



OSIsoft®

REGIONAL SEMINARS 2012

The **Power** of **Data**

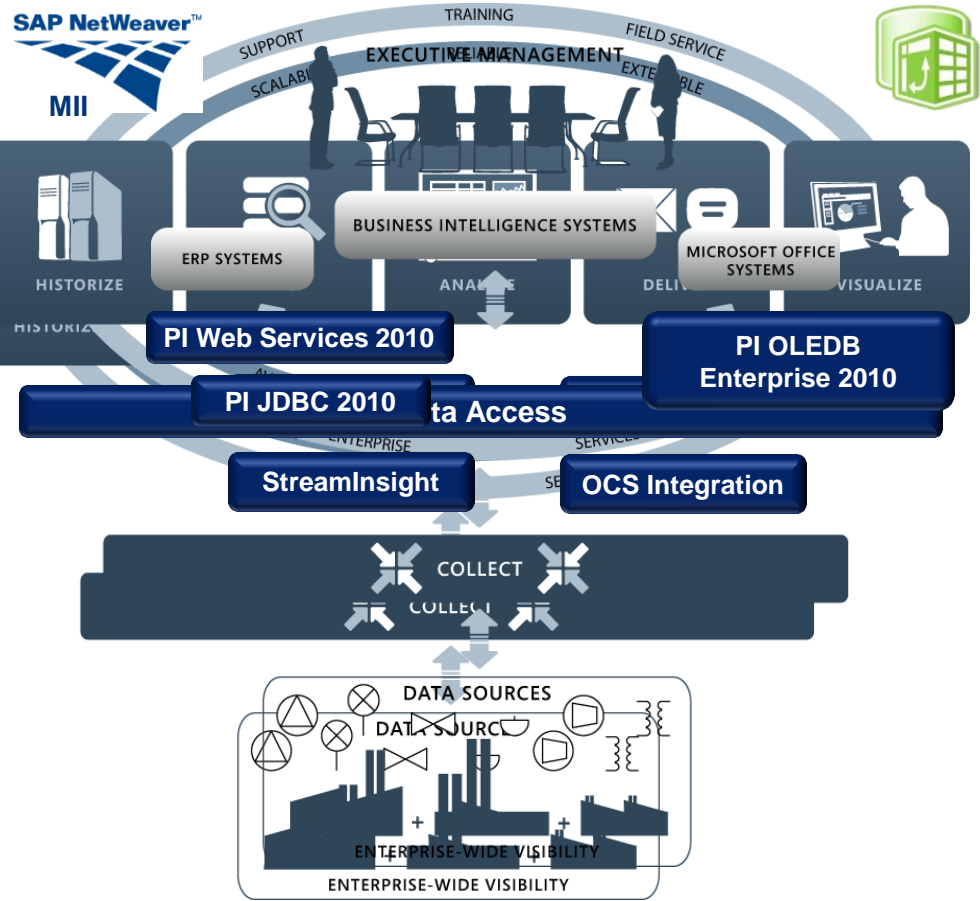


PI Asset Framework, PI Notifications

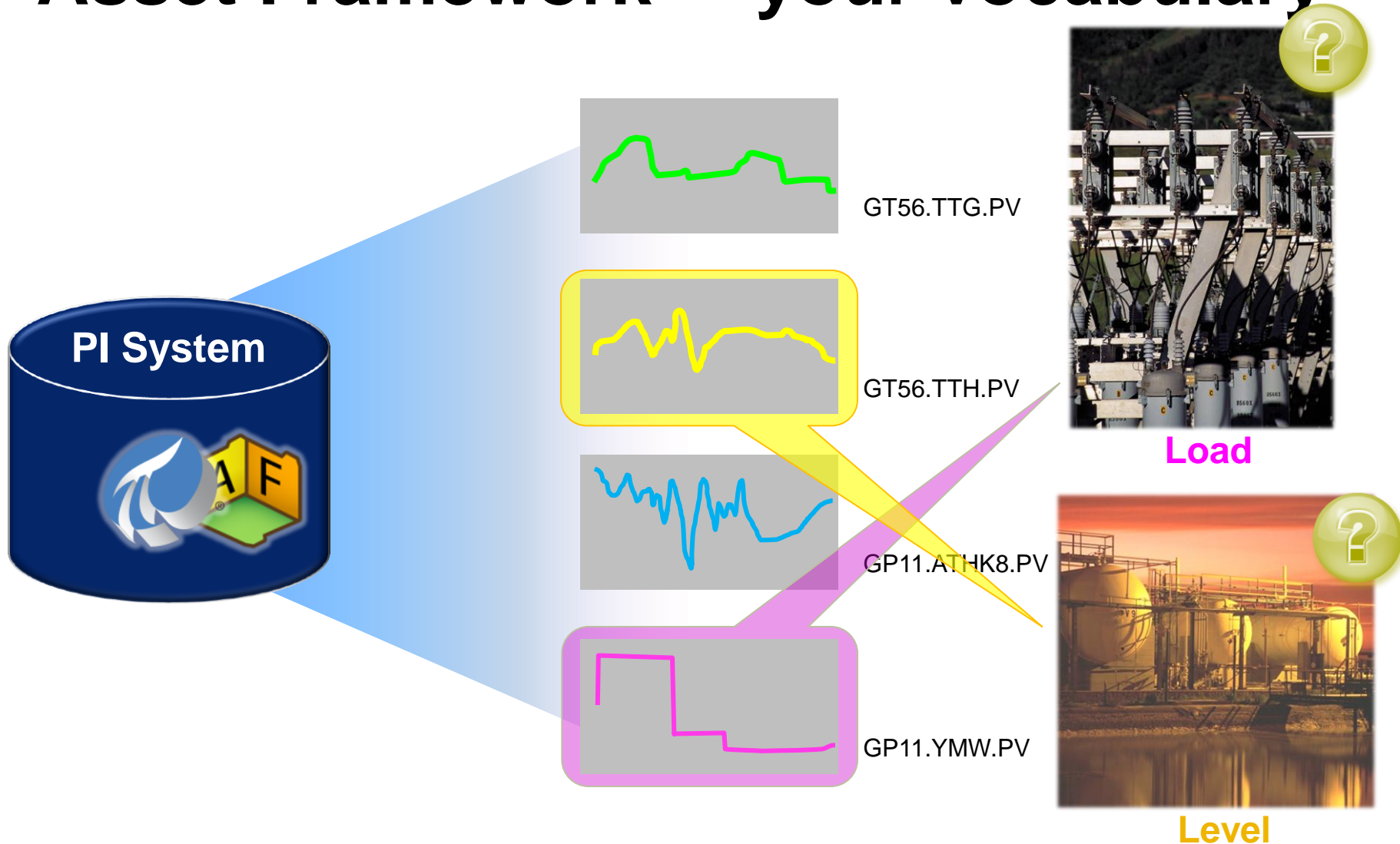
Presented by

Tadeas Marciniak, Field Service and Customer Support EMEA, OSIsoft

