



Collect Your Data in Context using PI Connectors

Presented by Chris Coen, Product Manager
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Customer challenges

Time



Spend a lot of time configuring tags

Configuration



Challenging to configure interface

Build



Time consuming to build an asset model

Speed



Collect high speed data

Embedded



Run on embedded devices / Linux

Secure

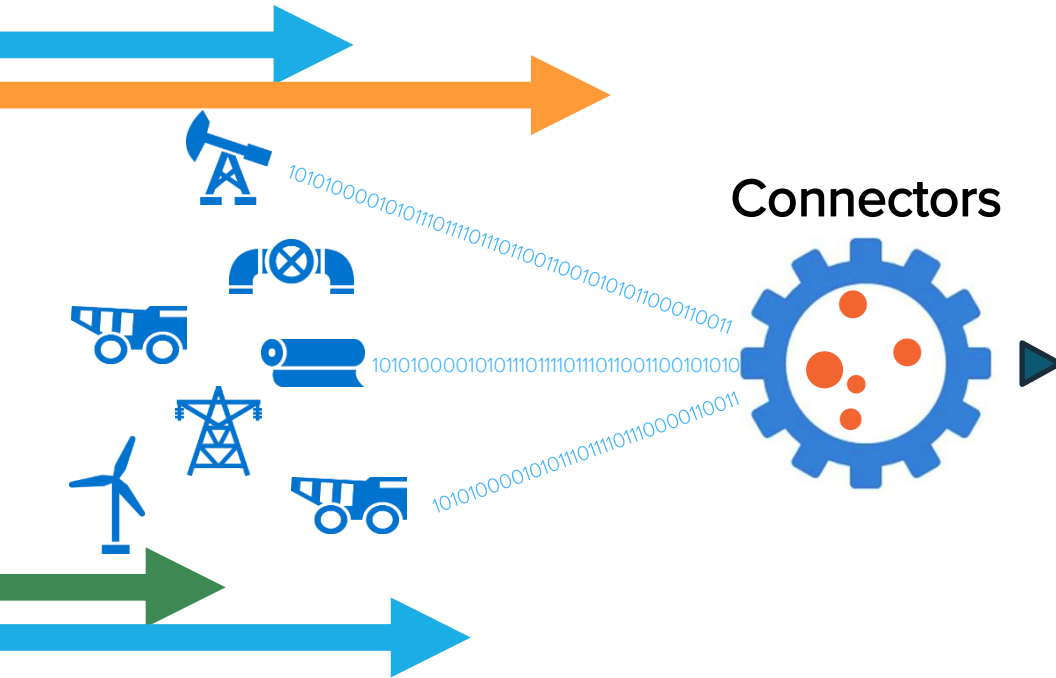


Security

PI Interfaces compared to PI Connectors

- **Interfaces** were designed to serve the **tag-centric** PI System of the past
- **Connectors** are designed to provide data acquisition for the **asset-centric** PI System of the present and future

PI Connectors



- Data source is the **system of record**
- Data collected in terms of **assets** as defined by the data source
- Assets **auto-created** in AF
- Tags **auto-created** in PI Data Server, linked to AF Elements
- Events collected and stored in **Event Frames**
- Easy to **configure**





Kongsberg benefits from PI Connector

- Fewer errors during commissioning
- Faster deployment
- Higher performance
- Better failover support
- Less maintenance. The system gets changed after the ship has left.



