

**OSI**soft®

# USERS CONFERENCE 2016

April 4-8, 2016 | San Francisco

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# Transmission & Distribution Systems

## Cyber Security

Presented by Bryan Owen PE  
OSIsoft – Principal Cyber Security Manager

# The CIP Versions

2003 – 2005

Urgent Action Standard 1200 and 1300 draft



2006 – 2009

CIP-002 – CIP-009 Version 1



2010 April

CIP-002 – CIP-009 Version 2



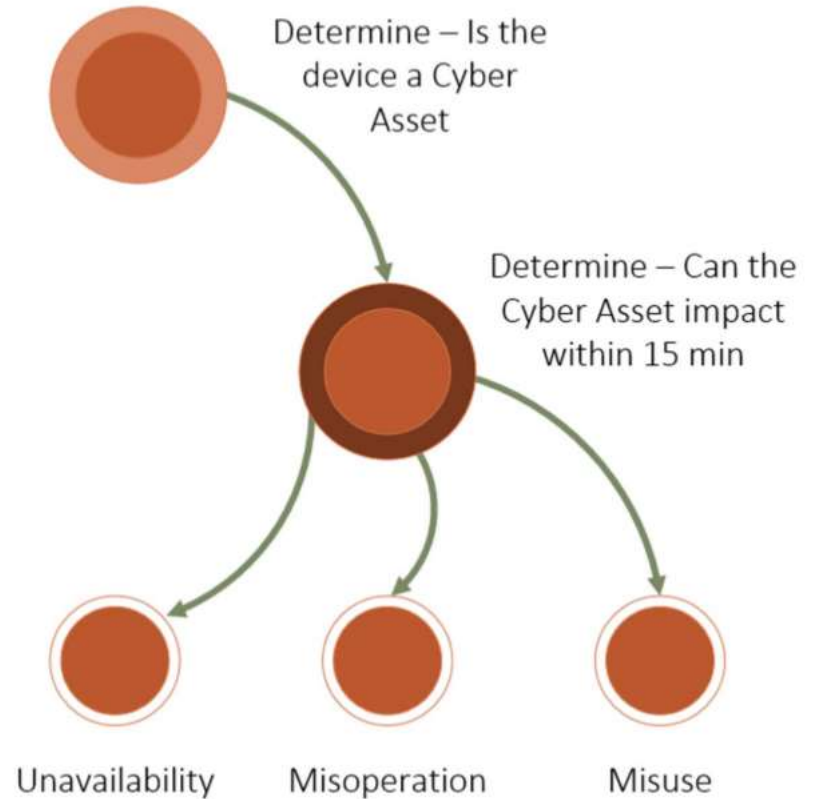
2010 October

CIP-002 – CIP-009 Version 3

CIP V5 was approved before CIP V4  
went into effect  
CIP V6 was approved before CIP V5  
went into effect

# 15 Minute Criteria

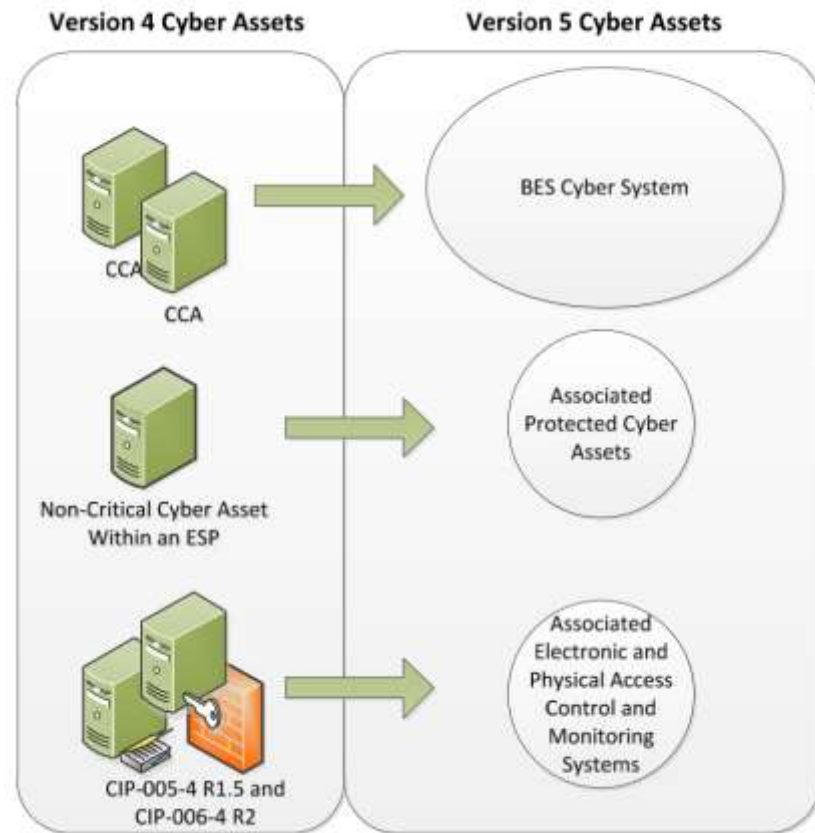
- Is the PI System a NERC CIP BES Cyber Asset?



