutions
 - Futureproof investment: long lifetime/ high MTBF of the industrial product
 - Maximum stability: resulting from the ruggedized design and seawater-proof housing with M12 connectors
- Integrated POE
 - Reduce installation costs: simplified network structure enables easy and fast installation and configuration
- Integrated Authentication and encryption
 - Maximum security: highest level of WLAN security guarantees highest reliable network WLAN 802.11n
 - High bandwidth: ensures expansion of the future network
 - Flexibility: efficient network planning because long distances can be reached easily and favorable
- Remote access to the network
- Greater safety: no one has to physically climb onto the power station



Product Details

Hirschmann™ BAT-F ruggedized WLAN Access-Points

- Stable metal housing, IP67 protection class, water proof
- M12 connectors for long lasting and vibration proof connections
- PoE interface reduces number of cables and eases installation
- Low power consumption and extended temperature range
- BAT54-F with two radios IEEE802.11a/b/g
- BAT300-F with stable MiMo IEEE802.11n radio interface
- OpenBAT-F with up to two MiMo IEEE802.11n radios



Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who are able to add value to your business. When it comes to signal transmissions, Belden is the number one solutions provider. We understand your business and want to know your specific challenges and targets to see how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our three leading brands, Belden®; Hirschmann™; and Lumberg Automation™, we are able to offer the solution you need. Today it may be a single cable, a switch or a connector, thus solving a specific issue; tomorrow it can be a complex range of integrated applications, systems and solutions.

We guarantee the superior performance of your mission-critical systems, even in the most demanding circumstances. If signal transmission is vital to your business, get in touch with the partner that delivers. Be certain. Belden.