Stein-Roar Bjornstad
System Architect



PI Connector	Market	Status
IPMI	Datacenters	
CygNet	Upstream Oil and Gas	
EtherNet/IP	High-speed discrete	
Kongsberg	Transportation	
HART-IP	Many. Wireless sensors	Beta
Wonderware Historian	Many	Beta
IEC 60870-5-104	T&D Substations	Beta
RTscada	T&D	Beta
BACnet	Facilities	Beta
WITSML	Upstream, drilling	Beta
Siemens Simatic PCS 7	Many	Beta
OPC UA	Many	Planned
DNP3 (Embedded)	T&D	Development
IEC 61850	Substations, wind generation, etc.	Planned



DEMO



PI Connector for CygNet

C Y G N E T

 a Weatherford Company

- Oil and gas production
- SCADA
- Rich meta data available
- Version 1.0 released
- Version 1.1 in beta soon



Datasource

CygNet Scada

CygNet Explorer - Domain [9164]OSITEST.FAC

Contents of: Domain [9164]OSITEST.FAC

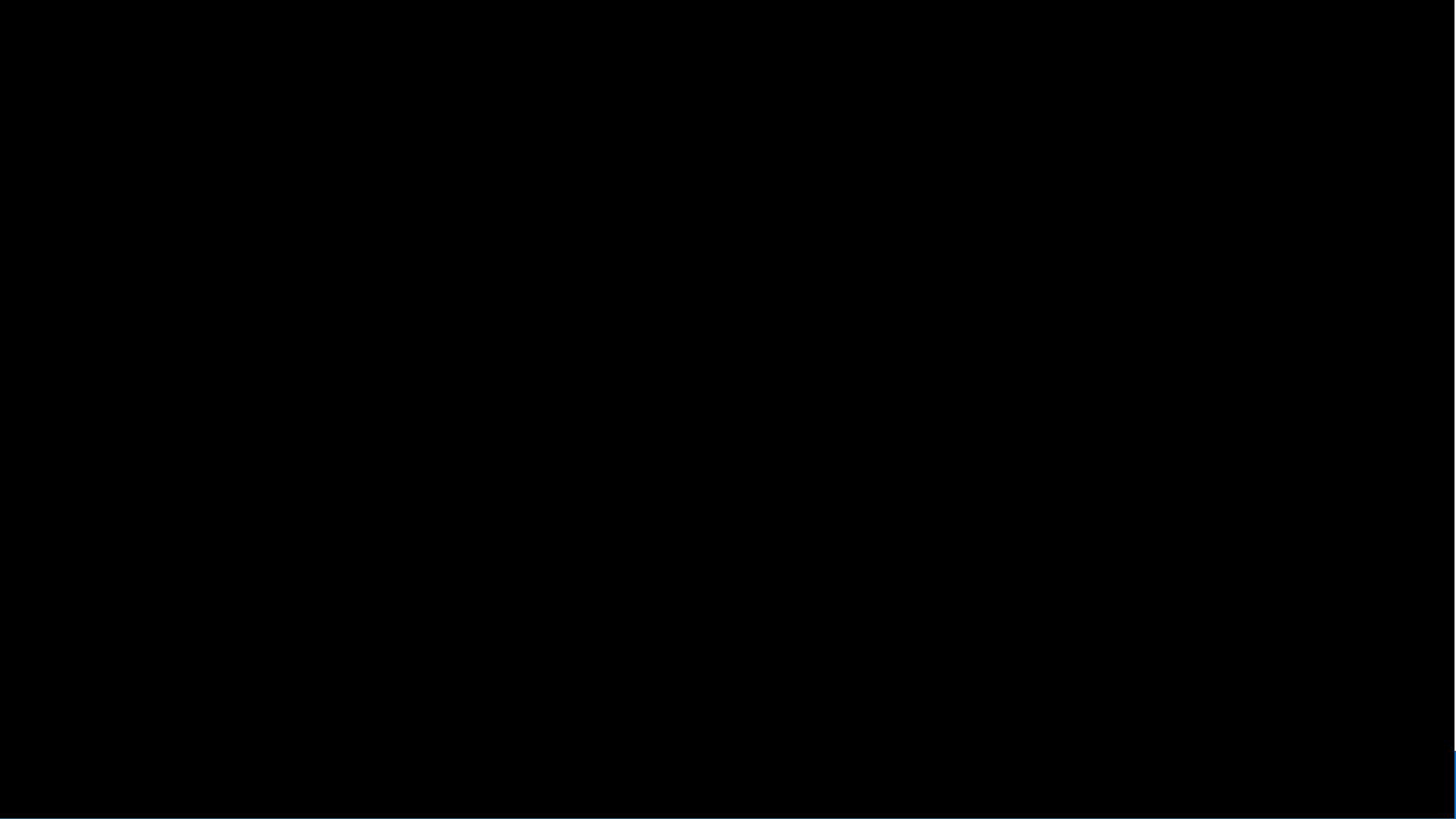
Facility Identifier	Service Site	Service Name	Facility Type	Facility Description
OSITEST_HSS	OSITEST	HSS		OSITEST_HSS
OSI_BATTERY_1	OSITEST	UIS	BATTERY	OSI Battery 1
OSI_COMMDEV_1	OSITEST	UIS	GENFAC	OSI Commdev 1
OSI_DOSFAC_1	OSITEST	UIS	GENFAC	OSI DOS Device 1
OSI_DMD_1	OSITEST	UIS	DMD	OSI Dmd 1
OSI_DRIVE_1	OSITEST	UIS	DRIVE	OSI Drive 1
OSI_POC_1	OSITEST	UIS	POC	OSI Pump-off Control 1
OSI_SWD_1	OSITEST	UIS	SWD	OSI SWD Well 1
OSI_WELL_1	OSITEST	UIS	WELL	OSI Well 1
OSI_WELL_2	OSITEST	UIS	WELL	OSI Well 2
OSI_WELL_3	OSITEST	UIS	WELL	OSI Well 3
OSI_WELL_4	OSITEST	UIS	WELL	OSI Well 4
OSI_WELL_5	OSITEST	UIS	WELL	OSI Well 5
~TEMPLATE	OSITEST	SVCMON	GENFAC	Template

