DATA DIODE CYBERSECURITY for OSIsoft PI SYSTEM

Presented by:

Mark Toussaint

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OWL CYBER DEFENSE

DATA DIODE NETWORK CYBERSECURITY EXPERTS

Over 17 years of experience protecting:

- GOVERNMENT & MILITARY

- CRITICAL INFRASTRUCTURE

- COMMERCIAL BUSINESSES

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

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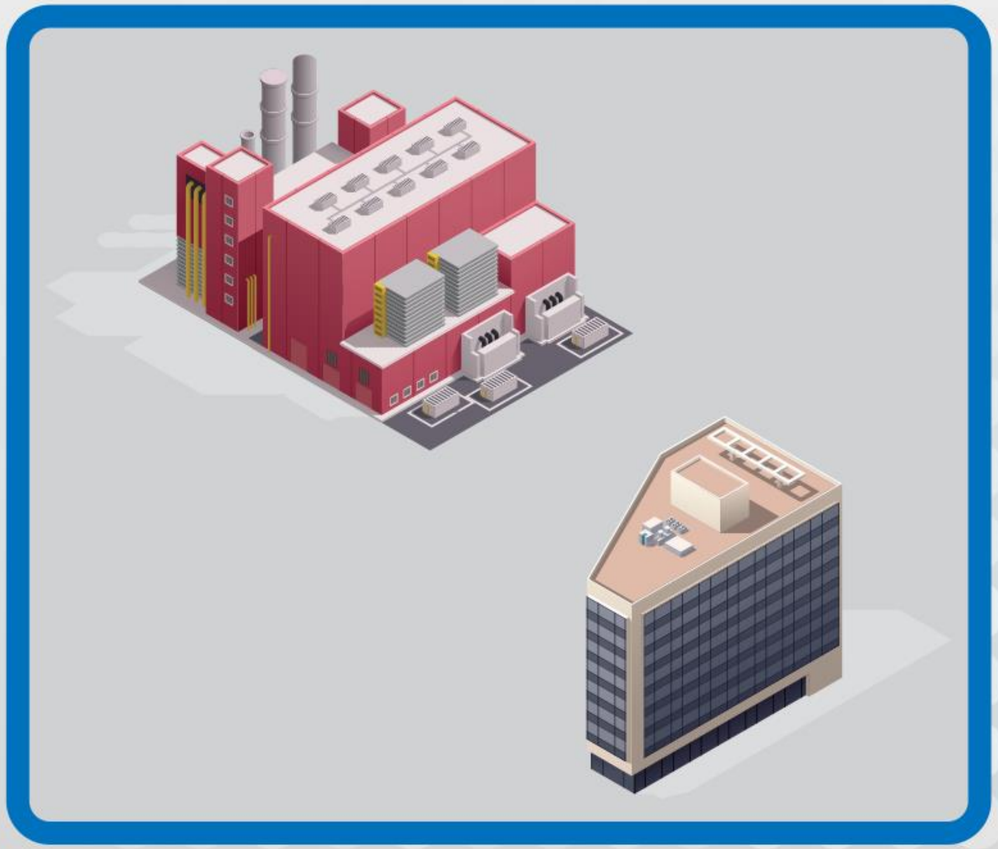
IN THE PAST



ISOLATED ICS

Focus On:

- *Safety*
- *Reliability*
- *System Resiliency*

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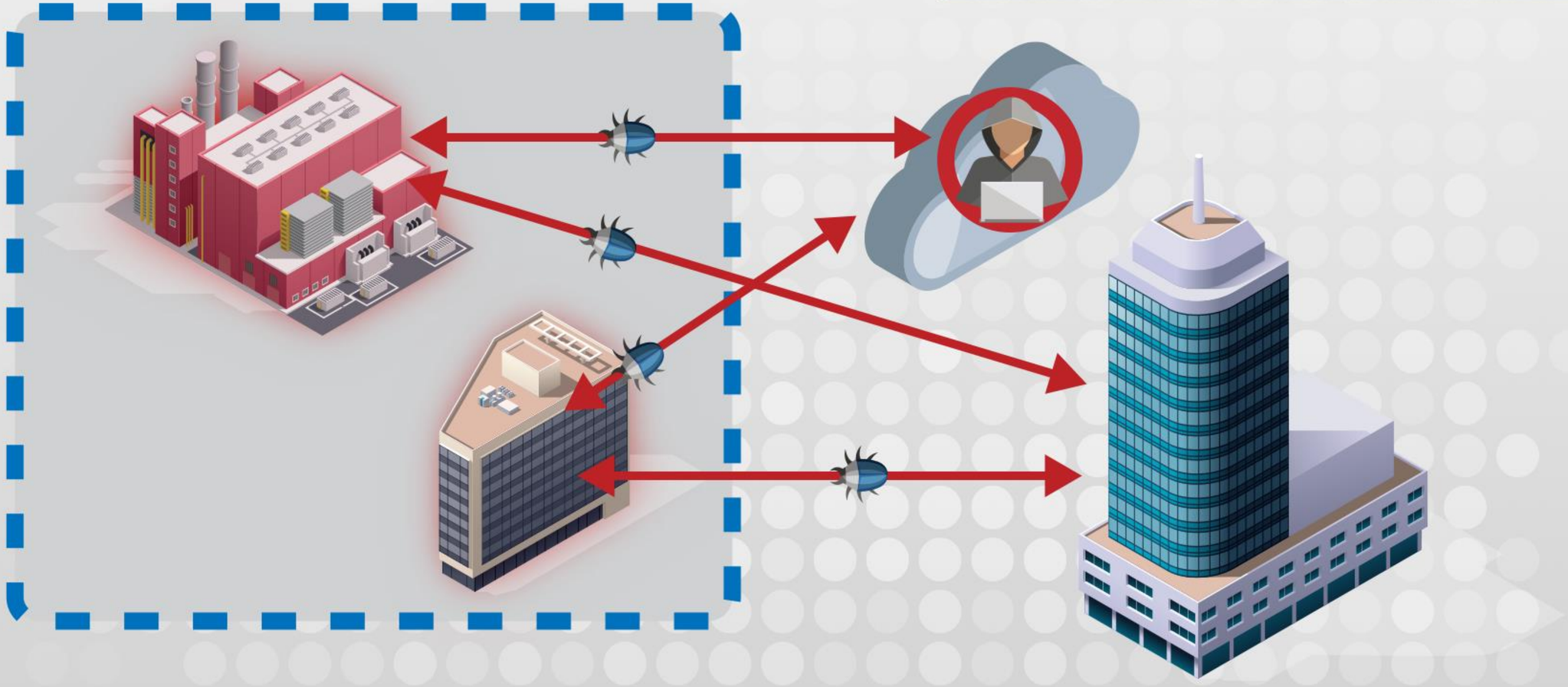
CYBERSECURITY IS ESSENTIAL



Hackers & Infections can and WILL get into ICS networks and devices

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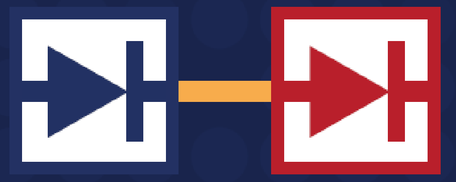
IMPLEMENTING DHS RECOMMENDATIONS



FUNDAMENTAL RECOMMENDATIONS

- *Reduce/eliminate connections in/out of the network*
- *Convert two-way connections to deterministic one-way connections*
  - *One-way into the plant, one-way out of the plant*
- *Restrict remaining two-way command and control connections*

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WHERE CONNECTIVITY & SECURITY MEET

