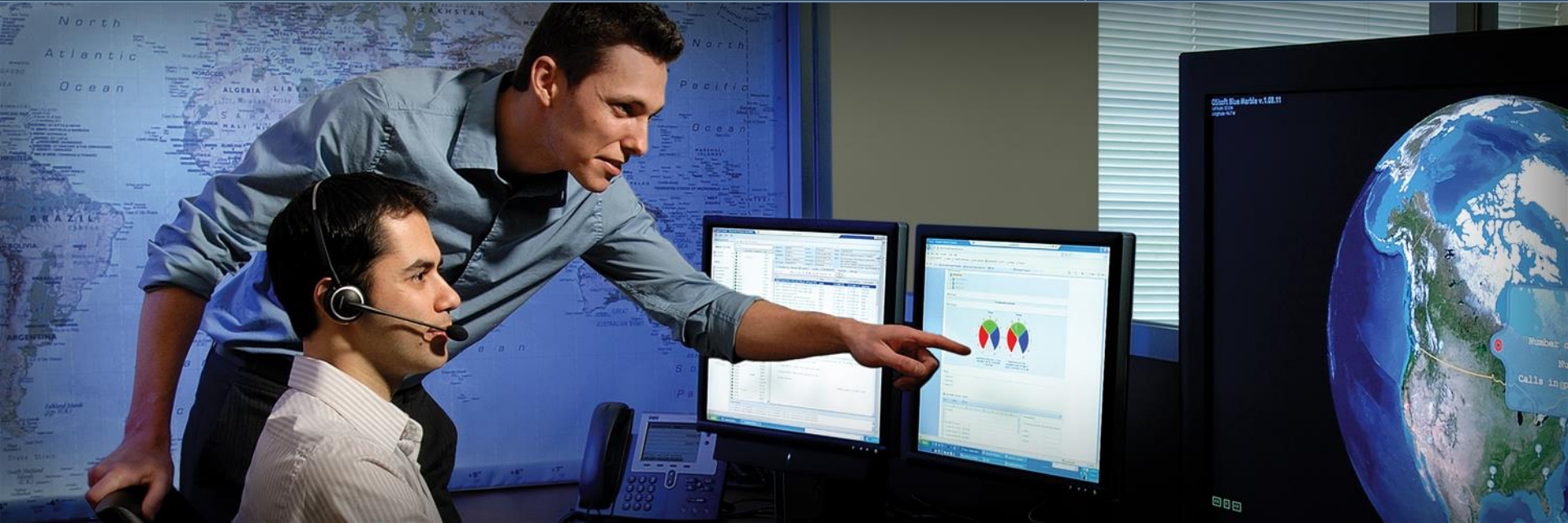




Regional Seminar Series New York City



PI System Roadmap

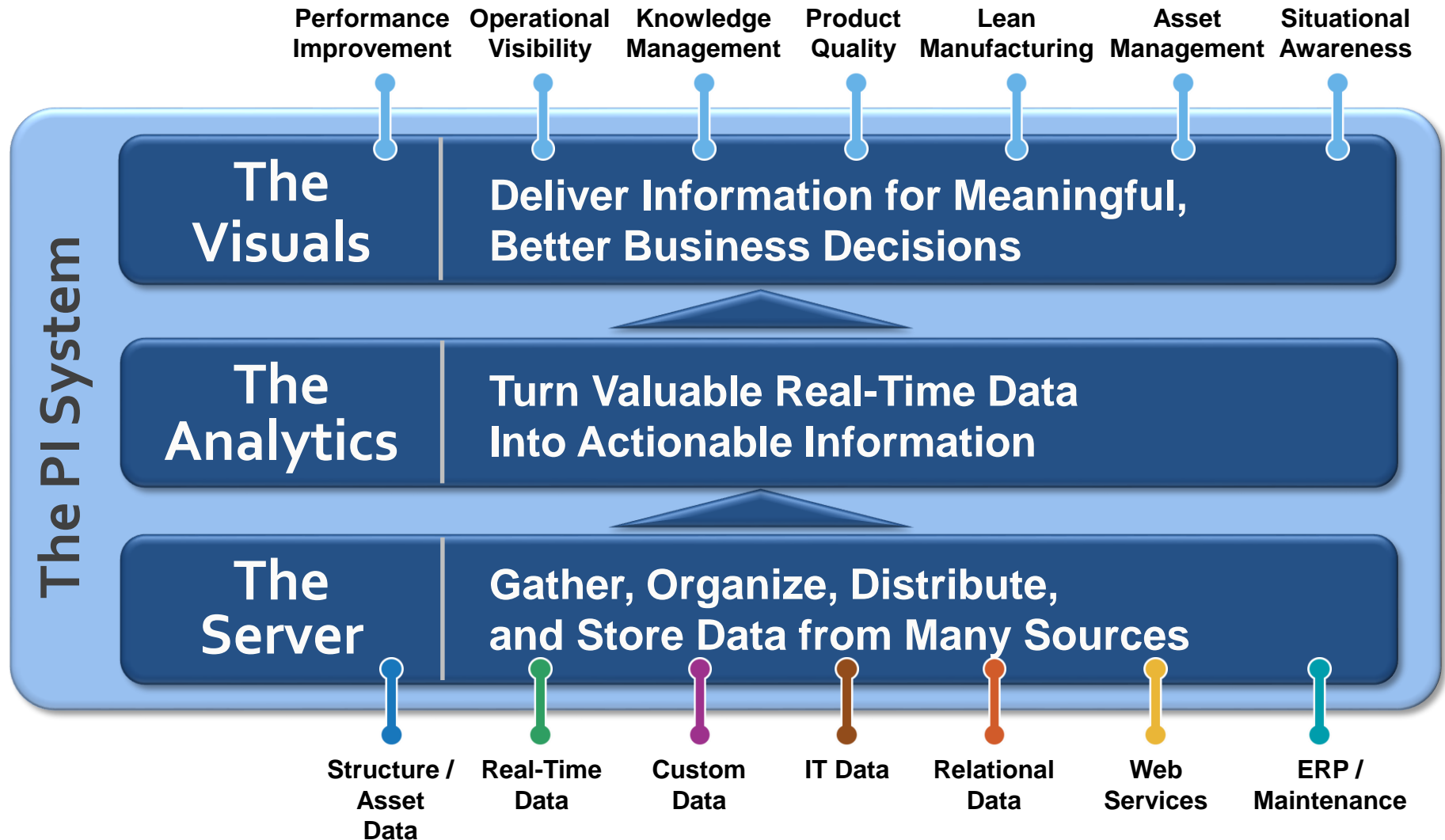
Laurent Garrigues
Product Management
lgarrigues@osisoft.com

September 15, 2009

Empowering Business in Real Time.

© Copyright 2009, OSIsoft Inc. All rights Reserved.

