DATA DIODE CYBERSECURITY

For OSIsoft PI System

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INTRODUCTION TO OWL

DATA DIODE NETWORK CYBERSECURITY EXPERTS

Over 17 years of experience protecting:

- **GOVERNMENT & MILITARY**

- **CRITICAL INFRASTRUCTURE**

- **COMMERCIAL BUSINESSES**

OSIsoft.

Technical Partner for Over 8 Years

Well over 2000 deployments in over 20 countries around the world.

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IN THE PAST

ISOLATED ICS

FOCUS ON:

- Safety
- Reliability
- System Resiliency

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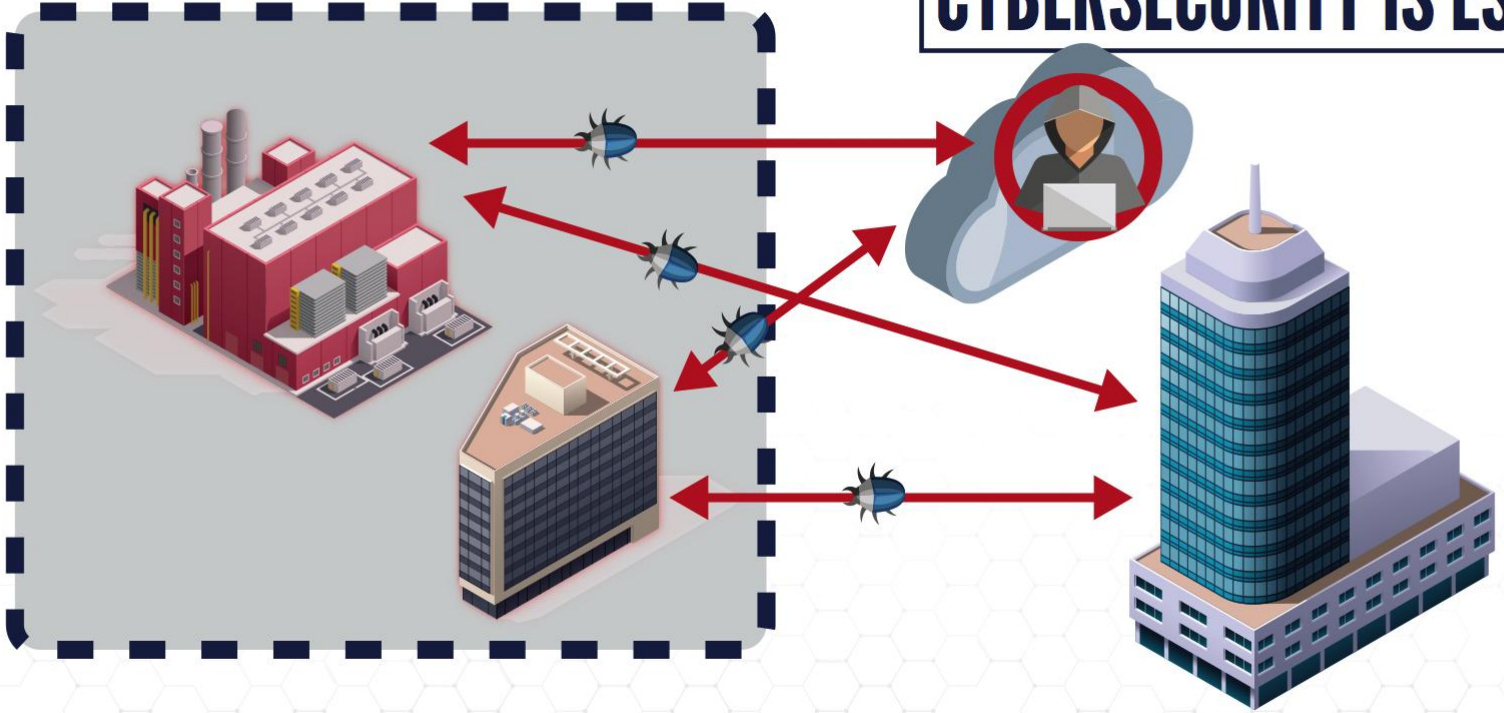
CYBERSECURITY IS ESSENTIAL