User: OSISvc-interfacetest ARS: OSITEST.ARS on domain 9164

PI System

PI Copysight

Name	Description	Units	Units	Units	Units	Units
OSI_WELL_1_ProductionRate	ProductionRate	1	1	1	1	1
OSI_WELL_2_ProductionRate	ProductionRate	1	1	1	1	1
OSI_WELL_3_ProductionRate	ProductionRate	1	1	1	1	1
OSI_WELL_4_ProductionRate	ProductionRate	1	1	1	1	1
OSI_WELL_5_ProductionRate	ProductionRate	1	1	1	1	1





Embedded Connectors



Why Embed Connectors on Devices?

- Emergence of small sophisticated devices is pushing data collection capabilities into devices
- Multi-purpose embedded data collection node
- Higher quality data having collection logic as close as possible to the data source

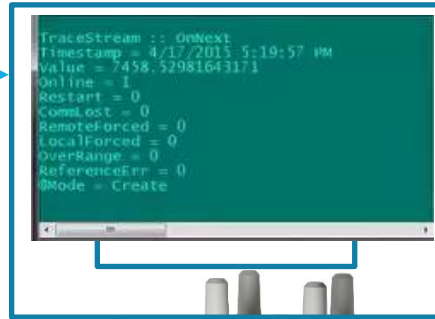
What Specifically Is OSIsoft Doing?

- Building platform agnostic Connectors that can be deployed on both Windows and Linux
- Initial target for Embedded Linux is the DNP3 Connector
- Working with Cisco, Intel, and Qualcomm