SANS Institute 2016 ICS Security Summit

# Inside the ESP?

- Data Sources
  - Interfaces & Connectors
  - Embedded Systems
- Control Centers
  - PI Systems



NERC CIP-002-5 Standard

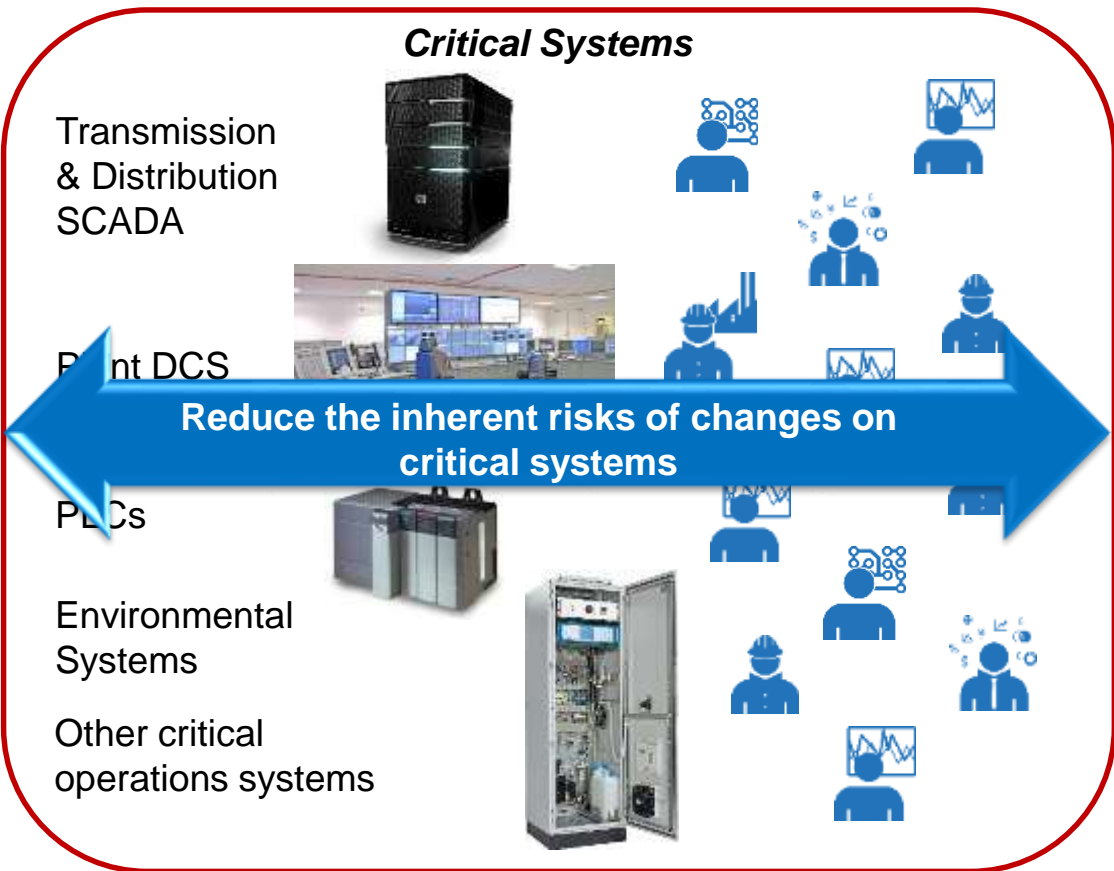
# More CIP to Come?