The PI System

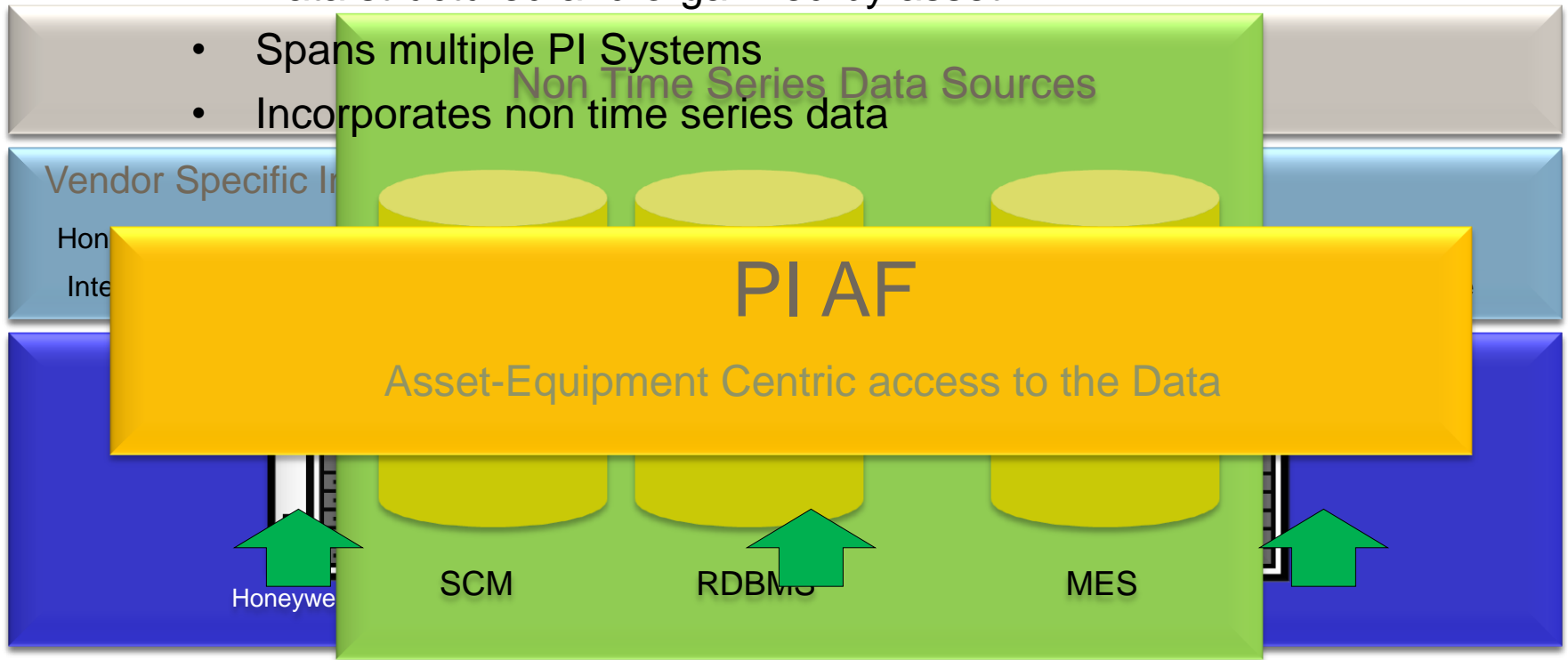


Asset Framework = your vocabulary



spans all your data

- Data structured and organized by asset
- Spans multiple PI Systems
- Incorporates non time series data