Functional Groups of The PI System



Aspects of The PI System



Cross Functional Aspects of the PI System

Scalable

Available

Reliable

Extensible

Secure

Interoperable

**The
Visuals**

**Deliver Information for Meaningful,
Better Business Decisions**

**The
Analytics**

**Turn Valuable Real-Time Data
Into Actionable Information**

**The
Server**

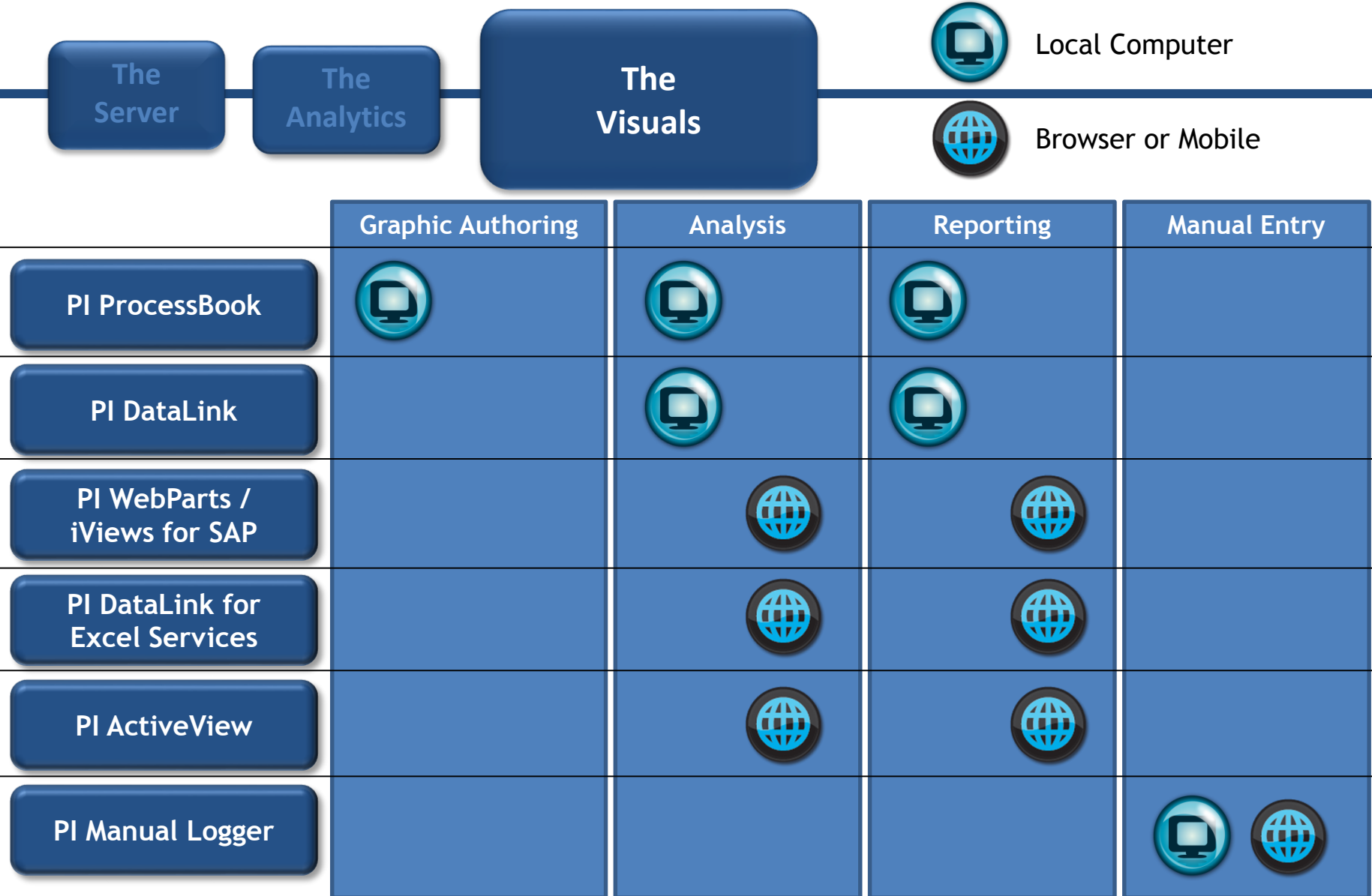
**Gather, Organize, Distribute,
and Store Data from Many Sources**