- External supply chain
- Protecting communication paths
- Virtualization and cloud



Technical Conference on Critical Infrastructure Protection Supply Chain Risk Management  
<http://www.ferc.gov/CalendarFiles/20160127143850-Owen,%20OSISoft.PDF>

# Core Security Value of the PI System



Electronic Security Perimeter ESP



Limiting direct access to cyber assets in the ESP while expanding the value use of information.



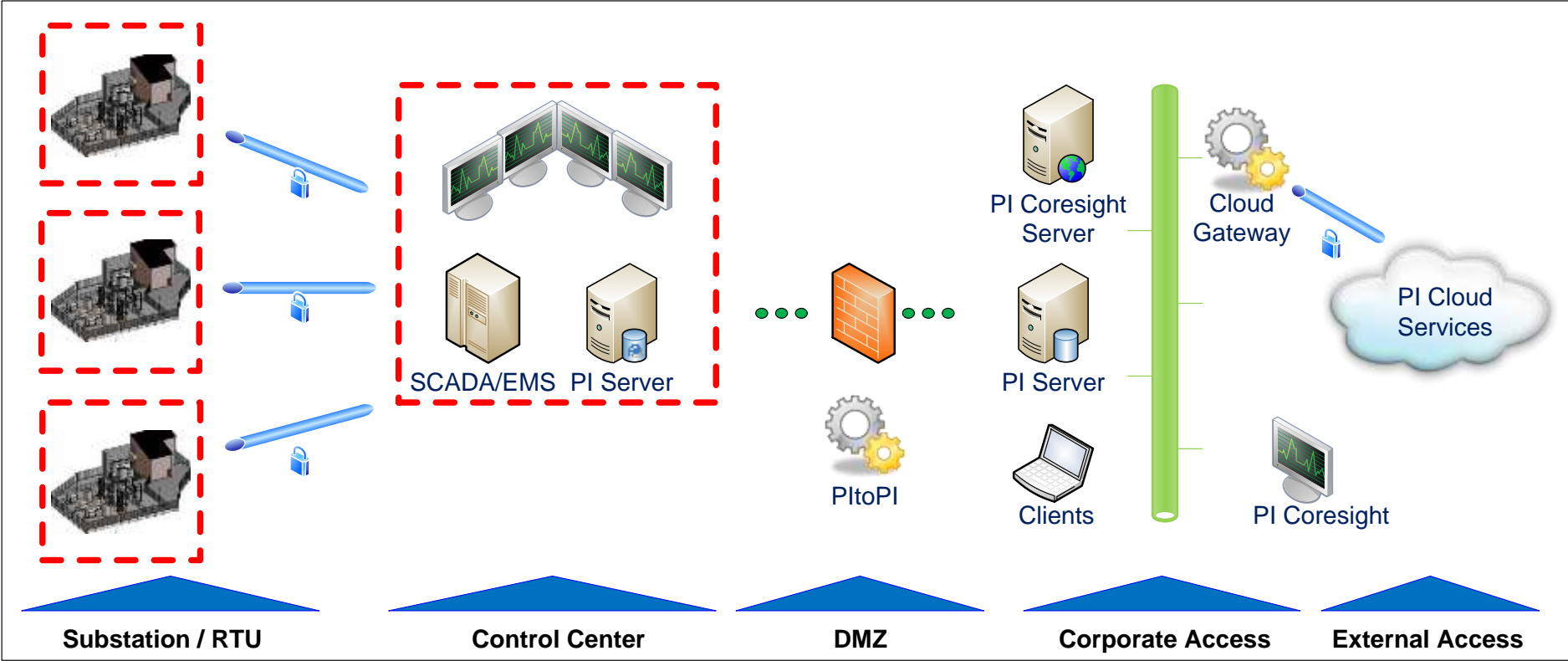
# Customer Support: Making Compliance Easier

- Network Port Documentation
- Windows Update Validation
- Anti-Malware Guidelines
- Restoration Support
- Reference Deployment Patterns
- Segmentation Approaches
- Personnel Surety Program
- Remote Access Intermediate Device (Bomgar)