Asset Centric PI System

- **PI AF provides an asset centric view of your plant**
- **Establish relationships**
 - Build hierarchies, categories and connectivity models
 - Relate asset properties to your disparate data
- **Standardize, common view**
 - Templates for similar assets
- **Apply domain knowledge via PI Notifications and analyzes**
- **Access your data via PI Data Access products**

Build a Complete Picture of Your Asset

PI Tags

- Inlet pressure
- Inlet flow
- Ambient temperature



PI Tags

- Exhaust temperature
- Exhaust flow
- Measured MW output

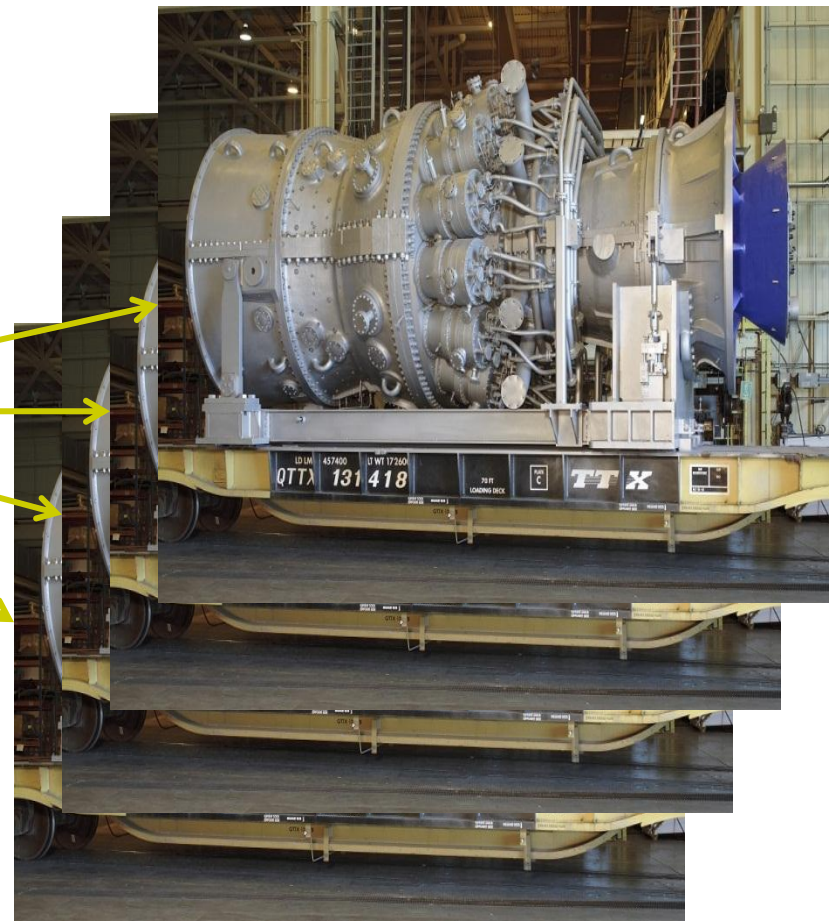
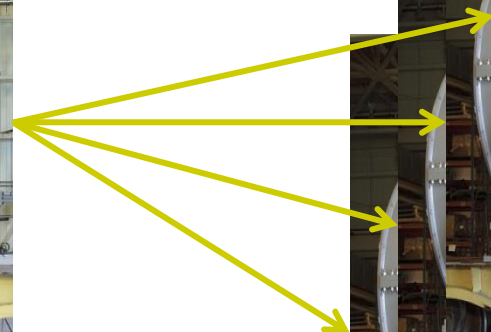
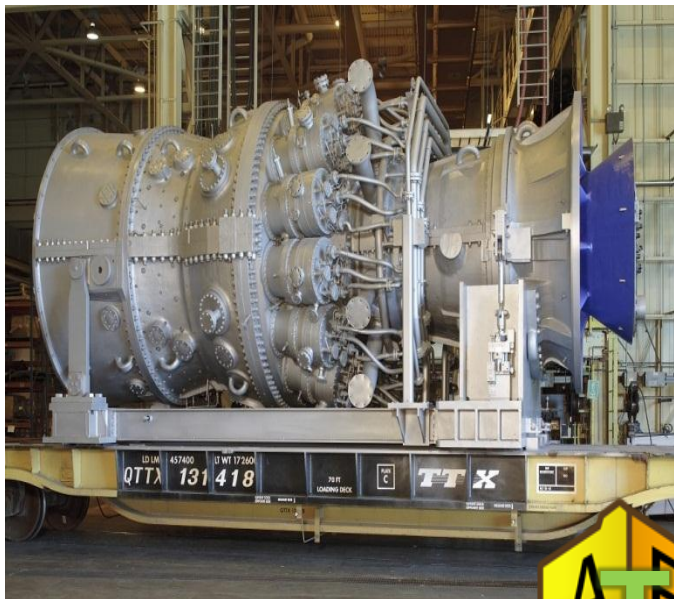
External Databases