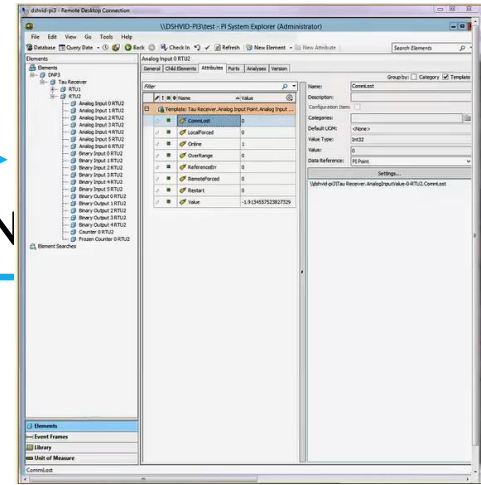
DNP3 Network

DNP3 Connector Running on Embedded Device

PI System



DNP3



System



Status Frame

State	Remote Blocked	Ground Blocked	Reclose Blocked	Current	Voltage
State: Warning	Remote Blocked: ■	Ground Blocked: ■	Reclose Blocked: ■	Phase A: 200.77	A to N: 7417.50
Counter: 17	Ground Blocked: ■	Phase B: 202.27	Phase C: 199.86	B to N: 7446.33	C to N: 7434.91
		Phase C: 199.86	Neutral: 1.19		

