

# OSIsoft 2014 Releases: Customer Perspectives

Presented by **Ray Hall**

# Our Presenters



**Cyndi Bourne**

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# OSIsoft Engineering Focus

## Unleash Your Infrastructure

- Future Data
- PI Event Frames
- Asset Based Analytics

## The Power of Connection

- PI Connectors
- PI Integrator for SAP
- PI Integrator for Esri
- PI Cloud Connect

## Information on the Spot

- PI Coresight Mobile
- PI Manual Logger
- ProcessBook Displays in PI Coresight

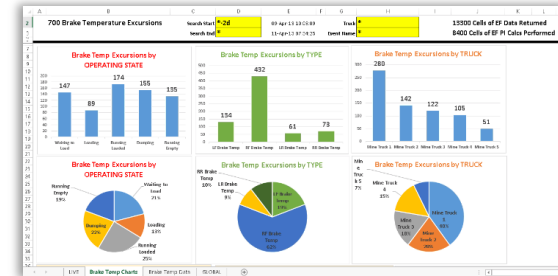
# OSIsoft 2014 Releases: Customer Perspectives

## Asset Based Analytics

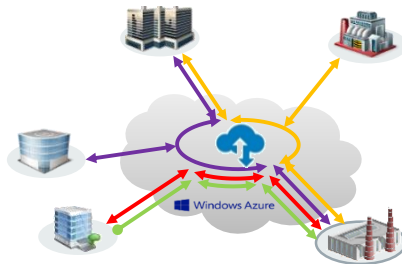
Name	Expression	Value	Output Attribute
TempDiff	(Avg('Exhaust Gas Temperature - #1 Probe', 'Exhaust Gas Temperature - #2 Probe', 'Exhaust Gas Temperature - #3 Probe', 'Exhaust Gas Temperature - #4 Probe') - 'Exhaust Gas Temperature - #1 Probe')/'Exhaust Gas Temperature - #1 Probe'*100		GT Exh Temp Diff Percent

[Add a new expression](#)

## PI Event Frames



## PI Cloud Connect



## ProcessBook Displays in PI Coresight



# Previewing Asset Based Analytics



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# About Shell



# Asset-based Analytics

\\Kaboom\NuGreen - PI System Explorer (Administrator)

File View Go Tools Help

Database Query Date Back Check In Refresh New Template Search Element Templates

Library

- NuGreen
  - Categories
    - Analysis Categories
    - Attribute Categories
    - Element Categories
    - Reference Type Categories
    - Table Categories
  - Templates
    - Element Templates
      - Boiler
      - Combined Cycle Power Plan
      - Compressor
      - Condenser
      - Cooling Fan
      - Enterprise
      - Gas Turbine
      - Heater
      - HRSG
      - Monitored Site
      - Plant
      - Process
      - Pump
      - Steam Turbine
      - Unit
    - Event Frame Templates
    - Model Templates
    - Transfer Templates

Elements

Event Frames

Library

Unit of Measure

Analyses

Gas Turbine Modified:3/13/2014 12:52:45 PM.

Gas Turbine

General Attribute Templates Ports Analysis Templates

Name: G

Description:

Categories:

Analysis Type:  Expression  Rollup  Event Frame Generation

Example Element: [NuGreen\Houston\Power and Steam Generation\Gas Turbine 1](#)

Name	Expression	Value	Output Attribute
Variable1	Type an expression		<a href="#">Click to map</a>

[Add a new expression](#)

Scheduling:  Event-Triggered  Periodic

Period: 00h 05m 00s [Configure](#)

Functions

Insert functions into the expression

All

- Abs
- Acos
- And
- Ascii
- Asin
- Atn

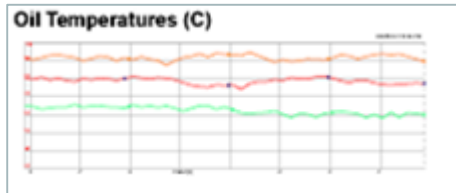
**Abs(number x)**  
Return the absolute value of an integer or real number.  
Example: Abs(1)

