Performance and Condition Monitoring via AF and Connected Services

Presented by **Joe Devine Process Plugins Inc.**

ProcessPlugins

Agenda

- Introduction of Process Plugins
- Partner EcoSphere Advantage
- Process Plugins Use of OSIsoft's Real-time Data Infrastructure
- Onsite Versus Connect Service Advantage
- How Connected Services Provide Value
- Questions?

Process Plugins Inc.

- Founded in 2006 by Joe Devine
- Performance and Condition Monitoring Entirely Within OSIsoft Foundation
- Trademarked in 2013
- Serving Power Generation, Gas Transmission, Water and Waste Water, Pulp and Paper
- Workforce spread across US with Engineers and OSIsoft Technology Experts

Benefits of OSIsoft's Partner EcoSphere

- Partner of OSIsoft since 2004
- The Partner EcoSphere and vCampus membership allows access to OSIsoft's real-time data infrastructure technologies
- Access to OSIsoft's technologies allows us to build Process Plugins entirely within the infrastructure allowing for rapid development with the latest technology
- We have concentrated on development within the OSIsoft PI Asset Framework (PI AF) since 2006

Business Problems Addressed

- Building PI AF structures efficiently
- Monitoring of assets for optimum performance and asset lifecycle management

Advantages of PI AF and Connected Services

- Rapid deployment of pre-built PI AF templates to existing onsite PI System infrastructure

- Provide immediate value with a full set of engineering calculations for turbines, compressors, pumps, heaters, boilers, cooling towers, condensers, paper machines, evaporators, solar arrays, wind turbines with more asset types being added all of the time – all in PI AF

Advantages of PI AF and Connected Services

- Ongoing maintenance and updates with changing technologies to insure reliable operation to Cover Your Assets (CYA)

- All your existing visualization tools are used

- Remote monitoring of assets made possible with OSIsoft's Connected Services
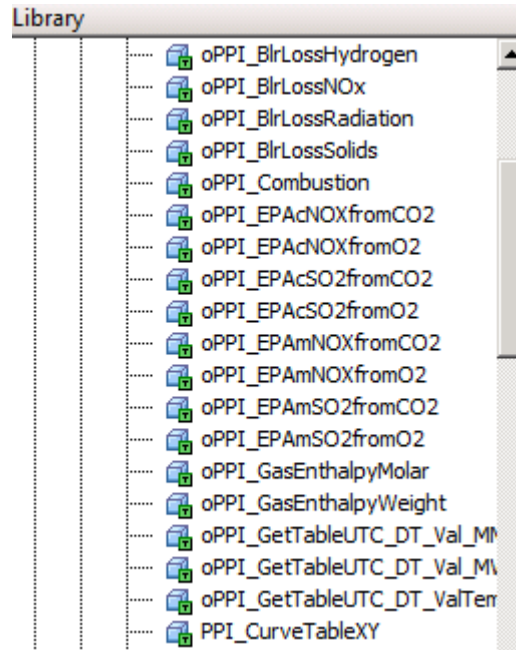
How Process Plugins Works

- Engineering calculations for a wide array of assets developed and ready to Plugin to the PI Asset Framework.
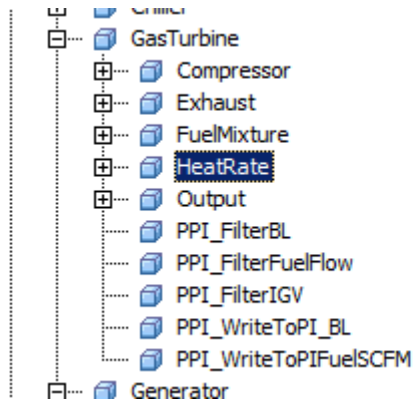
How Process Plugins Works

- For onsite installation a single Windows Service and PI AF Templates are applied