- Security
- Scalability
- 64-bit Support
- Asset Centric PI

The Visuals



The Visuals within the PI System



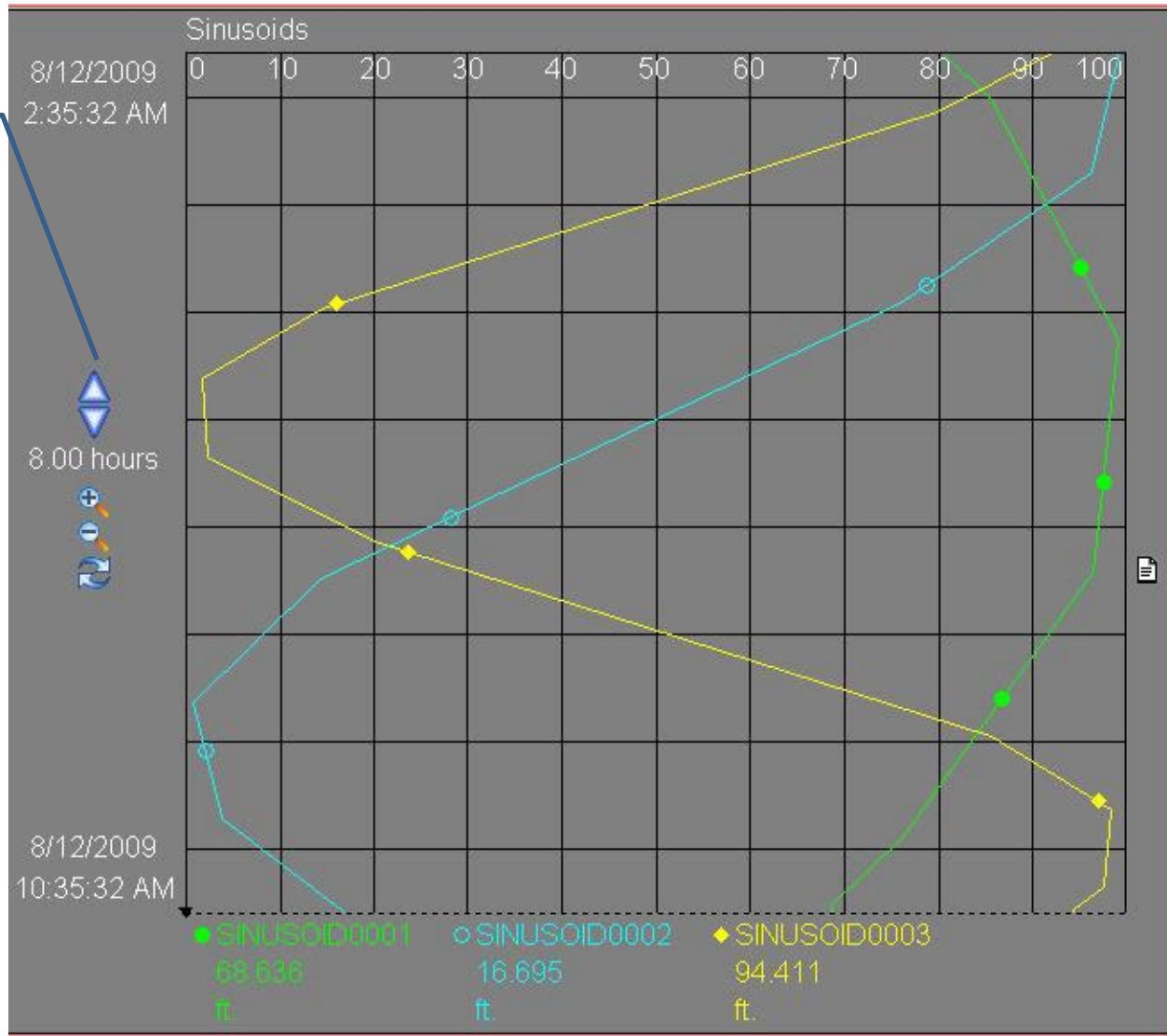
PI ProcessBook



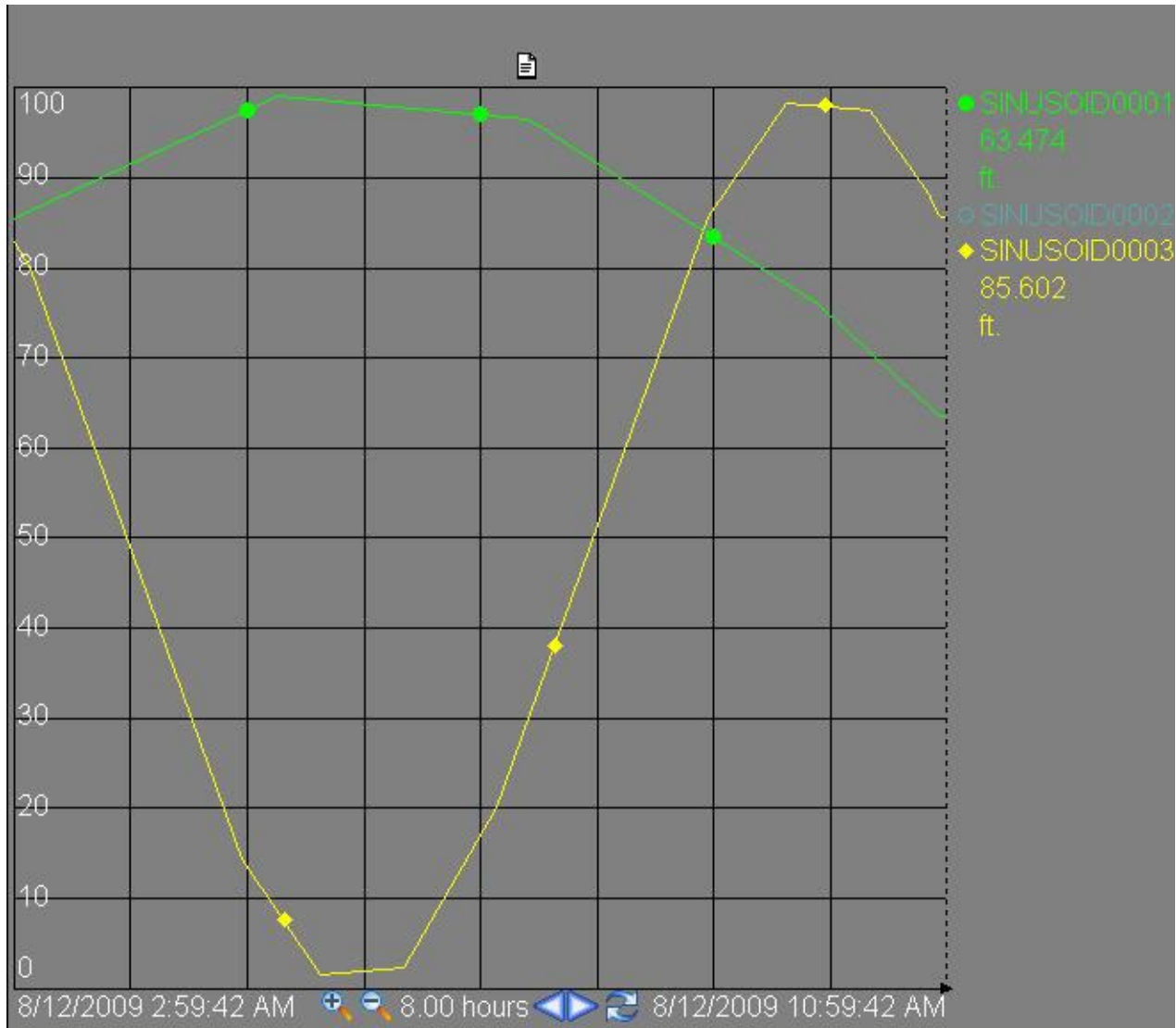
- Easier Symbol Formatting
- Quick Trend Zoom & Pan
- Data Details in a table
- Annotations on PI events
- Vertical Trends available
- Linear Regression Line on trends
- Tooltip Statistics on all dynamic symbols
- Drag and Drop symbol configuration