Approaches with the highest security and easiest compliance involve multiple PI Systems



# T&D Reference Architecture



# OSIsoft Security Development Lifecycle Maturity Level

- Security release gate
  - Threat model
  - Binscope
  - Banned.h
- Training
  - 
- Tool adoption
  - 
  - Static & dynamic analysis; fuzzing,  **QUALYS**
- 3<sup>rd</sup> party review & consulting
  -   Microsoft
  - Code review, Vulnerability assessments and penetration testing
- In progress
  - Dashboard “Trust Center”
  - Benchmarking
  - Auto update mechanism
  - New technologies

# Updates: Does upgrading PI Really Make a Difference?

- **Idaho National Lab**
  - 2005 Assessment
  - 2008 vCampus Live!
  - 2009 vCampus Live!
  - 2011 Cooperative Research
  - 2012 vCampus Live! “Detect & Defend”
- **US Army NetCom**
  - 2009 CoN #201006618
  - 2013 CoN (recertified)
- **US NRC**
  - 2010 DISA, NIST
- **SAP QBS Certification**
  - 2012/2013/2015 Veracode
- **Windows Logo Certification**
  - 2008 Windows 2008 Server Core
  - 2011 Windows 2008 R2 Server Core
  - 2012 Windows 2012 Server Core
- **Azure Penetration Testing**
  - 2014 PI Cloud Connect (Utility Partner)
  - 2014 PI Cloud Access (IOActive)
  - 2016 OSIsoft Cloud Services (In Scoping)
- **Information Security Consulting**
  - 2009 PI Server
  - 2010 PI Agent
  - 2011 PI Coresight
  - 2011 PI AF
  - 2012 PI ProcessBook
  - 2012 Products in Design (3)
  - 2013 Engineering Management
  - 2013 Products in Design (3)
  - 2013/2015 SDL for Security Champions
  - 2013/2014/2015 Defensive Programming (Cigital)
  - 2015 PI Connectors
  - 2015 PI Transport Security (IOActive)
  - 2015 PI System Security Review
  - 2015/2016 Advanced Tools provided by Microsoft
  - 2016 PI Coresight (Q2 Scheduled IOActive)

감사합니다

谢谢

Danke

Merci

Gracias

Thank You

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Спасибо

Obrigado

# Next up! 9:45am – 10:15am



- Using Operational Data to Improve Dispatchers Situational Awareness
- Speakers;
  - **Frank DiCicco** – Sr Analyst, Operations Applications GIS Project Engineer @ PJM
  - **Mark Saiget** – Software Engineer @ Integral GIS

# Next up! 10:30am – 11:00am



- The Synchrophasor Grid & Automation Lab and OSISOFT's PI System at UCSD
- Speaker;
  - **Raymond de Callafon**– Raymond de Callafon is a full Professor in the Department of Mechanical and Aerospace Engineering (MAE) at the University of California, San Diego (UCSD).

# Next up! 11:15am – 12:00pm



- “Equipment” Failure is Not an Option
- Speaker;
  - **Vince Polsoni** – Manager of the Station Sustainment Department @ PowerStream Inc.

# Next up! 2:00pm – 2:30pm



- Improving Network Monitoring with OSIsoft's PI System
- Speaker;
  - **Stefano Bassan** – Control and Automation Engineer @ Radix



# Next up! 2:45pm – 3:15pm



- Use Cases of the PI Integrator for Esri ArcGIS in Distribution
- Speaker;
  - **Subbu Sankaran**– Software Component Architect @ San Diego Gas & Electric

# Next up! 3:30pm – 4:15pm



- Asset Maintenance and Condition Assessment
- Speaker;
  - **Steven Greulich** – Senior IT Professional @ PSE&G
  - **Angela Rothweiler** – Reliability Centered Maintenance (RCM) Expert @ PSEG&G
  - **Paloma Mejia** – Manager w/ Accenture's Smart Grid Services

# Kevin P Walsh

- [kwalsh@osisoft.com](mailto:kwalsh@osisoft.com)
- Industry Principal – T&D Smart Grids
- OSIssoft, LLC

## Questions

Please wait for the **microphone** before asking your questions



State your **name & company**

## Please remember to...

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谢谢

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**“Hope is not a business strategy. Be relentless”**

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