Library

- oPPI_BlrLossHydrogen
- oPPI_BlrLossNOx
- oPPI_BlrLossRadiation
- oPPI_BlrLossSolids
- oPPI_Combustion
- oPPI_EPAcNOXfromCO2
- oPPI_EPAcNOXfromO2
- oPPI_EPAcSO2fromCO2
- oPPI_EPAcSO2fromO2
- oPPI_EPAmNOXfromCO2
- oPPI_EPAmNOXfromO2
- oPPI_EPAmSO2fromCO2
- oPPI_EPAmSO2fromO2
- oPPI_GasEnthalpyMolar
- oPPI_GasEnthalpyWeight
- oPPI_GetTableUTC_DT_Val_MM
- oPPI_GetTableUTC_DT_Val_MV
- oPPI_GetTableUTC_DT_ValTem
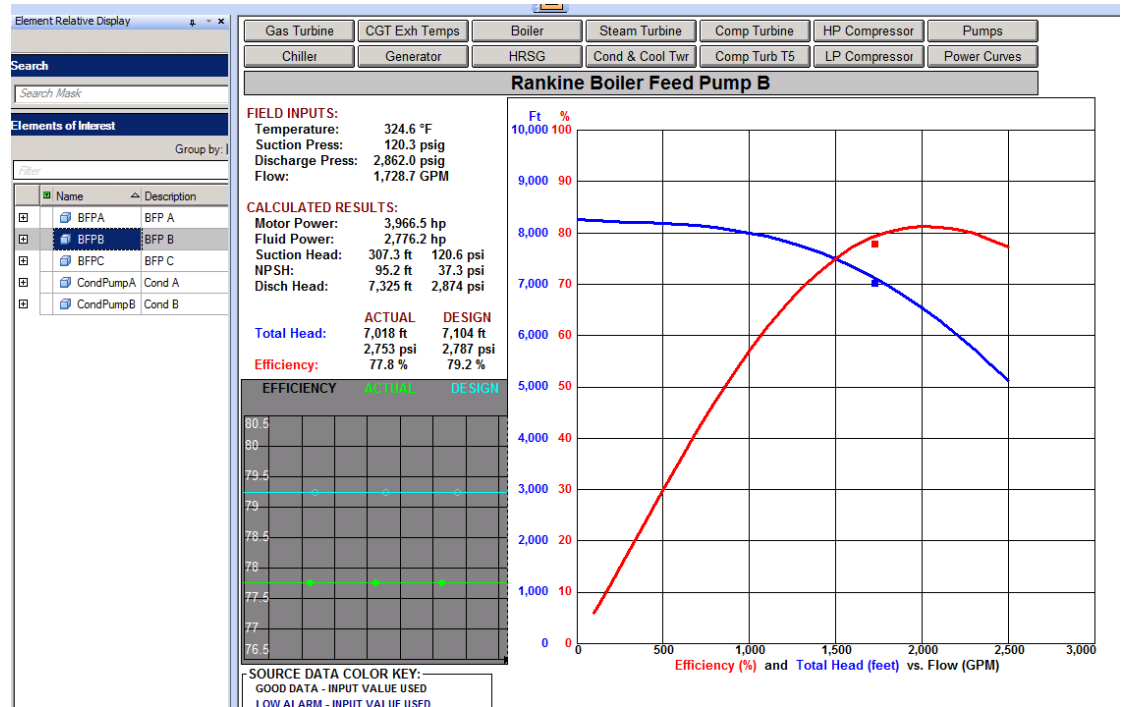- PPI_CurveTableXY

How Process Plugins Works

- Since the system is in PI AF all Engineering Calculations are in Plain View
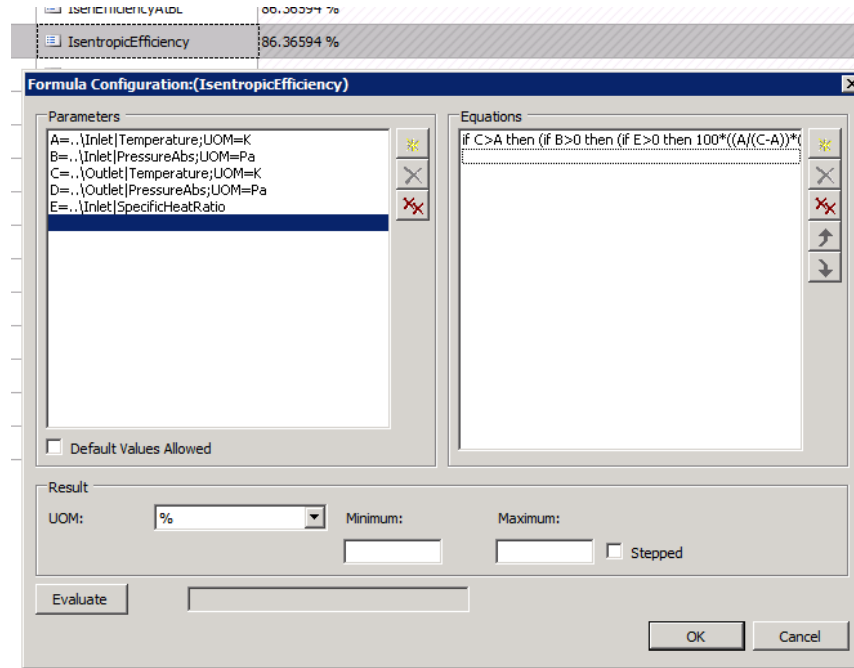
How Process Plugins Works

All visualization leverages OSIsoft Visualization suite PI ProcessBook,
PI WebParts & PI Coresight

How Process Plugins Works

- Fully scalable from a single asset to an entire enterprise all based on OSIsoft PI Asset Framework.