Trend Formatting

Scroll
Zoom
Revert



Highlight-Hide/Show Individual Traces



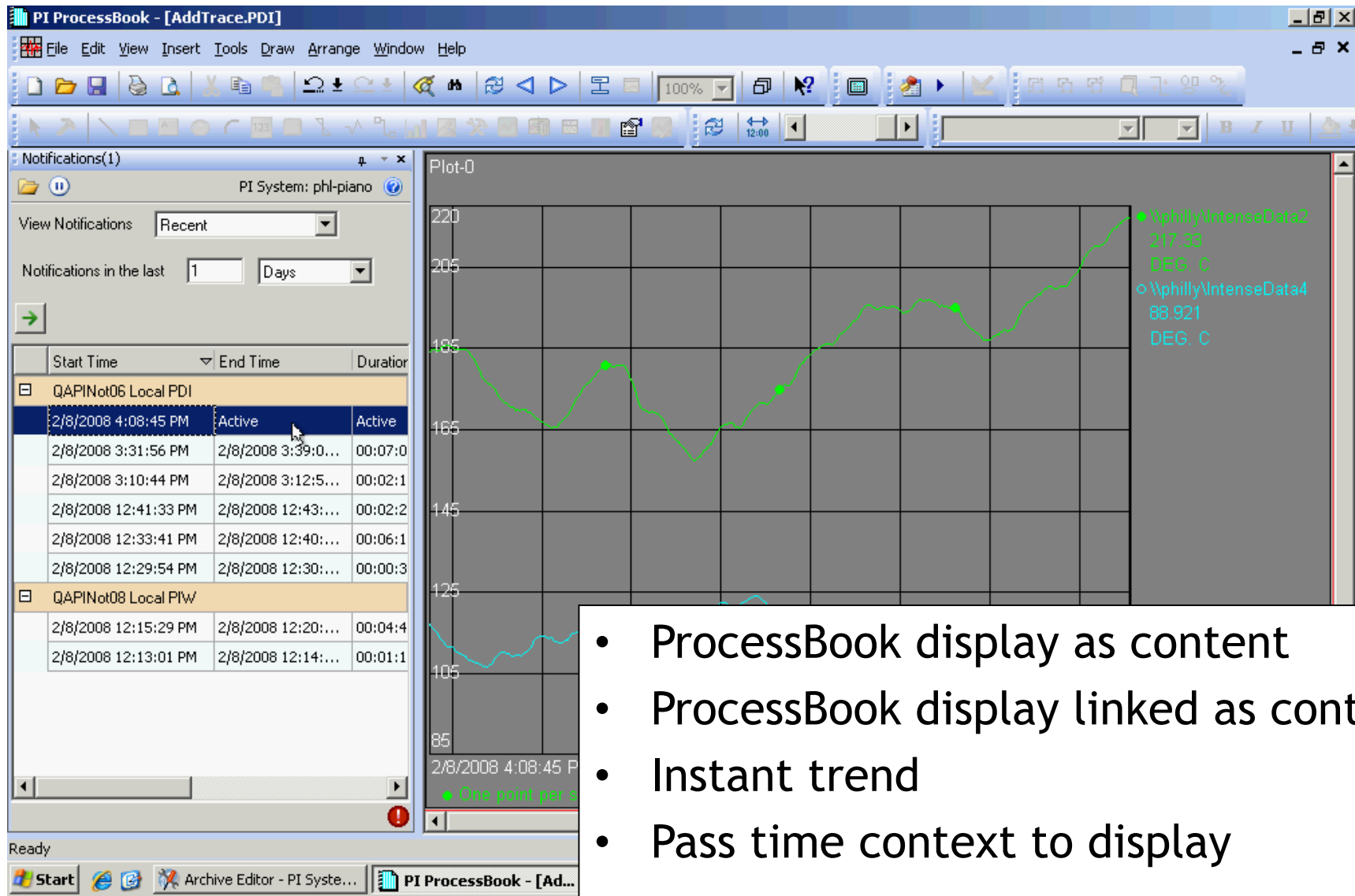
- Data
- Statistics
- Point Attributes

Data Source \\Philly\SINUSOID0001			Option Statistics		
Trend1					
Statistics	Value	Timestamp			
Data Type	Float 32				
Average	89.022				
Minimum	64.521	8/12/2009 10:51:28 AM			
Maximum	99.08	8/12/2009 5:14:58 AM			
Range	34.559				
StdDev	9.4339				
PStdDev	9.4339				
Count	28800				
Time Interval	8 Hours				
Time Range	Start Time	8/12/2009 2:54:16 AM			
	End Time	8/12/2009 10:54:16 AM			
Statistics...					
SINUSOID0001					
8/12/2009 3:00:58 AM 85.6574					
	Value	Value Type	Descripti		
*					

Data Source \\Philly\SINUSOID0001			Option Data		
Trend1					
Event Time	Value	Q	A	S	
8/12/2009 3:00:58 AM	85.657				
8/12/2009 5:14:58 AM	99.08				
8/12/2009 7:24:58 AM	96.524				
8/12/2009 9:53:28 AM	76.038				
8/12/2009 10:51:28 AM	64.521				
Row 1 of 5					
SINUSOID0001					
8/12/2009 3:00:58 AM 85.6574					
	Value	Value Type	Descripti		
*					

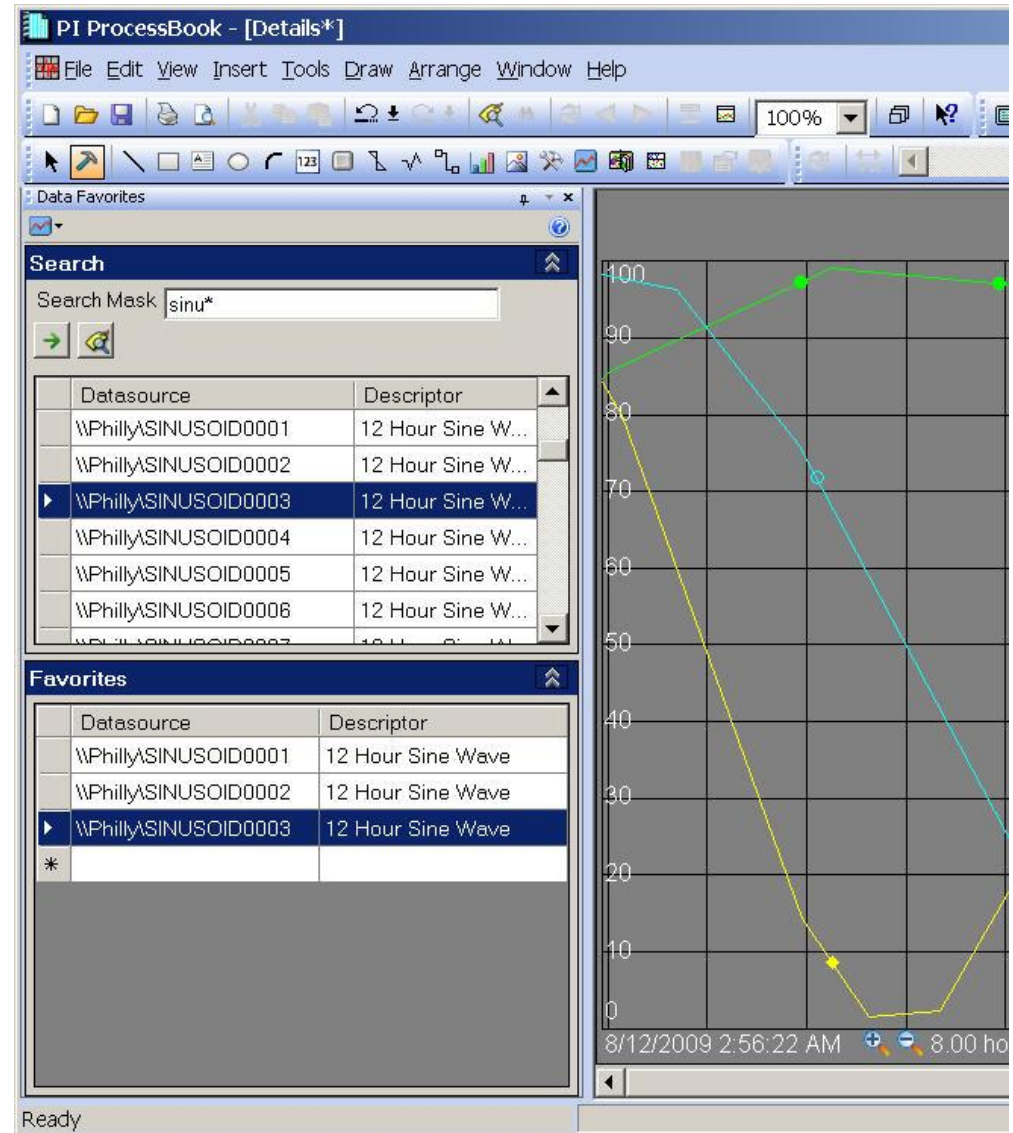
Data Source \\Philly\SINUSOID0001			Option Point Attributes		
Trend1					
Attribute	Value				
archiving	1				
changedate	12/18/2006 1:12:31 PM				
changer	piadmin				
compdev	2				
compdevpercent	2				
compmax	28800				
compmin	0				
compressing	1				
converts	1				
creationdate	12/18/2006 1:12:31 PM				
creator	piadmin				
Point Attributes...					
SINUSOID0001					
8/12/2009 3:00:58 AM 85.6574					
	Value	Value Type	Descripti		
*					