HACKERS & INFECTIONS CAN AND WILL GET INTO ICS NETWORKS AND DEVICES

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IMPLEMENTING DHS RECOMMENDATIONS

- *Reduce/Eliminate Connections in/out of the Network*
- *Convert Two-Way Connections to One-Way*
  - *One-Way into the Plant, One-Way out of the Plant*
- *Restrict Remaining Two-Way Command & Control Connections*

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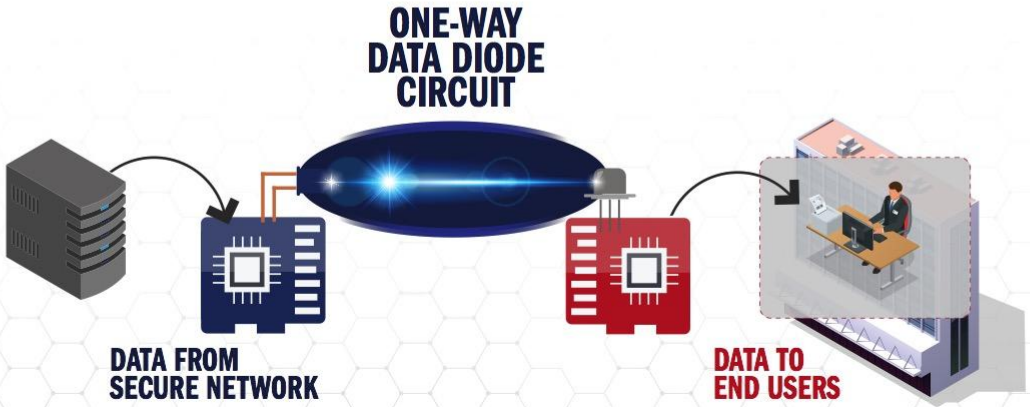
WHERE CONNECTIVITY & SECURITY MEET

WHAT'S NEEDED IS A SOLUTION TO BOTH ALLOW CONNECTIVITY AND INCREASE SECURITY.

WHAT IS A DATA DIODE?

- Powerful (unhackable) cybersecurity tool to segment and protect sensitive networks, devices, and systems.
- Physical communication device to enable hardware-enforced one-way only data transfers



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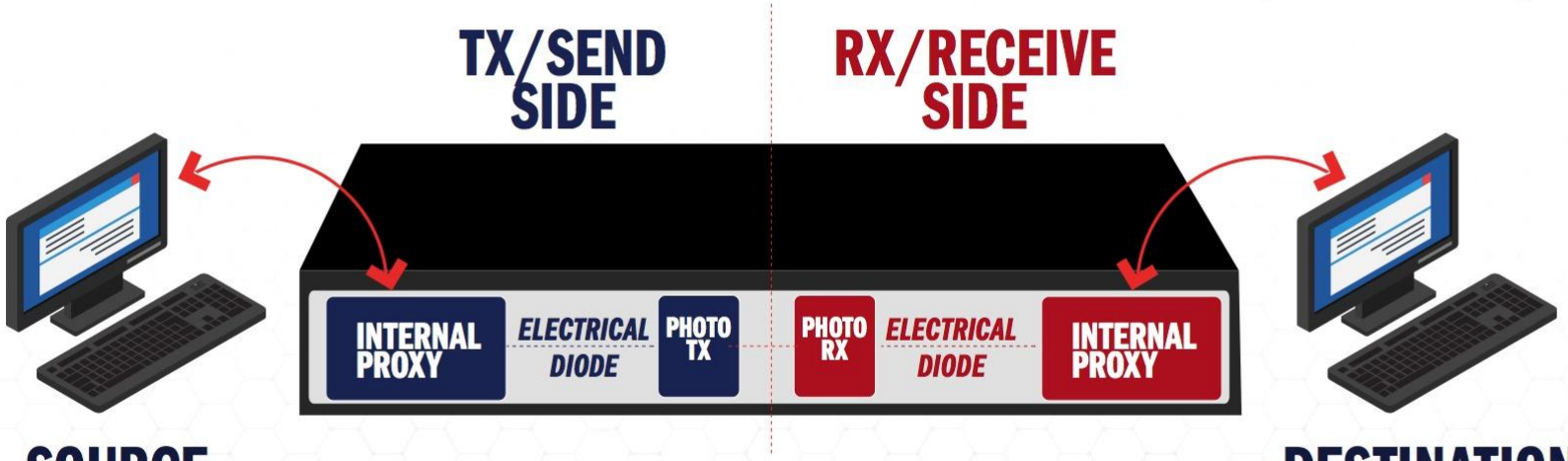
HOW DATA DIODES WORK