The Challenge With Onsite vs Connected Services a true Business Model Shift
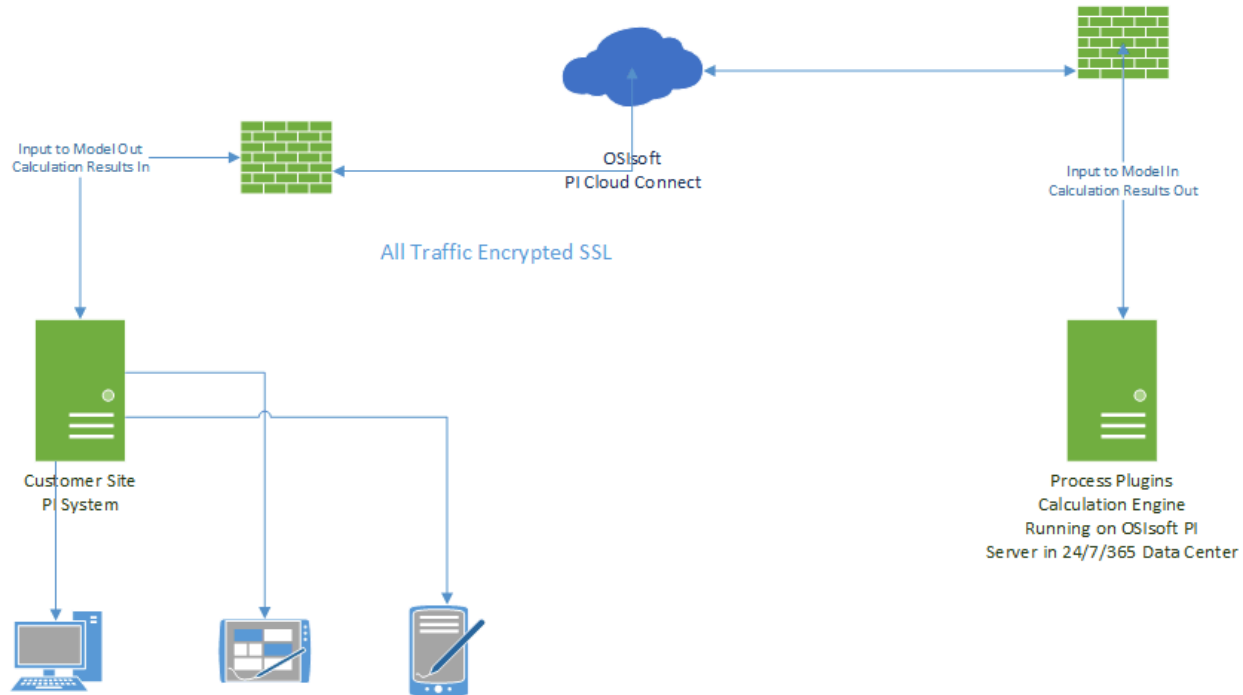
- Onsite Installation
  - Cost of full system can create a need for a budget cycle to approve and get in place. No monitoring except possible DIY during the time period. No CYA (Cover Your Assets).
  - Requires IT and engineering support and resources.
  - On going maintenance to latest versions requires remote access or onsite support in most cases.

- Connected Services
  - Low monthly subscription makes implementation fast without need for budget cycle
  - Monitoring can occur within days instead of months (CYA) easily start with a single asset and grow as needed
  - Ongoing maintenance not an issue since no software installed. Technology updates handled at the 24/7/365 data center that is running the OSIsoft real-time data infrastructure and Process Plugins.

How Connected Services Works

- Entire system works as Publish and Subscribe
- Process Plugins provides list of input PI Tags in the form of PI AF Structure
- End User Publishes Full Set of Input Tags and Process Plugins Subscribes
- Model is Configured from Input and Process Plugins then Publishes for End User to Subscribe
- End User simply selects Parent PI AF Element and Entire Model is built on End User PI AF Server
- Graphics and reports are then sent for use by end user

How Connected Services Works

Process Plugins Connected Services

Input to Model Out
Calculation Results In

OSIsoft
PI Cloud Connect

Input to Model In
Calculation Results Out

All Traffic Encrypted SSL

Customer Site
PI System

Process Plugins
Calculation Engine
Running on OSIsoft PI
Server in 24/7/365 Data Center

End User Published Plant Site Data to Process Plugins

Calculation Source Running Process Plugins

- Publish

End User /Subscriber Side

- Full PI AF Configuration
- All results written to PI Server
- PI Notifications available

