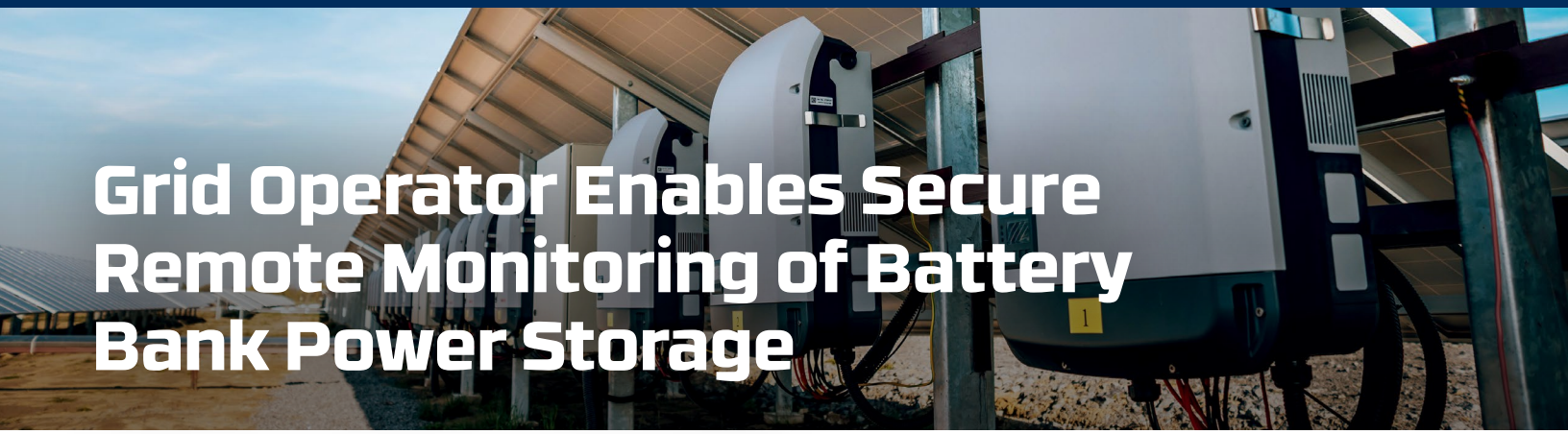
OWL Cyber Defense

USE CASE



Grid Operator Enables Secure Remote Monitoring of Battery Bank Power Storage

Case Study Summary

INDUSTRY

Energy / Power Storage

CHALLENGES

Remote monitoring of battery bank power storage units and IIoT environmental sensors

SOLUTION

OPDS-100 data diodes for one-way monitoring data transfer

BENEFITS

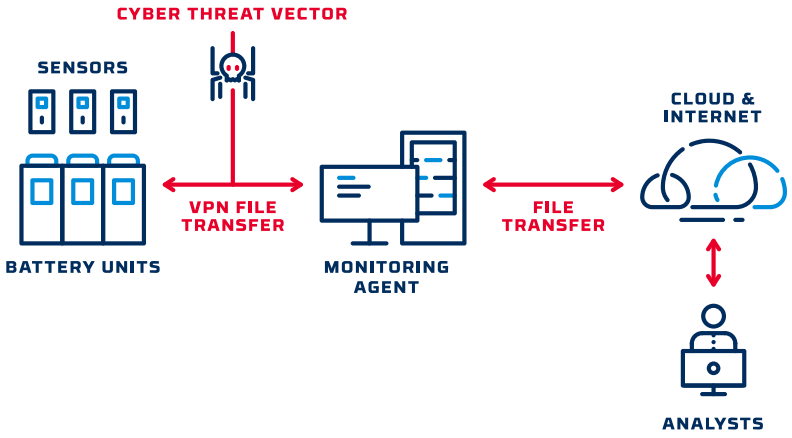
Secure remote IIoT monitoring and analysis of battery status, performance, and environmental data increased efficiency and lifespan of power storage units without exposing them to cyber threats

Cybersecurity Challenge

To enable energy sales and connectivity to the grid, distributed, battery based power banks must be monitored for battery status, performance, and environmental factors. This had been performed via periodic encrypted file transfer to a remote cloud storage environment for research and analytics via OPC, Modbus, MQTT, AMQP protocols through a VPN. However, to improve ensure maximum power charge/discharge efficiency, load balancing, battery lifespan, and safety, the operator required a more timely, secure method to connect the power storage units to their monitoring center. Due to the maintenance requirements and insecurity of firewalls, the operator sought a higher security, lower maintenance solution to enable and secure the remote monitoring connection.

REQUIREMENTS

- Enable secure remote IIoT data monitoring from disparate power banks
- Protect connected power storage units from cyber threats
- Provide the capability to transfer or connect to cloud environment
- Require minimal ongoing upkeep and maintenance



Solution

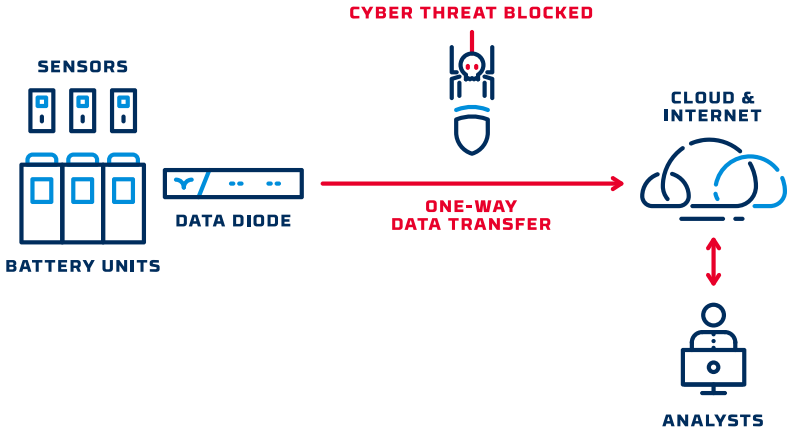
The grid operator investigated various network security options, including industrial firewalls, data diodes, and unidirectional gateways. In evaluating available solutions, Owl data diodes were deemed the simplest, most flexible and effective solution to meet their needs. The complete solution required only one 19" 1U box to achieve reliable, secure, one-way OPC, Modbus, AMQP and MQTT data transfers to the IIoT cloud monitoring center, in near real-time.

OPDS-100

OPDS-100 is a single box, 19" 1U data diode, purpose-built for network segmentation and deterministic, one-way data transfer. It is an easy-to-use, highly reliable, and cost-effective solution for low to medium bandwidth unidirectional data transfers.

Results

- Timely, actionable data availability enabled real-time grid performance optimization and energy trading
- Effective network segmentation helped to ensure absolute cyber threat protection for the battery units
- Cloud analytics on IIoT monitoring and sensor data provided increased battery longevity and reliability
- Minimal maintenance requirements dramatically reduced upkeep time and costs



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Owl Cyber Defense Solutions, LLC leads the world in data diode and cross domain network cybersecurity. With a constant focus on customers in the military, government, critical infrastructure, and commercial communities, Owl develops market-first, one-way data transfer products to meet a variety of operational needs, from entry level to enterprise.

For more information on Owl, or to schedule a demo, visit www.owlcyberdefense.com

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