ONE-WAY COMMUNICATION-
From Source Network to Destination Network

Proxies Enable One-Way in a Two-Way World



Hardware physically enforces network segmentation "air gap" between destination and source

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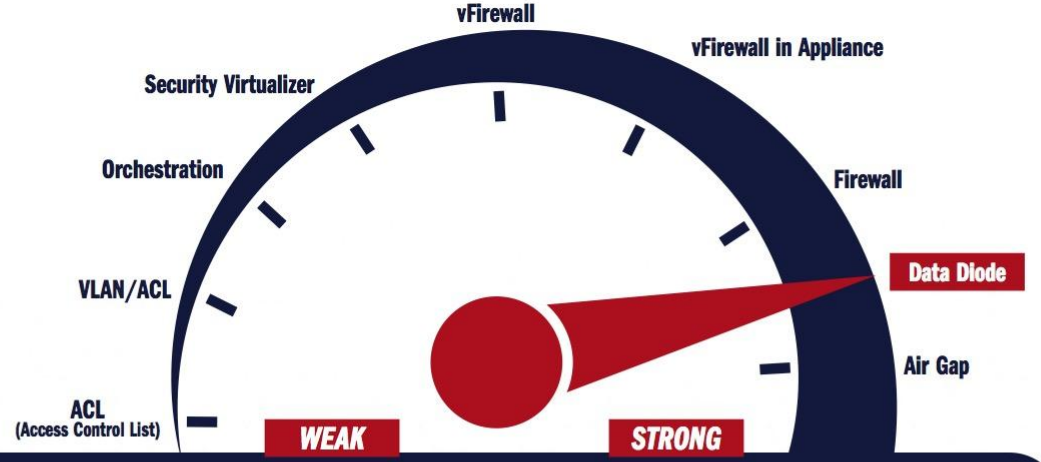
WHY HARDWARE-BASED SECURITY



SOFTWARE

- Configuration - Based
- Zero-day Exploits
- Malware / Ransomware
- Heavy Ongoing Management

HARDWARE

- Physics - Based
- Unhackable
- Invulnerable to Malware
- Little to no Ongoing Management

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OWL PERIMETER DEFENSE SOLUTION PRODUCTS

CAPABILITIES

- Secures networks from cyberattacks - via one-way DualDiode design
- Provides secure transfer of data across network domains
- Supports multiple data sessions and protocols simultaneously
- Throughput rates are controlled and easily upgraded with software license
- Owl CentOS, hardened with Guidance from Center for Internet Security *(http://www.cisecurity.org)*
- Transfer rates from 5 Mbps to 10 Gbps
- Owl Role Based Access Control System (RBAC) overlay
- Core Transfer applications to support data flows
  - UDP, TCP, File Transfer, Syslog, SNMP