Attributes

# Asset Based Analytics

Create Actionable Information from Raw Data Streams

Your PI Data

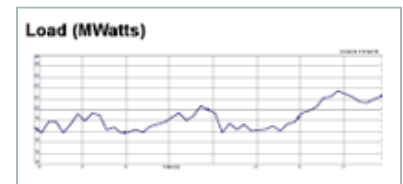
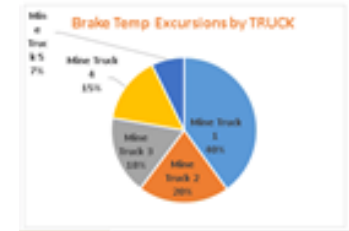


Easy Calculation Interface

A screenshot of an easy calculation interface. It features a table with columns: Name, Expression, Value, and Output Attribute. The first row shows "TempDiff" with an expression for calculating the average of four exhaust gas temperature probes and multiplying by 100. The output attribute is "GT Exh Temp Diff Percent". Below the table is a text area containing the full expression:  $(\text{Avg}(\text{'Exhaust Gas Temperature - \#1 Probe'}, \text{'Exhaust Gas Temperature - \#2 Probe'}, \text{'Exhaust Gas Temperature - \#3 Probe'}, \text{'Exhaust Gas Temperature - \#4 Probe'}) - \text{'Exhaust Gas Temperature - \#1 Probe'} * 100$ . There is also an "Evaluate" button and a link to "Add a new expression".

Name	Expression	Value	Output Attribute
TempDiff	$(\text{Avg}(\text{'Exhaust Gas Temperature - \#1 Probe'}, \text{'Exhaust Gas Temperature - \#2 Probe'}, \text{'Exhaust Gas Temperature - \#3 Probe'}, \text{'Exhaust Gas Temperature - \#4 Probe'}) - \text{'Exhaust Gas Temperature - \#1 Probe'} * 100$		GT Exh Temp Diff Percent

New Data Streams & Event Frames



- Auto-creates tags
- Equipment rollups
- Template based



# Previewing Event Frames



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# Alcoa at a Glance



- Founded in 1888
- 200+ locations
- 30 countries
- \$23.7 billion revenue in 2012
- 61,000 employees
- 10 times safer workplace than US average
- Award-winning sustainability leadership
- 120 years of patents, including the original aluminum process

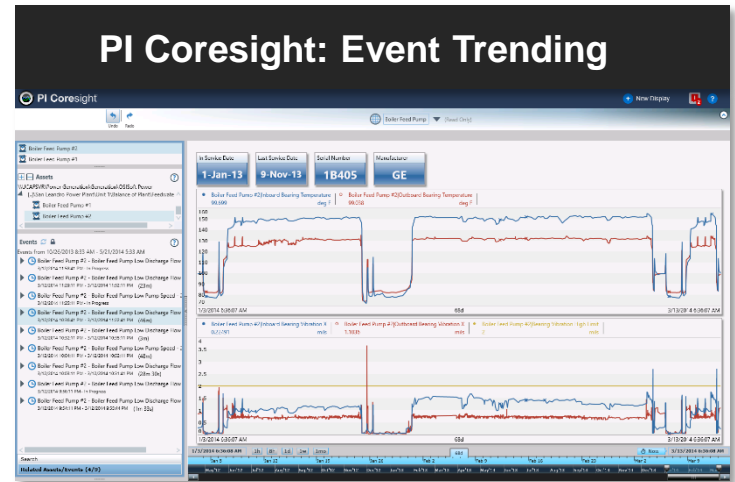




# PI Event Frames

Detect, Store and Analyze Actionable Information

## PI Coresight: Event Trending



## Asset-Based Analytics: Event Detection

**Name:** Boiler Feed Pump Cavitation Anomaly

**Description:**

**Categories:**

**Analysis Type:**  Expression  Rollup  Event Frame Generation

**Example Element:** Generation\OSIsoft Power\San Leandro Power Plant\Unit 1\Balance of Plant\Feedwater System\Boiler Feed Pump #1