Load Current: 201

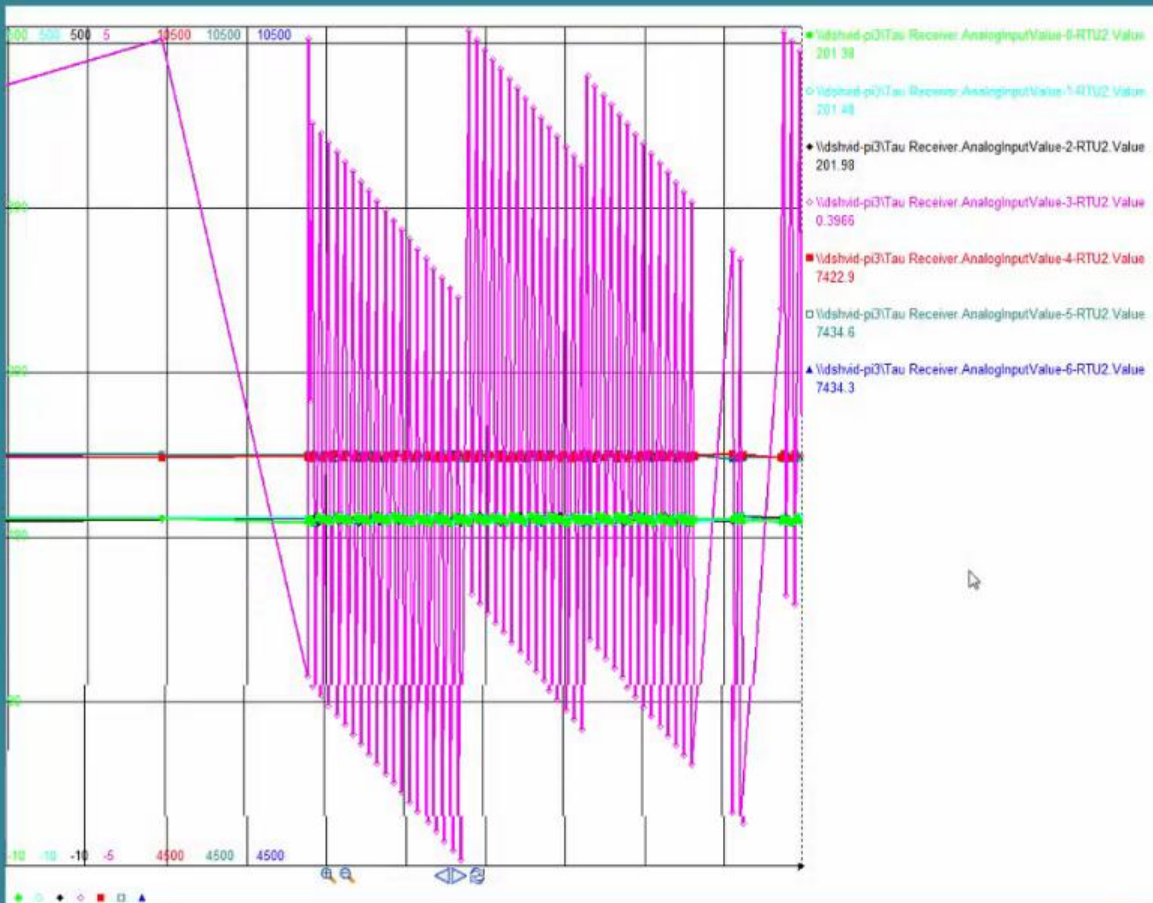
Input Voltage: 7434

```

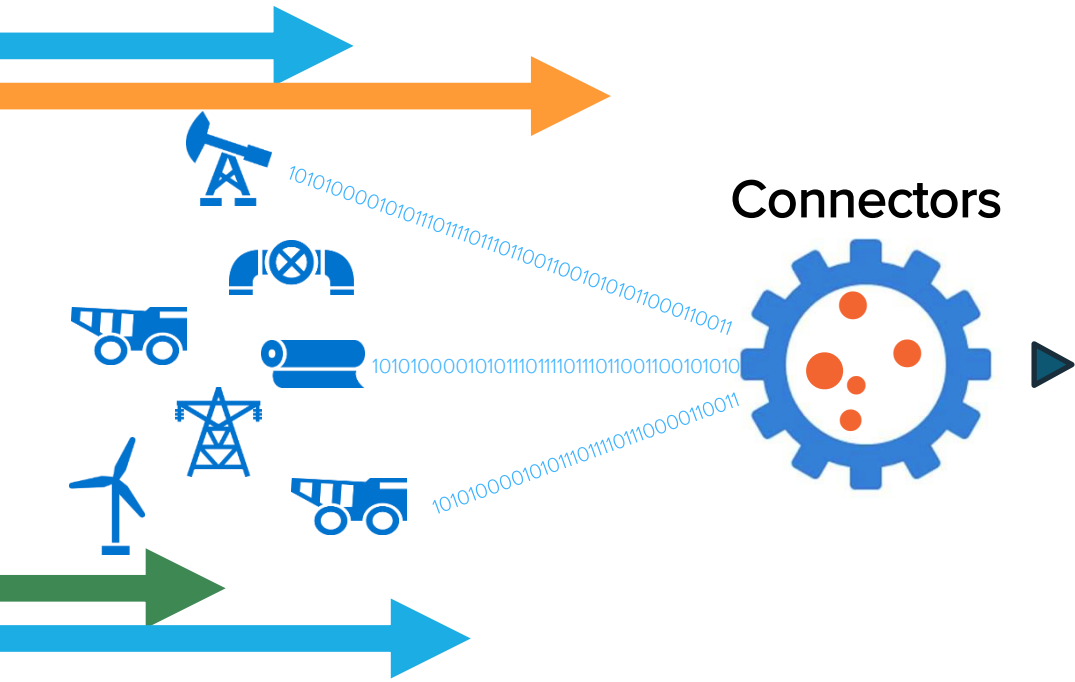
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CommLost = 0
RemoteForced = 0
LocalForced = 0
OverRange = 0
ReferenceErr = 0
Mode = Create

TraceStream :: OnNext
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Online = 1
Restart = 1
CommLost = 0
RemoteForced = 0
LocalForced = 0
OverRange = 0
ReferenceErr = 0
Mode = Create

TraceStream :: OnNext
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Online = 1
Restart = 0
CommLost = 0
RemoteForced = 0
LocalForced = 0
OverRange = 0
ReferenceErr = 0
Mode = Create
  
```



Demo Summary



Time



Elimates time and errors configuring tags

Configuration



Simple to configure

Build



Reduces effort to build an asset model

Embedded



Run on embedded devices / Linux

Come See Us at the PI Connector Pod

- Tell us what connectors you want
- Give us feedback on functionality
- Sign up to beta test
- Test drive the following connectors

CygNet

HART-IP

BACnet

Embedded DNP3

DC Systems RTscada

Wonderware Historian

IPMI

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Come see us at the Product Expo in Yosemite Ballroom!



THANK YOU

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