- Performance curves
- Last service date
- Design documents
- Inspection best practice

Calculations

- Performance calculations
- KPI's

Common View for Similar Assets



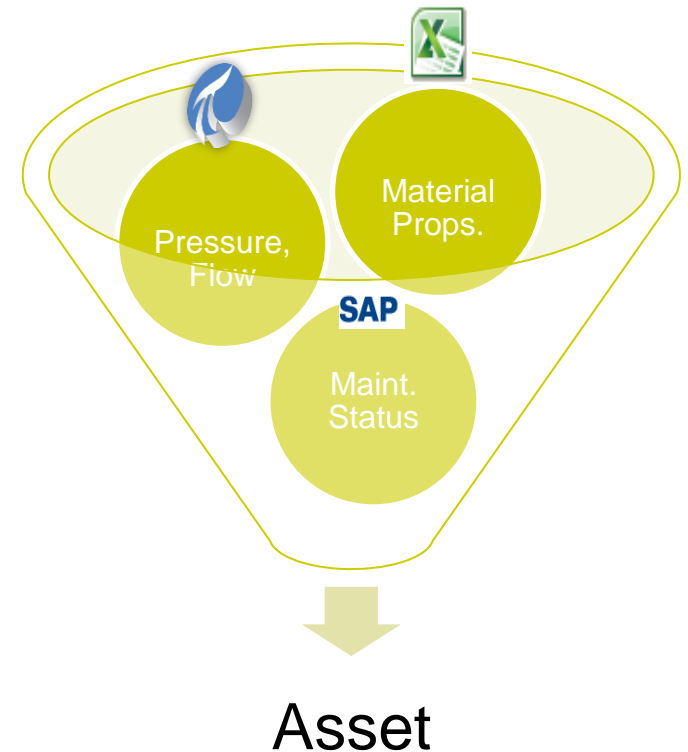
Add Value to your PI System

The screenshot displays the UC2011-SK - PI System Explorer interface. On the left, a tree view shows the hierarchy: Elements > Big Creek Power Plant > Gas Turbine 1. The main area shows a detailed view of the selected element, 'Compressor Inlet Temperature', with a value of 19.9780979156494 °C. Below the tree, there are sections for 'Event Frames', 'Library', 'Unit of Measure', 'MyPI', 'Notifications', and 'Contacts'. At the bottom left, a 'Prices' section lists 'Electricity Price', 'Gas Fuel Price', and 'Oil Fuel Price'. The right side of the interface shows a list of attributes for the selected element, including 'Compressor Discharge Pressure', 'Exhaust Gas Temperature', 'Fuel Oil Flow', 'Gas Fuel Flow', 'Gross MW Output', and 'Inlet Pressure Loss'.

Attribute	Value
Compressor Discharge Pressure	16.2847557067871 bar(g)
Compressor Discharge Temperature	433.991912841797 °C
Compressor Inlet Temperature	19.9780979156494 °C
Exhaust Gas Pressure	0.0206421613693237 bar(g)
Exhaust Gas Temperature - #1	594.774108886719 °C
Exhaust Gas Temperature - #2	597.018737792969 °C
Exhaust Gas Temperature - #3	595.317443847656 °C
Exhaust Gas Temperature - #4	598.902770996094 °C
Fuel Oil Flow	-0.0620765015482903 m3/h
Fuel Oil Pressure	15.818398475647 bar(g)
Fuel Oil Temperature	33.3455696105957 °C
Gas Fuel Flow	70317.8671875 m3/h
Gas Fuel Pressure	36.21142578125 bar(g)
Gas Fuel Temperature	68.7641372680664 °C
Gas Turbine Speed	3000.62158203125 rpm
Gross MW Output	261.549621582031 MW
In Service Date	2/25/2009 12:00:00 AM
Inlet Guide Vane Angle	95.78909 %
Inlet Pressure Loss	1.60181736946106 mbar(g)

Add Value to your PI System

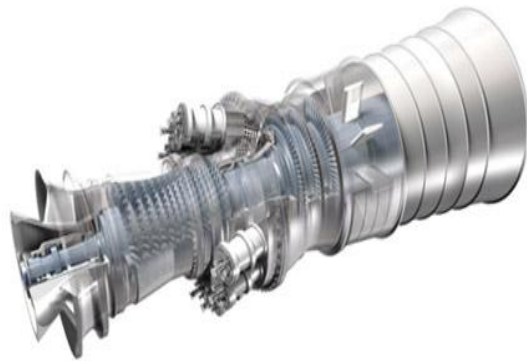
- **Tie asset properties to your data**
 - Static values, PI Tags from multiple PI Servers, static or linked Tables
 - Custom data references to other data sources