OSIsoft. REGIONAL SEMINARS
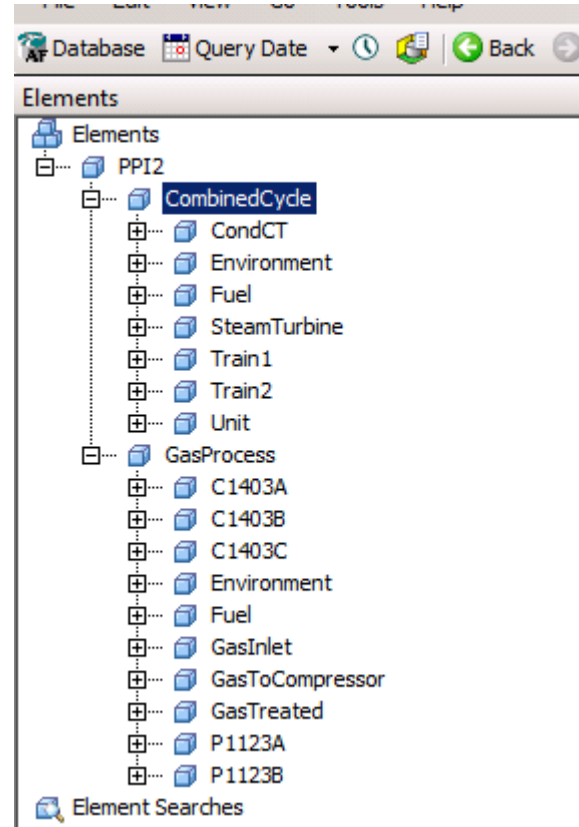
Key Features

- Process Plugins provides PI Notifications for standard parameters (CYA)

- The Subscriber has the same structure in real time so PI Notifications also available on Subscriber side

- All calculation results written to the PI Server on the Subscriber side

- Full PI AF Structure and all calculations in plain view in PI AF

- Complete set of Graphics available that are compatible with PI Process Book, PI Web Parts and PI Coresight

- Can be up and running in Days to CYA.

Benefits

- PI Cloud Connect and Connected Services are Ready Now

- Covering Your Assets (CYA) with rapid deployment starting with a single asset and grow as needed

- Meaningful PI AF structure for your site within days

- Graphics, Reports, PI Notifications and Condition Monitoring without Onsite Software Installation
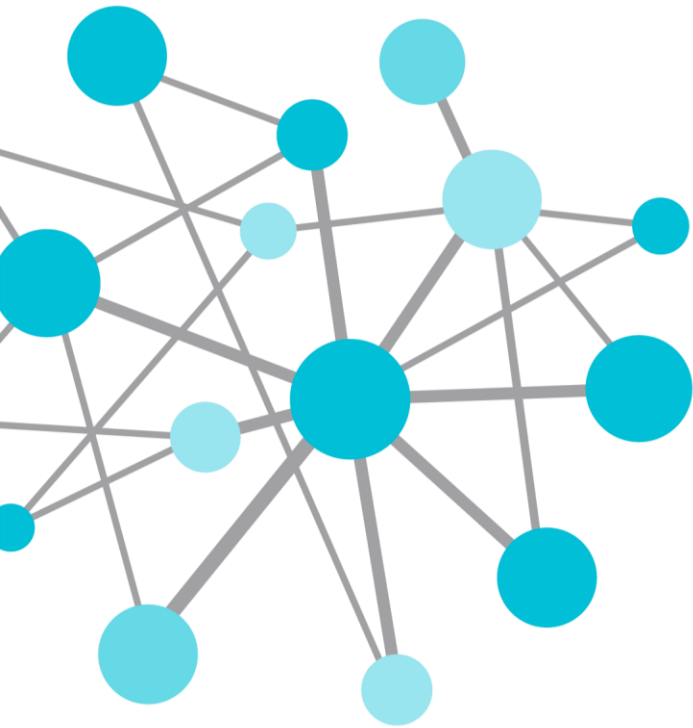
Summary

"Using OSIsoft's PI Asset Framework and Connected Services, we have built a new business model of delivering services that was not possible before. We are able to scale our expertise across customers and provide maximum value to them at minimum cost." Joe Devine, President at Process Plugins.

Customer Business Challenge	Solution	Customer Results / Benefits
• Need to replace outdated systems • Want to leverage OSIsoft for all performance and condition monitoring needs • Need rapid deployment within existing systems	• Process Plugins solution to monitor assets within days • Low monthly cost to monitor • Able to add assets as needed	• Monitoring condition and performance of assets rapidly • Able to address critical assets first and build as needed • Low cost of ownership • Minimal IT challenges

Joe Devine

- JDevine@ProcessPlugins.com
- President
- Process Plugins Inc.
- http://ProcessPlugins.com

THANK
YOU

ProcessPlugins

Brought to you by OSIsoft.