**Event Frame Template:** Boiler Feed Pump Cavitation Anomaly

Name	Expression	Value
StartTrigger	if ('Suction Pressure' > 110 and 'Discharge Flow' > 1500 and 'Pump Speed' > 4950) then true else false	False
EndTrigger	Type an expression (optional)	

**Evaluated at:** 3/13/2014 6:29:26 AM

**StartTrigger true for:** 1 Minutes

Generate child root cause event frame before parent event frame starts

**Duration:** 5 Minutes

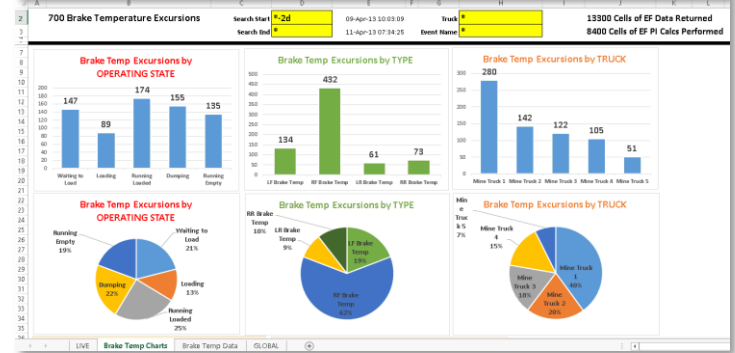
**Name:** Root Cause

**Category:**

**Functions:**

- Abs
- Acos
- And
- Ascii
- Asin
- Atn
- Atn2
- Avg
- BadVal
- Bad
- Born
- Bornm
- Ceiling
- Abs(number x)
- Return the absolute value of an int
- Example: Abs(1)

## PI DataLink: Events in Excel



# Previewing PI Cloud Connect



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# About DTE Energy

## Utility Businesses

- DTE Electric
- DTE Gas
- Citizens Gas Fuel

## Non-Utility Businesses

- DTE Coal Services
- DTE Biomass
- DTE Rail Services
- DTE Energy Services
- DTE Energy Trading
- DTE Energy Ventures
- DTE Gas Storage
- Midwest Energy Resources






**edf**  
renewable energy

Remote Operations



PI System

**DTE Energy®**



PI System



# PI Cloud Connect

Securely Share PI System Data Across Geographic & Organizational Boundaries

## Simply Publish and Subscribe

PI Cloud Connect

Create Publication

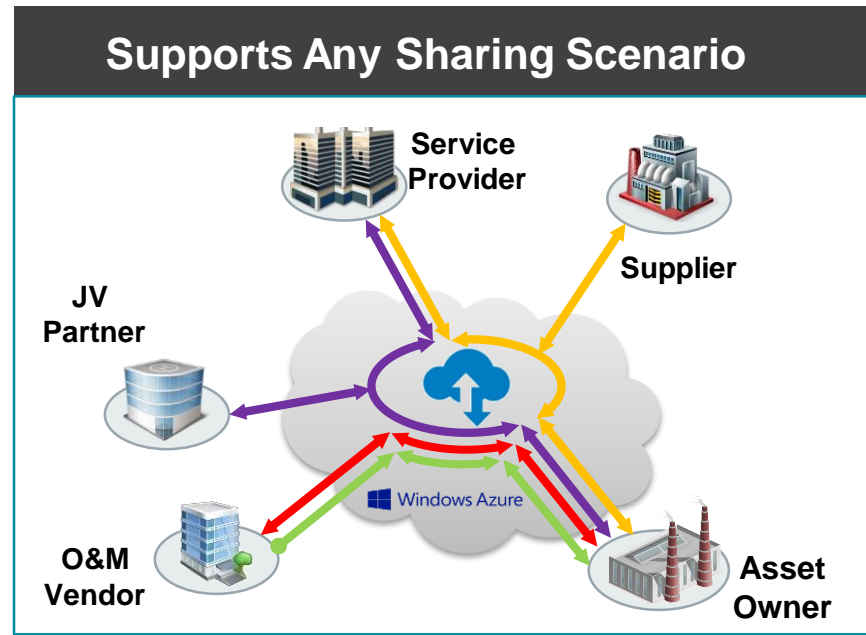
Progress: Data Source (complete), Publication Scope (complete), Publication Name (pending)