Add Value to your PI System

Event Frames Are Part of Asset Framework

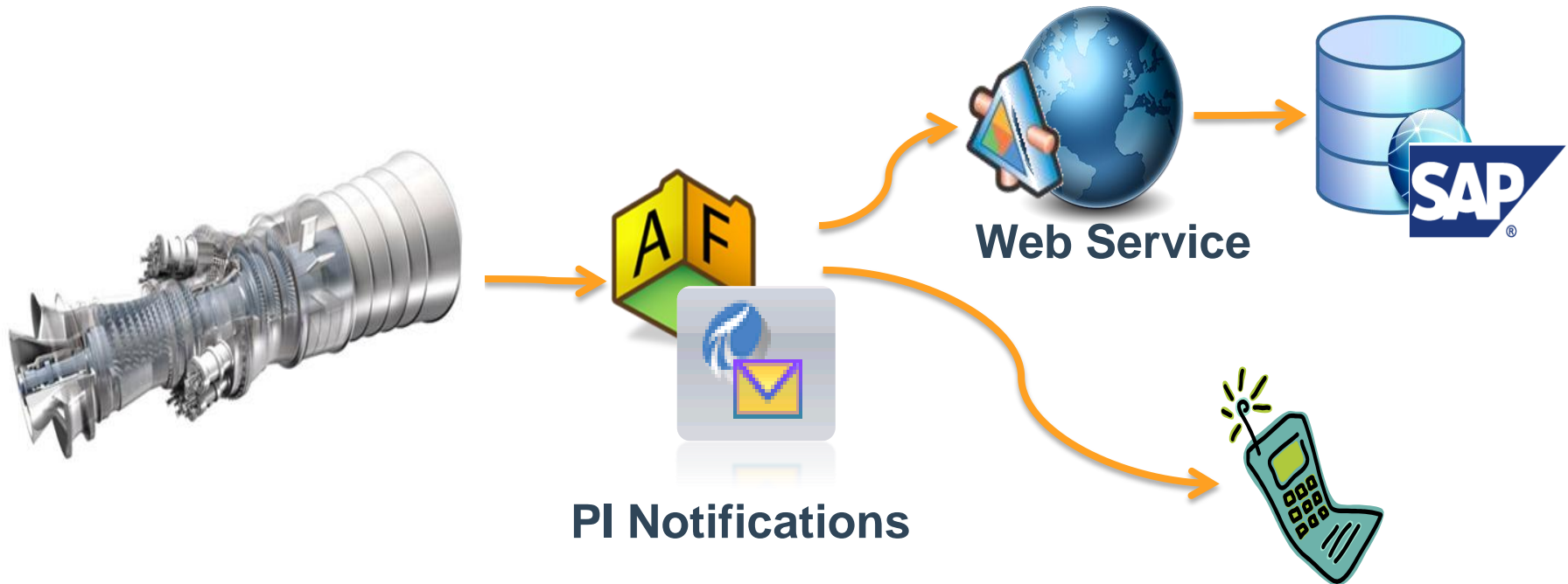
- GT #2 tripped again last night!!
- How many times has this happened in the last year?
- What were the operating conditions when it tripped?
- Let's find and gather all these events and analyze them.



- Downtime Events**
- Asset of interest
 - Start/End Times
 - Reason Codes
 - Asset Conditions

Add Value to your PI System

“One of GT exhaust thermocouples has been acting up... Let’s keep an eye on it and create a work order for maintenance if it fluctuates more than 5% in 5 seconds. Make sure Bob is notified of this also.”





PI Notifications

Alarms All Over the Place

Temperature is too high

Burning money!