PI Notifications Pane

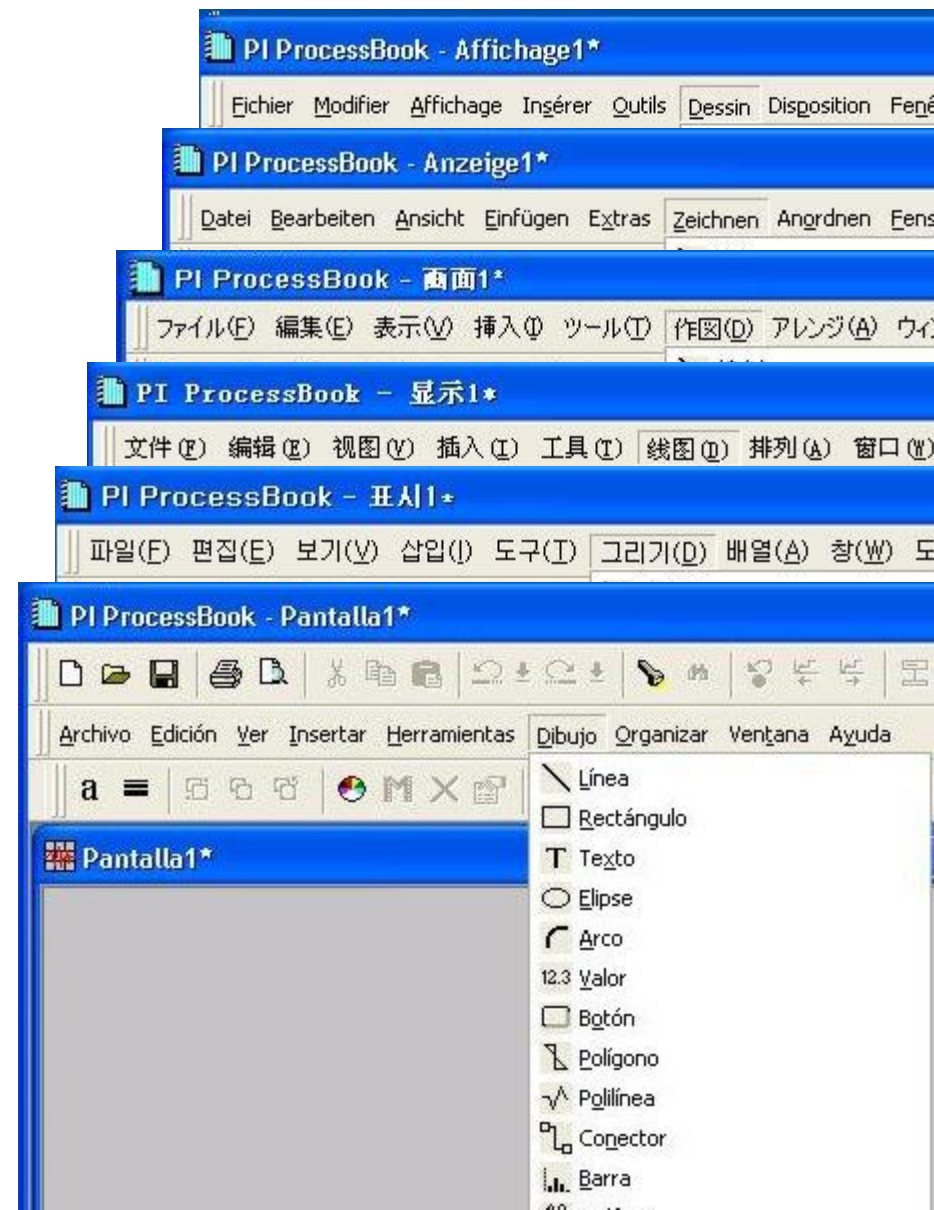


Data Favorites Pane

- Search
 - To Display Elements
 - From Search
 - From Favorites
 - To Other applications (Microsoft Excel)
- Favorites



- ProcessBook and ActiveView
 - English
 - French
 - German
 - Spanish
 - Simplified Chinese
 - Japanese
 - Korean
 - Russian (*coming soon*)
 - Brazilian Portuguese (*coming soon*)
- BatchView
 - Japanese



- ProcessBook 3.1 (October 2008 - *Released*)
 - Ready for Windows Integrated Security
 - PI Notifications integration
 - Trending and formatting enhancements
- ProcessBook 3.2 (September 2009)
 - AF Element Relative Displays
 - Display Playback
 - Display Browsing and Bookmarking
 - Office Communicator collaboration integration
 - Statistical Quality Control (SQC) symbol now included

AF Element Relative Displays

PI ProcessBook - [WellHead]