Browse your AF asset hierarchy to select the AF element that you want to publish

- ▶ Anacortes Refinery
- ▶ Baton Rouge Refinery
- ▶ E&P
- ▶ Gas
  - ▶ Compressor Stations
    - ▶ Blain River
    - ▶ Brunswick Station
    - ▶ Levis Station
    - ▶ Newport Station
    - ▶ Oxnard
    - ▶ Powder River Basin
    - ▶ Transwestern Station
    - ▶ Viking Station
  - ▶ Gas Plants
  - ▶ Key Performance Indicators

Data source: DFPIAF.Petrolux

Selected AF element to publish: \\DFPIAF\Petrolux\Gas\Compressor Stations\Powder River Basin





# Previewing PI Coresight 2014



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# City of Calgary Water Services at a Glance



- Calgary Population 1.2 million
- 2 Water Treatment Plants
- 3 Wastewater Treatment Plants
- 300 Field Services RTU's
- PI System Installed Pre-Y2K
- Collecting Data from DCS and SCADA (Currently over 150,000 Tags)
- Currently using:
  - PI Coresight
  - PI DataLink
  - PI ProcessBook



# Water Services PI Menu



## Water Treatment Facilities

### Plant Performance

Water Treatment Dashboard

Plant Treatment Reports

Supply and Demand

### Treatment Plant Facilities

Bears paw WTP

Glenmore WTP

### Transmission Facilities

Pump Stations

Reservoirs

### Maintenance Planning

Field Data Collection

Pump and Engine Run Time

## Field Services Facilities

Water Distribution

Sanitary Lift Stations

Storm Water Lift Stations

Retention Ponds

River Outfall Monitoring

## Water Quality Services

Water Quality Services Menu

### Compliance

River Diversion

Flood Events

Plant Water Quality

### Custom User Groups

Process Optimization

Electrical & Instrumentation

## Wastewater Treatment Facilities

### Plant Performance

Waste Treatment Dashboard

Plant Treatment Reports

Supply and Demand

### Treatment Plant Facilities

Bonnybrook WWTP

Fish Creek WWTP

Pine Creek WWTP

### Maintenance Planning

Field Data Collection

Pump and Engine Run Time





# Why?

PI ProcessBook displays  
wherever you go, on any device



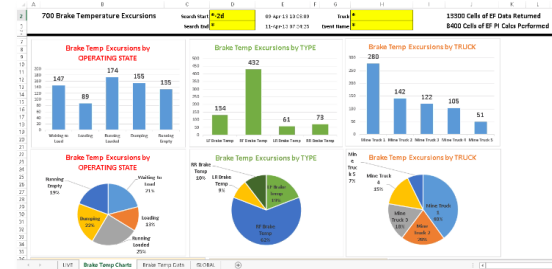
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## Asset Based Analytics

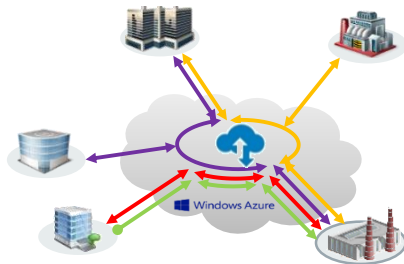
Name	Expression	Value	Output Attribute
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Add a new expression