Pressure is critical

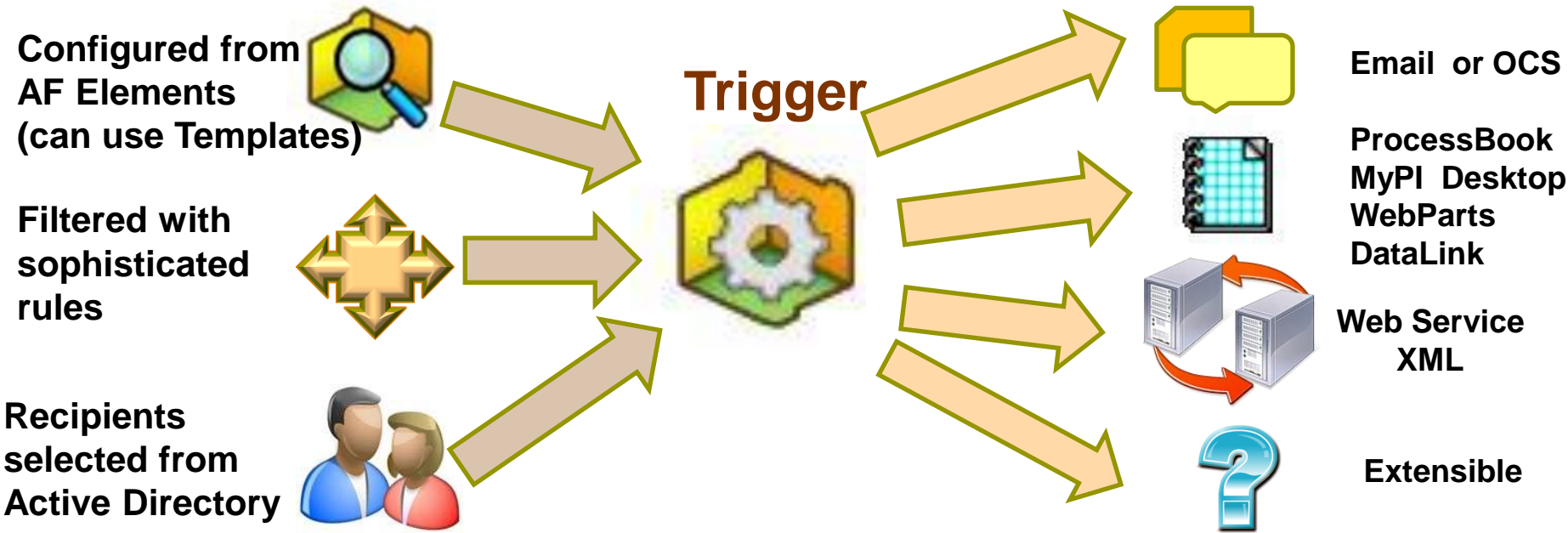
High operating cost



Overview of PI Notifications

- Filter and analyze the ever increasing data streams in real-time
- Communicate important events to applications, systems and targeted audiences
- Leverage these events in PI Client Tools for further analysis