File Edit View Insert Tools Draw Arrange Window Help

64%

C:\UCdocs\WellHead.pdi

7/1/2009

Element Relative Display

Search

well*

Elements of Interest

Group by: ☐ Template

Filter

Name	Description	Category
Well12345		
Well2346		
Well2347		
Well4569		
Well4570		

Well4570

Last Acid Wash 1/16/2003

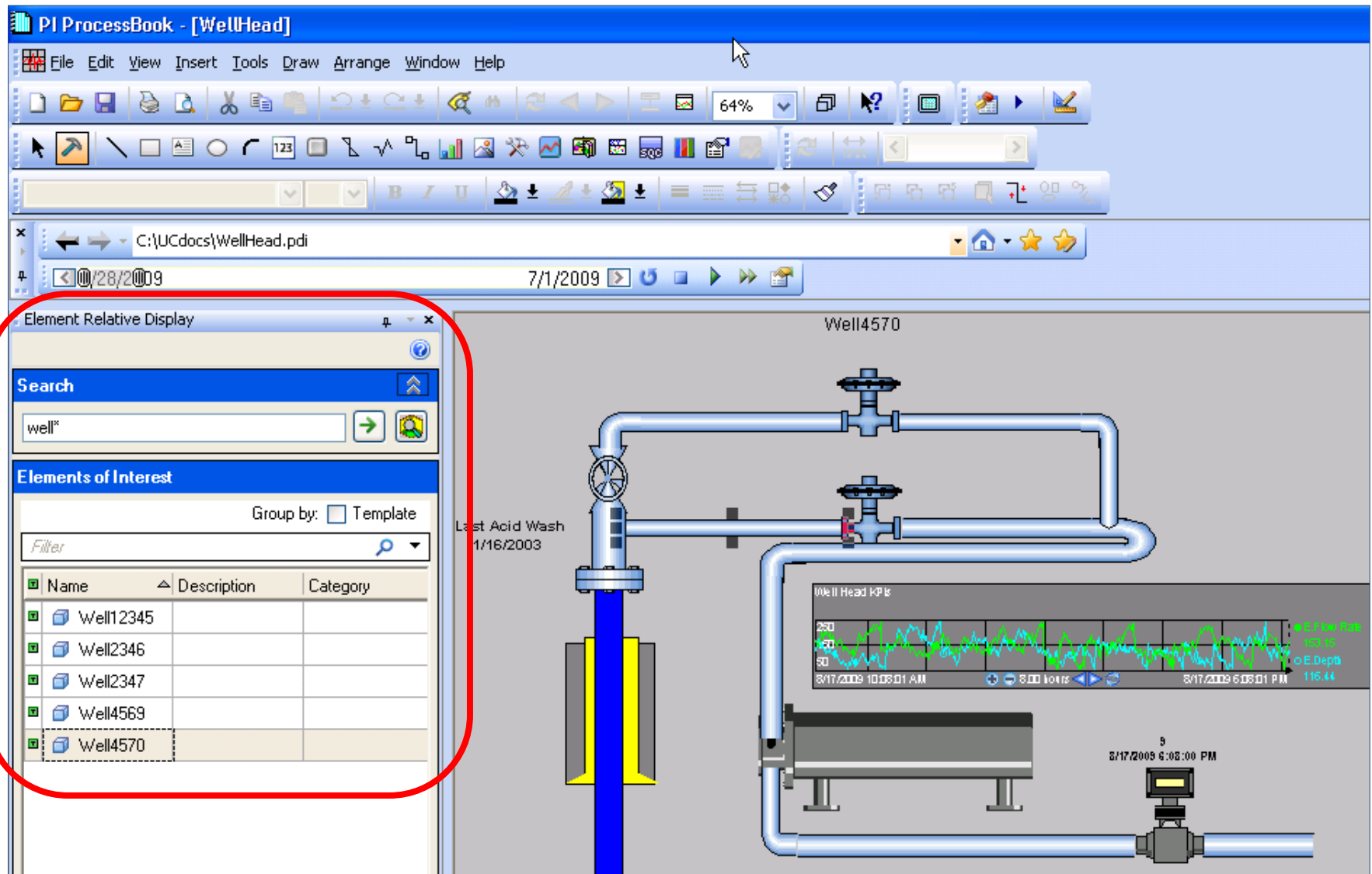
Well Head KPI's

250
150
50

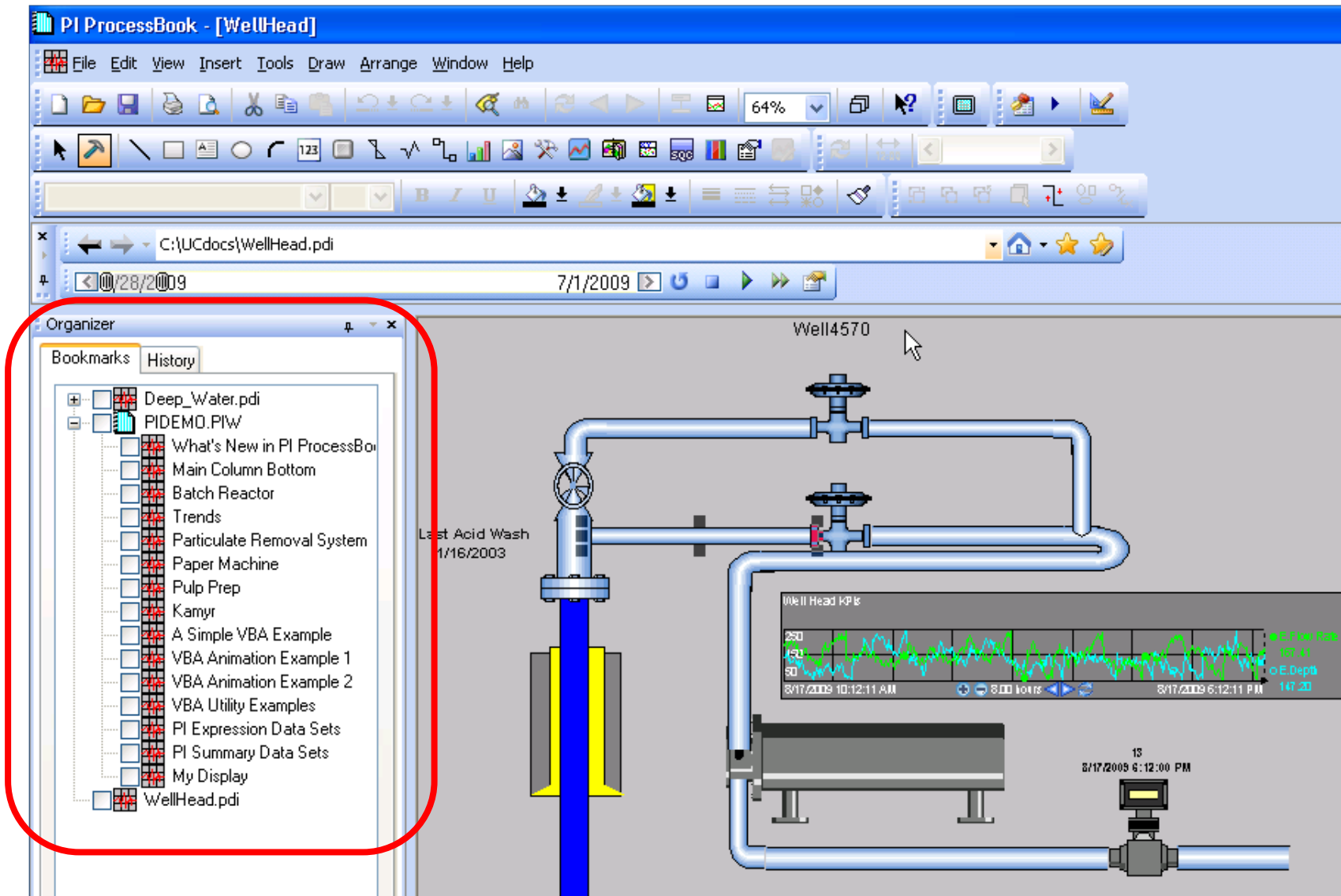
8/17/2009 10:05:01 AM 8:00 hours 8/17/2009 6:05:01 PM

o E.Flow Rate 153.15
o E.Depth 116.44

5
8/17/2009 6:05:00 PM



Display Browsing and Bookmarking



The screenshot displays the PI ProcessBook interface for a process named "WellHead". The main window shows a process diagram with a blue vertical pipe labeled "Well4570" and various valves and pipes. A "Last Acid Wash" event is noted with the date "1/16/2003". A "Well Head KPIs" chart is visible, showing a green line graph with a blue trend line, with values ranging from 50 to 250. The chart is dated "8/17/2009 10:12:11 AM" and "8/17/2009 6:12:11 PM".