## PI Event Frames



## PI Cloud Connect

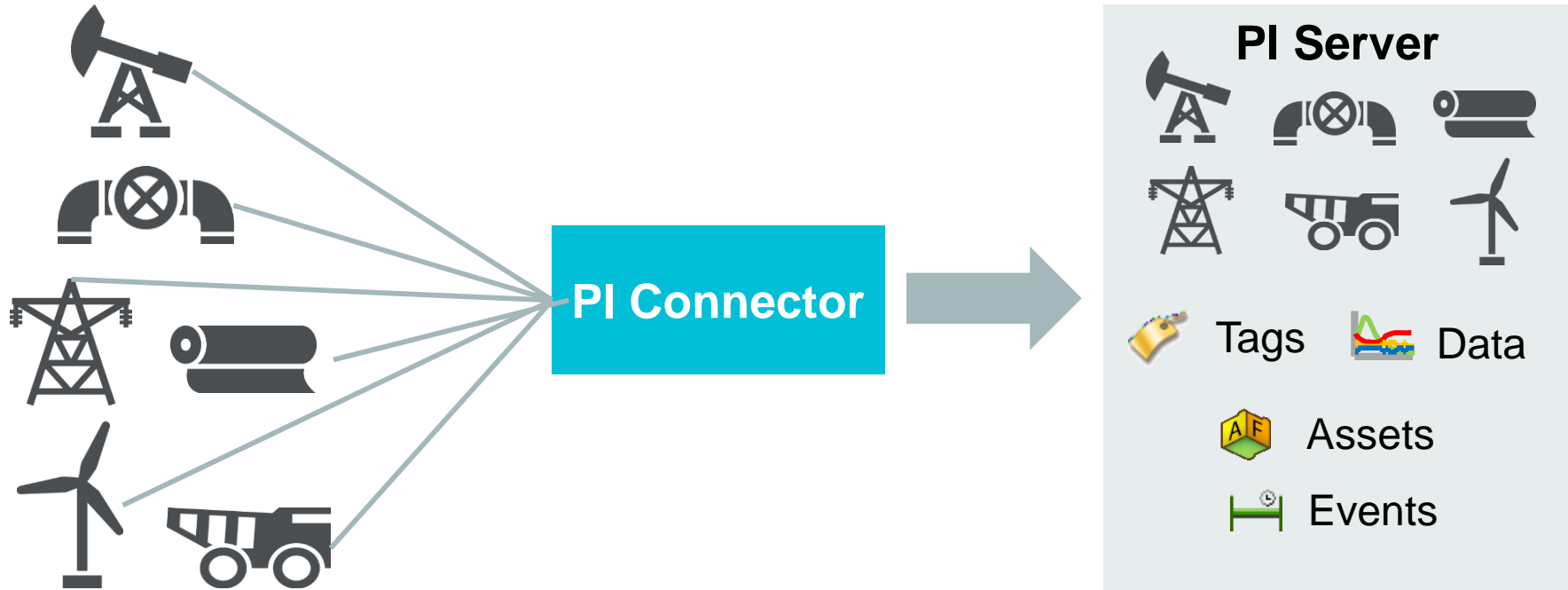


## ProcessBook Displays in PI Coresight



# PI Connectors

Automatically create and maintain tags, assets, data and events



# PI Manual Logger Mobile

Tour-based manual data collection using modern devices

- Collect data from field equipment with a mobile device
- Use barcode/RFID to identify tags and enter data
- Upload data wirelessly or by cradling the device