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

ONE-WAY DATA VALVE

DATA DIODE

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

ONE-WAY DATA DIODE CIRCUIT

DATA FROM SECURE NETWORK

DATA TO END USERS

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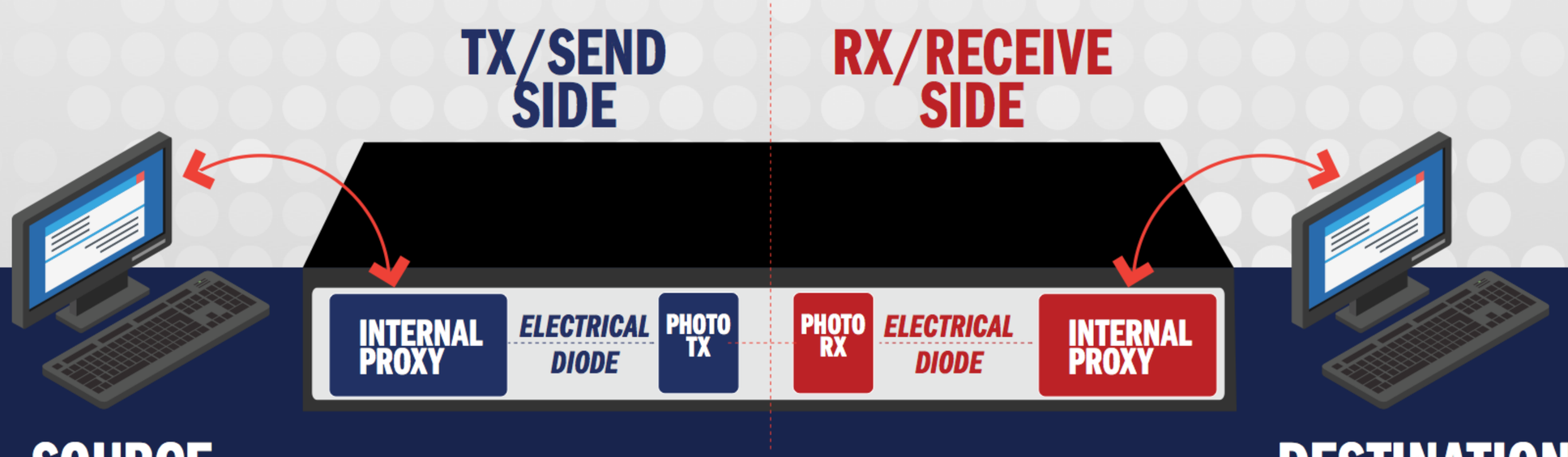
HOW DATA DIODES WORK

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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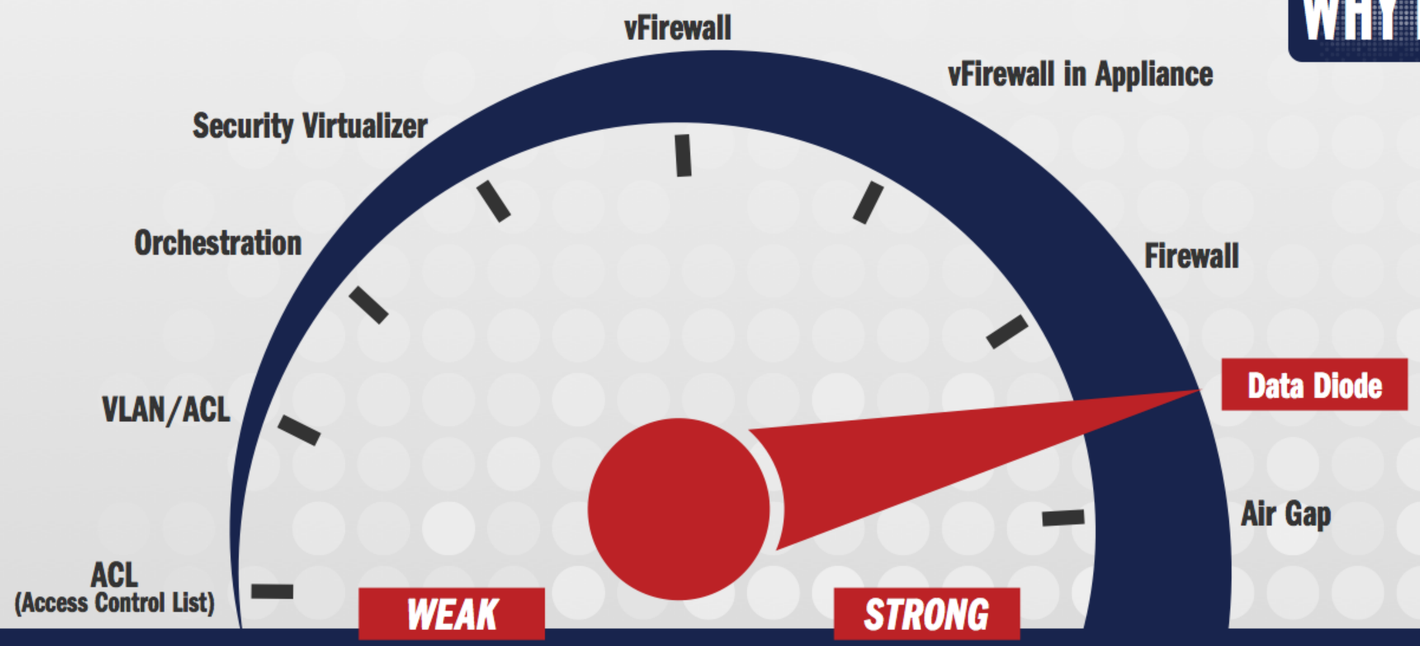
WHY HARDWARE-BASED SECURITY?