The "Organizer" window is open on the left, showing a "Bookmarks" tab. The list of bookmarks includes:

- Deep_Water.pdi
- PIDEMO.PIW
- What's New in PI ProcessBook
- Main Column Bottom
- Batch Reactor
- Trends
- Particulate Removal System
- Paper Machine
- Pulp Prep
- Kamyr
- A Simple VBA Example
- VBA Animation Example 1
- VBA Animation Example 2
- VBA Utility Examples
- PI Expression Data Sets
- PI Summary Data Sets
- My Display
- WellHead.pdi

DataLink

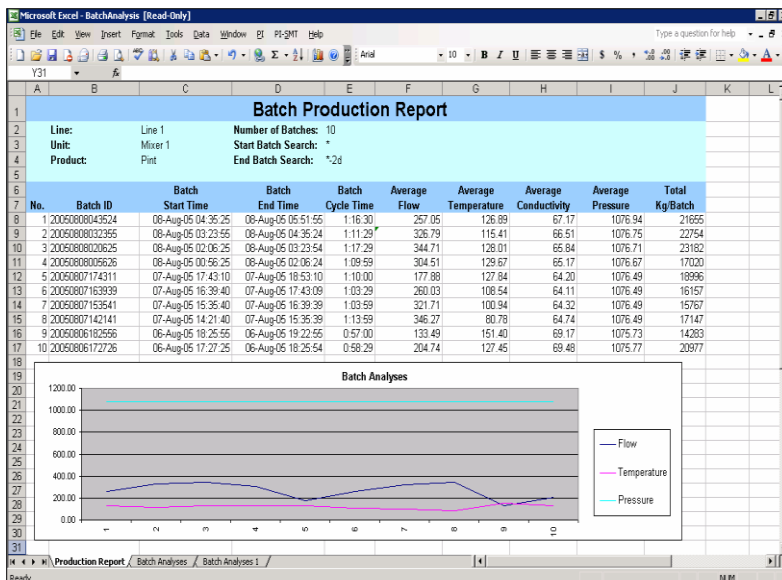


PI DataLink:

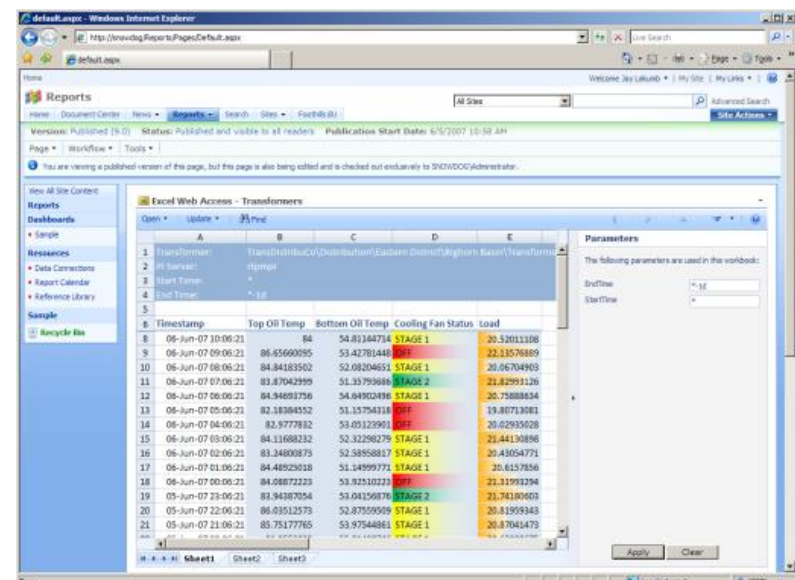
- Excel add-in for access to real-time and historical PI data

PI DataLink for Excel Services (DLES):

- DataLink spreadsheets on the Web



DataLink



DataLink for Excel Services

- DataLink 4.1 (*Released*)
 - Support for automated updating
- DataLink for Excel Services 4.1 (Q4 2009)
 - Support for 64-bit SharePoint 2007

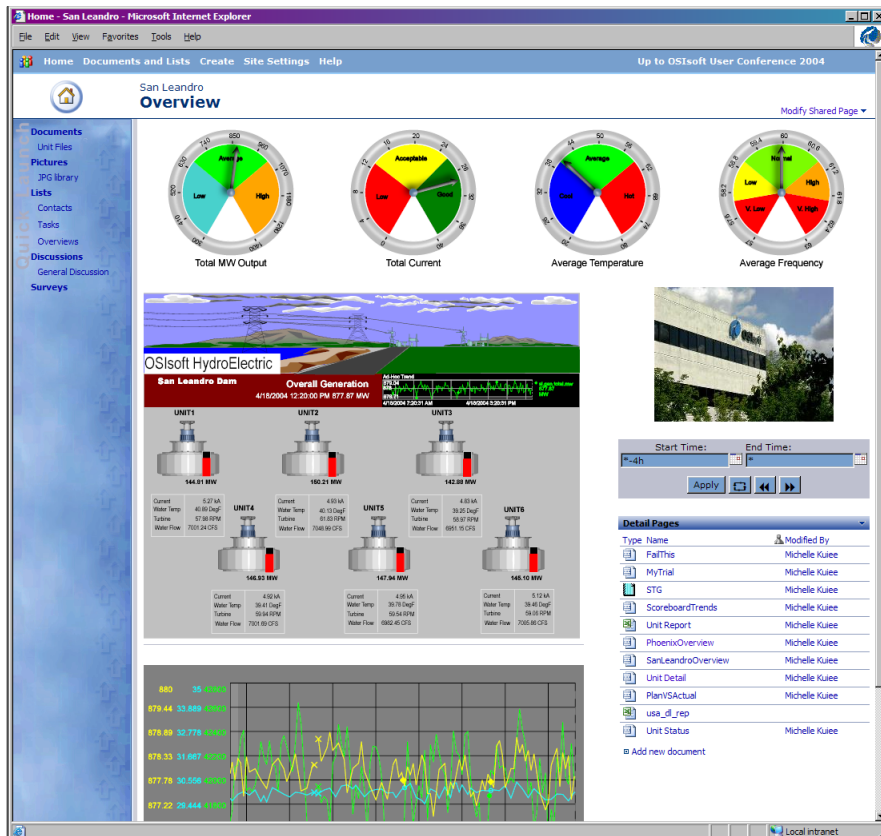
See “OSIsoft Products and Office 2007 Compatibility FAQ”
on Tech Support site