# PI Coresight Mobile

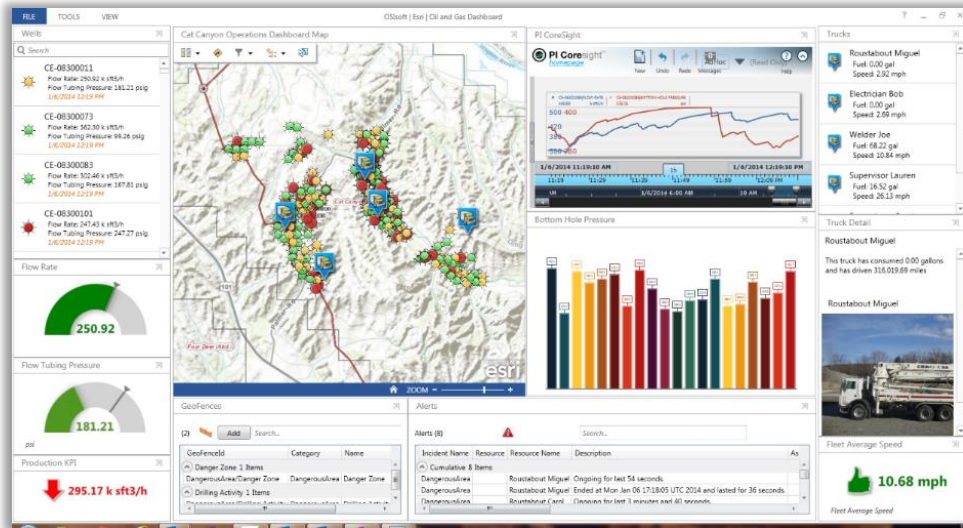
Quickly Find and Use PI Data using Small Form Factor Devices

- Designed for small screens and accessible on any device
- Leverage your existing investment with PI ProcessBook displays
- Fast and easy access to PI System data




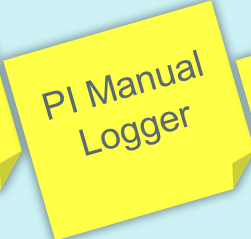


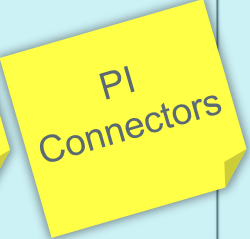


# PI Integrator for Esri ArcGIS

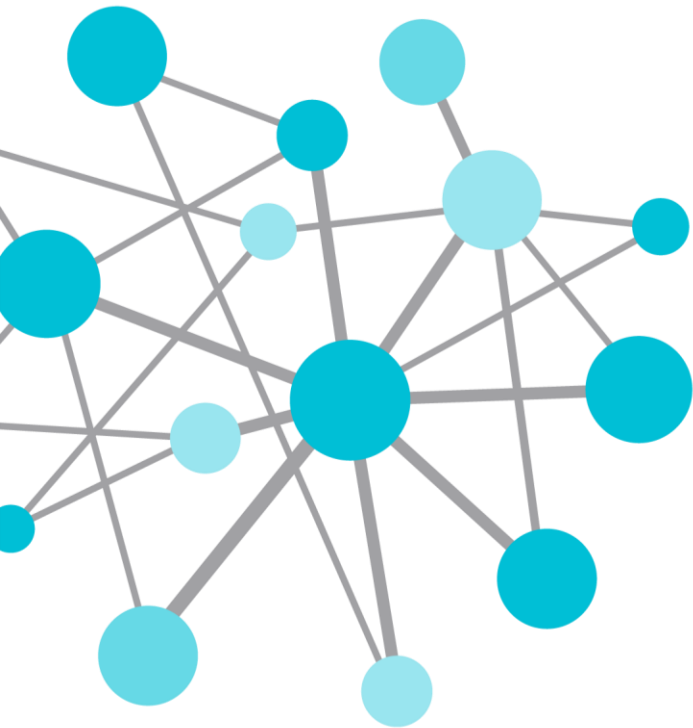
## Overlay Assets and Real-time Information onto Esri Maps



- Overview of your PI System assets using Esri maps
- Esri maps become live with PI System data
- Drill into asset data using PI Coresight
- Import Esri ArcGIS assets into PI AF

# 2014

January	February	March	April
			  
May	June	July	August
	 		 
September	October	November	December



THANK  
YOU

Brought to you by  **OSIsoft.**

# Ray Hall

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