Do not require software updates themselves

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 cyber attacks - 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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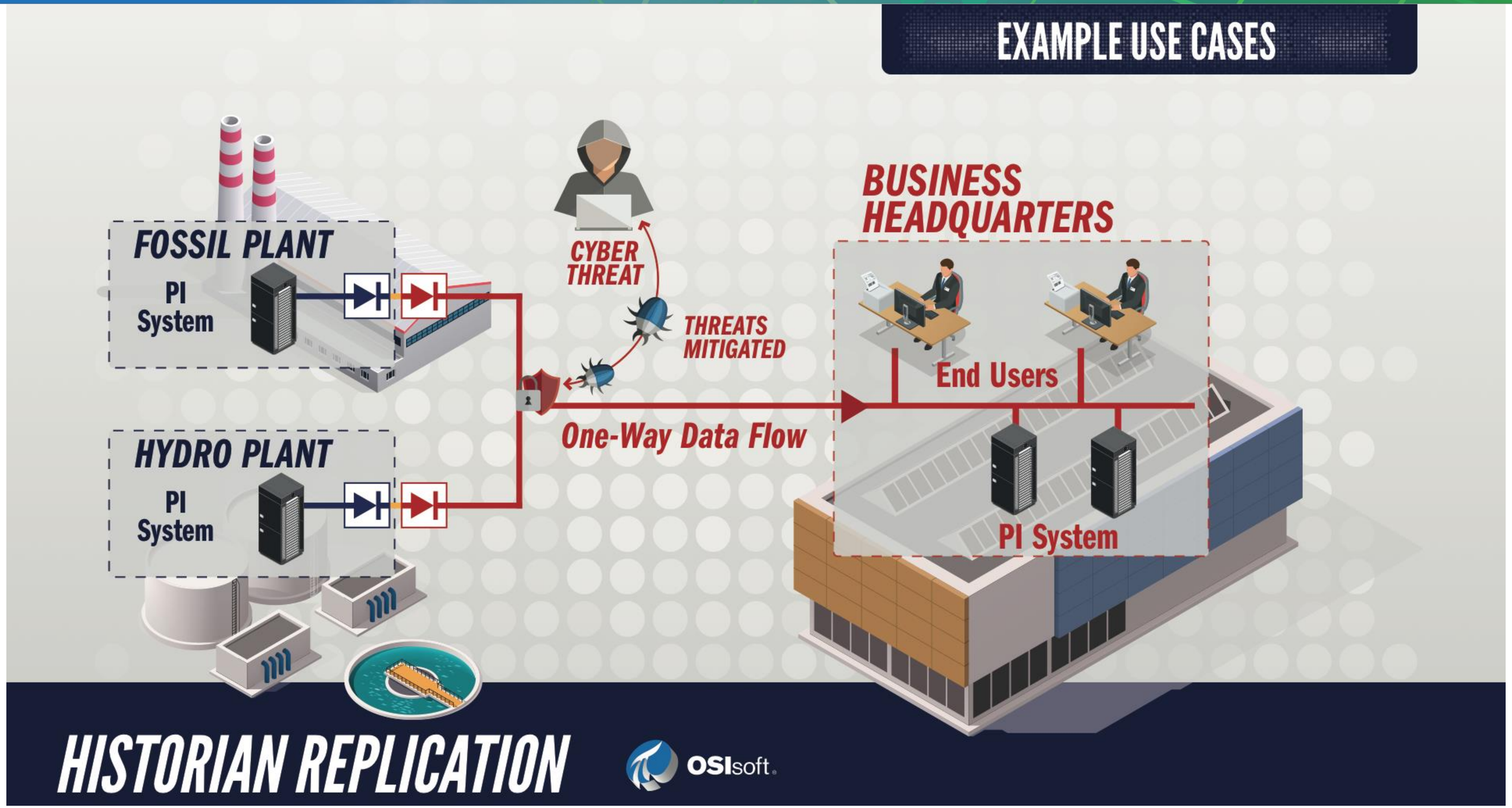
EXAMPLE USE CASES



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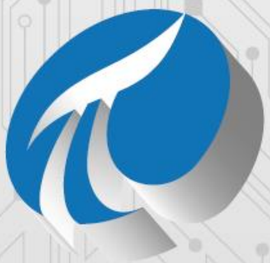

OSIsoft®

OSISOFT TECHNOLOGY PARTNERSHIP (PI SYSTEM)

- Native API Integration
- PI to PI & PI Data Archive Replication Options
- Historical Backfill and Dynamic Updates
- Multi-PI Systems & High Availability Deployments

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