PI Notifications



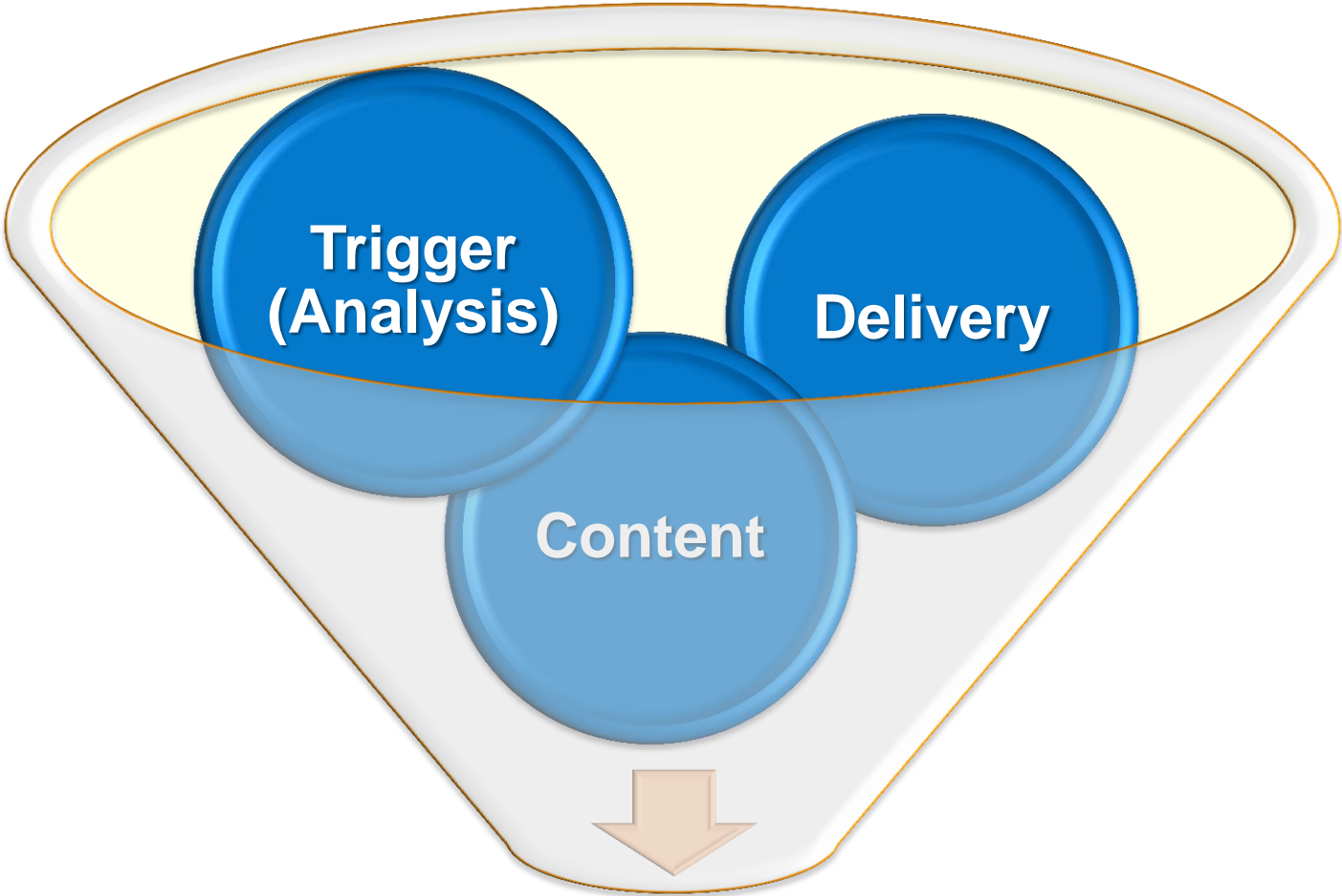
Features

- Templates
- Custom Content
- Acknowledgement and Escalation

Delivery Channels

- User can create their own
- OSIssoft vCampus – XML & Skype

Base Concept of a Notification



Notification

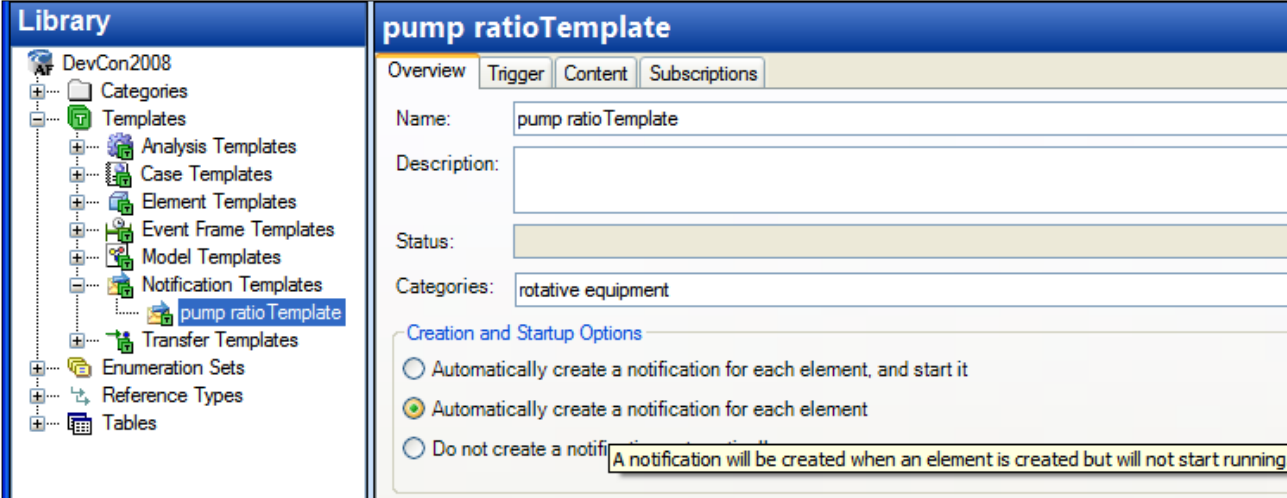
Delivery Methods

- Provide the content...
 - ...To the right applications and other systems...
 - ...To the right audience...
 - Individual person
 - Group
 - Escalation team
 - ...At the right time
- Delivery channels
 - Web service
 - E-mail
 - Office Communication Server (OCS)
 - Custom delivery channel



Within PI Notifications

- Notification Templates



Library

- DevCon2008
 - Categories
 - Templates
 - Analysis Templates
 - Case Templates
 - Element Templates
 - Event Frame Templates
 - Model Templates
 - Notification Templates
 - pump ratioTemplate**
 - Transfer Templates
 - Enumeration Sets
 - Reference Types
 - Tables

pump ratioTemplate

Overview | Trigger | Content | Subscriptions

Name: pump ratioTemplate

Description:

Status:

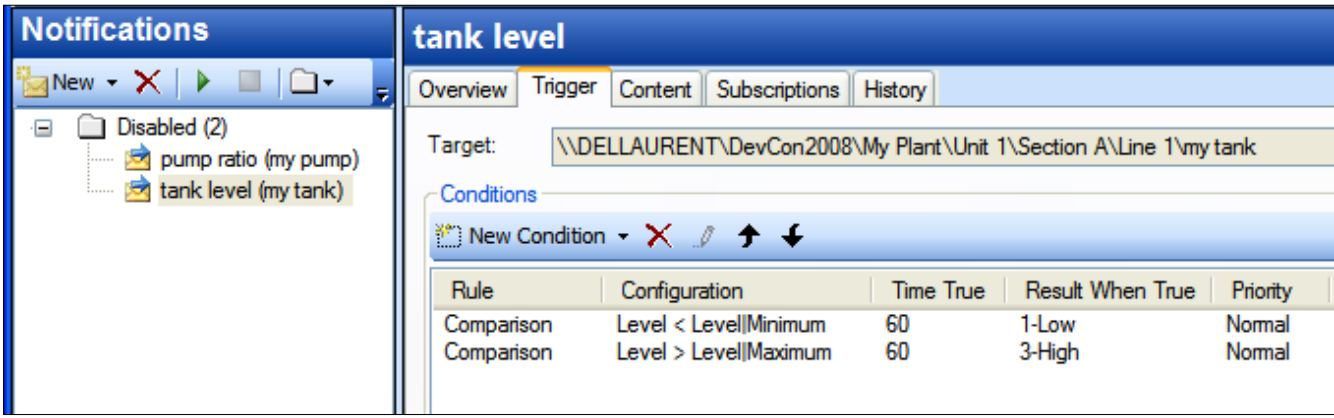
Categories: rotative equipment

Creation and Startup Options

- Automatically create a notification for each element, and start it
- Automatically create a notification for each element
- Do not create a notification