SOLUTIONS

- *OPDS-5D*
- *OPDS-100D*
- *OPDS-100*
- *OPDS-1000*
- *EPDS*

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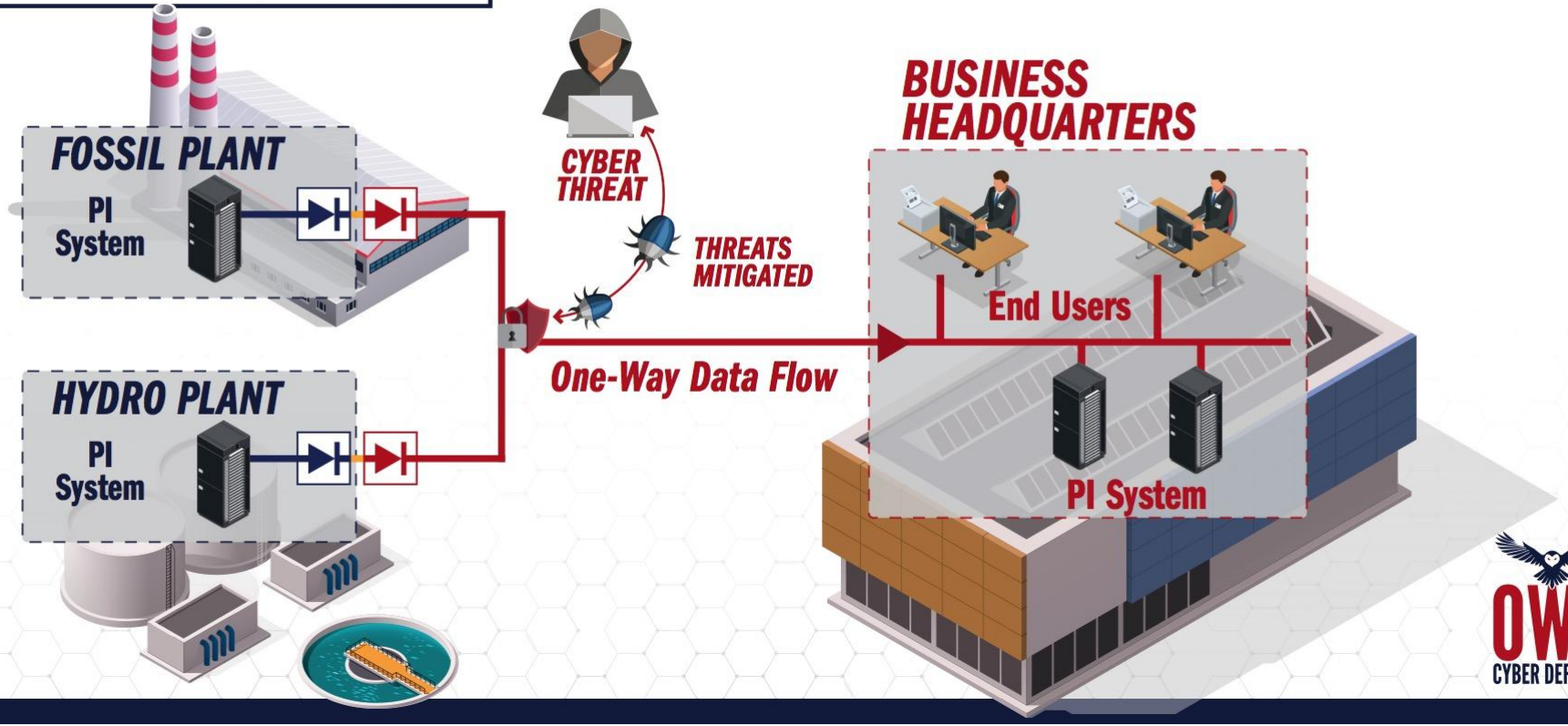
EXAMPLE USE CASES

PI SYSTEM REPLICATION



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IMPLEMENTING DATA DIODE USE CASES

One-Way Communications out of the Plant

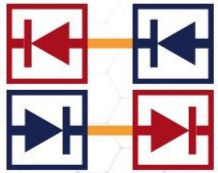
- OT to IT OSIsoft PI System replication
- Implement monitoring-only access - no remote access
- File transfer, Syslog, UDP sensor data streams

One-Way Communications into of the Plant

- IT to OT OSIsoft PI System replication
- Provide secure configuration/patch management program
- Market Operators sending in control signals

Two-Way Communications with the Plant

- OSIsoft interface nodes sending data across the OT/IT boundary
- Bidirectional communication requirements - *use a single port over a restricted path*
- PI ProcessBook access to a secure database



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OSIsoft®

OSISOFT TECHNOLOGY PARTNERSHIP (PI SYSTEM)

- Native OSIsoft Interface Nodes Integration
- PI to PI & Replication Options
- Historical Backfill and Dynamic Updates
- Multi-System & High Availability Deployments
- OSIsoft Partner for Over 8 Years

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DEMO

Video Demonstration of Owl system at the booth

- ✓ OPDS – 1000 Product
- ✓ OSI PI to PI Replication
- ✓ File transfer (TCP/IP connection)
- ✓ Video (UDP connection)

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