A notification will be created when an element is created but will not start running.

- Notifications Rules



Notifications

- New
- Disabled (2)
 - pump ratio (my pump)
 - tank level (my tank)**

tank level

Overview | Trigger | Content | Subscriptions | History

Target: \\DELLAURENT\DevCon2008\My Plant\Unit 1\Section A\Line 1\my tank

Conditions

Rule	Configuration	Time True	Result When True	Priority
Comparison	Level < Level Minimum	60	1-Low	Normal
Comparison	Level > Level Maximum	60	3-High	Normal

Office Communication Server 2007 R2

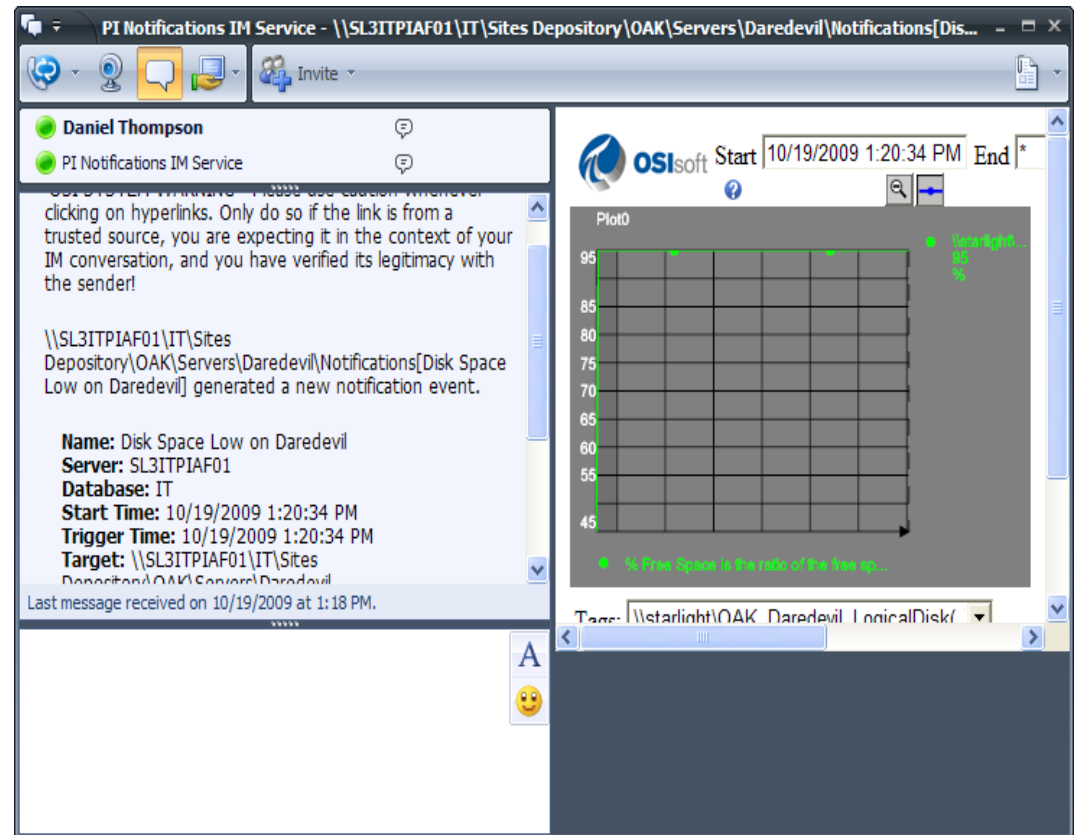
- Native Delivery Channel
- Supports presence and Instant Messaging (IM)

- Applications for phones

Windows Mobile

BlackBerry

iPhone



PI for Office 2010 - PI Notifications and OCS



Office Communicator interface showing a contact list with Alex Robinson and PI Notifications. The main window displays a conversation with PI Notifications regarding San Jose performance, including a link to SouthRidge Video North America and actions like Acknowledge and Acknowledge with Comment.

PI Notifications IM Service window showing a notification event for 'Disk Space Low on Daredevil'. The notification includes details such as Name, Server, Database, Start Time, Trigger Time, and Target. A graph titled 'Plot0' shows '% Free Space is the ratio of the free sp...'. A status bar at the bottom indicates 'San Jose temperature is Out of Range'.

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THANK YOU

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