PI WebParts / iViews

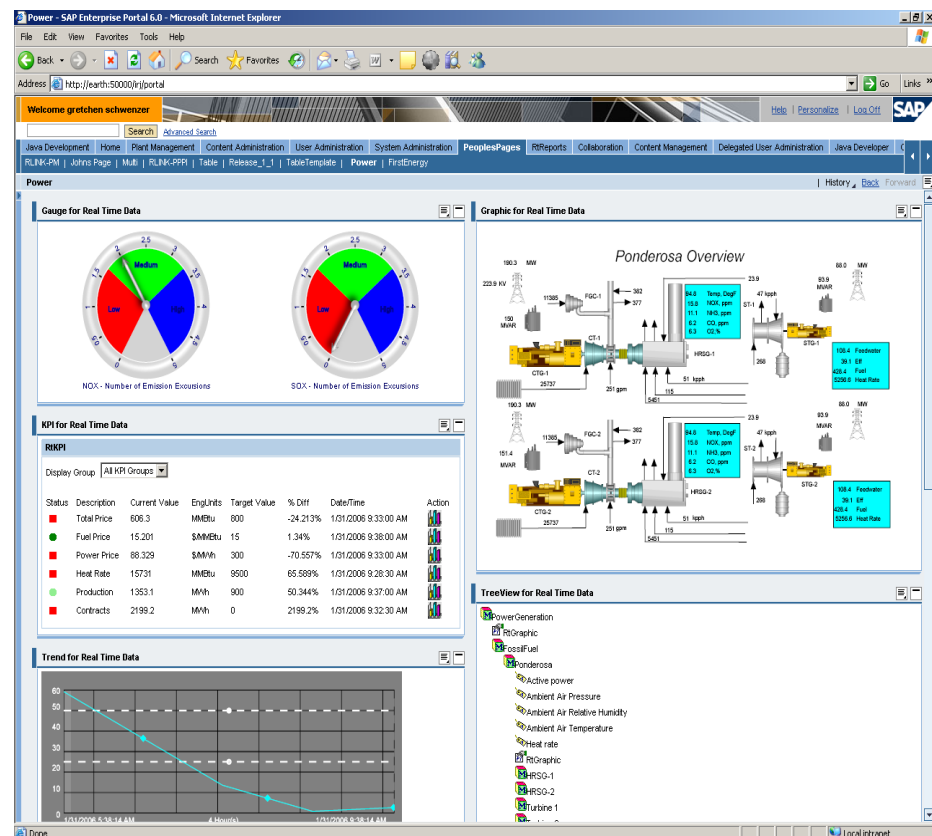


- Integration and Collaboration
- Access to Process Information
- Analysis and Reporting

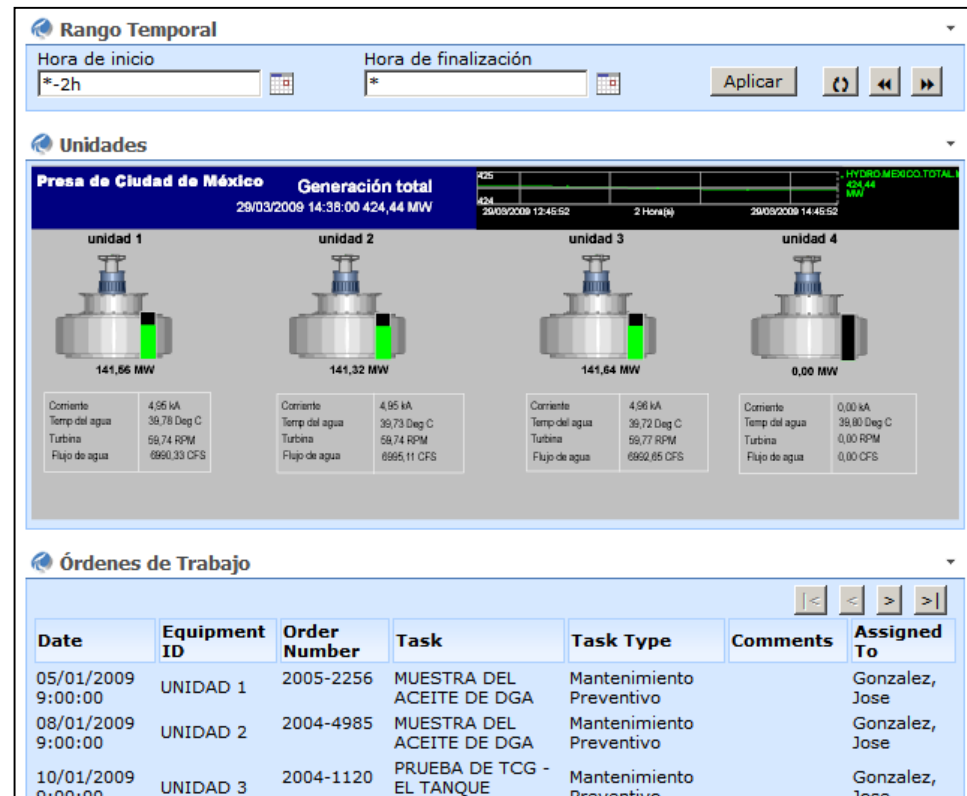
PI WebParts example



iViews example



- RtWebParts 2.2 (September 2008 - *Released*)
- 8 Language Packs (March 2009 - *Released*)
 - Japanese
 - Simplified Chinese
 - Korean
 - French
 - Brazilian Portuguese
 - German
 - Spanish
 - Russian



- PI WebParts 3.0 (Q42009)
 - Product will be officially rebranded PI WebParts
 - Support for 64-bit operating systems
 - Support for AF
- PI WebParts 4.0 (2010)
 - Support for Microsoft Silverlight
 - Support for Sharepoint 2010

OSIsoft Product Roadmap

- Major Release
- ▲ Minor Release

Jul Aug Sep Oct Nov Dec Q1 '10 Q2 '10

Client

Desktop

ProcessBook (3.2)

BatchView (3.2)

Datasheet Control (2.0.1)

DataLink (4.1)

Manual Logger (2.3)

Web

PI WebParts (3.0)

ActiveView (3.2)

DataLink Excel Services (4.0.3)

RtPM Business Pkg (70.1.1)

TBD

TBD



PI Analytics



The Analytics within the PI System



The
Server

The
Analytics

The
Visuals

Advanced Computing Engine (ACE)

PI Notifications

RtReports

Enterprise Services

PI Analytics

(PI Performance Equations, PI Totalizers, PI Alarms, PI RTSQC)

The Analytics Landscape



		Configuration	Programming
Specific Content	PI Tags	PI PE, PI Totalizers, PI Alarms, PI RT SQC	PI ACE, PI SDK (Custom applications)
Generic Content	PI Module DB	None	PI ACE, PI SDK (Custom applications)
	PI AF	<div>AF Analysis Rules<ul style="list-style-type: none">• PE syntax• AF formula DR syntax• Additional ARs (roll-up etc.)Clock & Event based scheduling Export results to PI tags</div>	Custom AF Data References Custom AF Analysis Rules Custom applications (AF SDK)

2010 FOCUS

PI Notifications

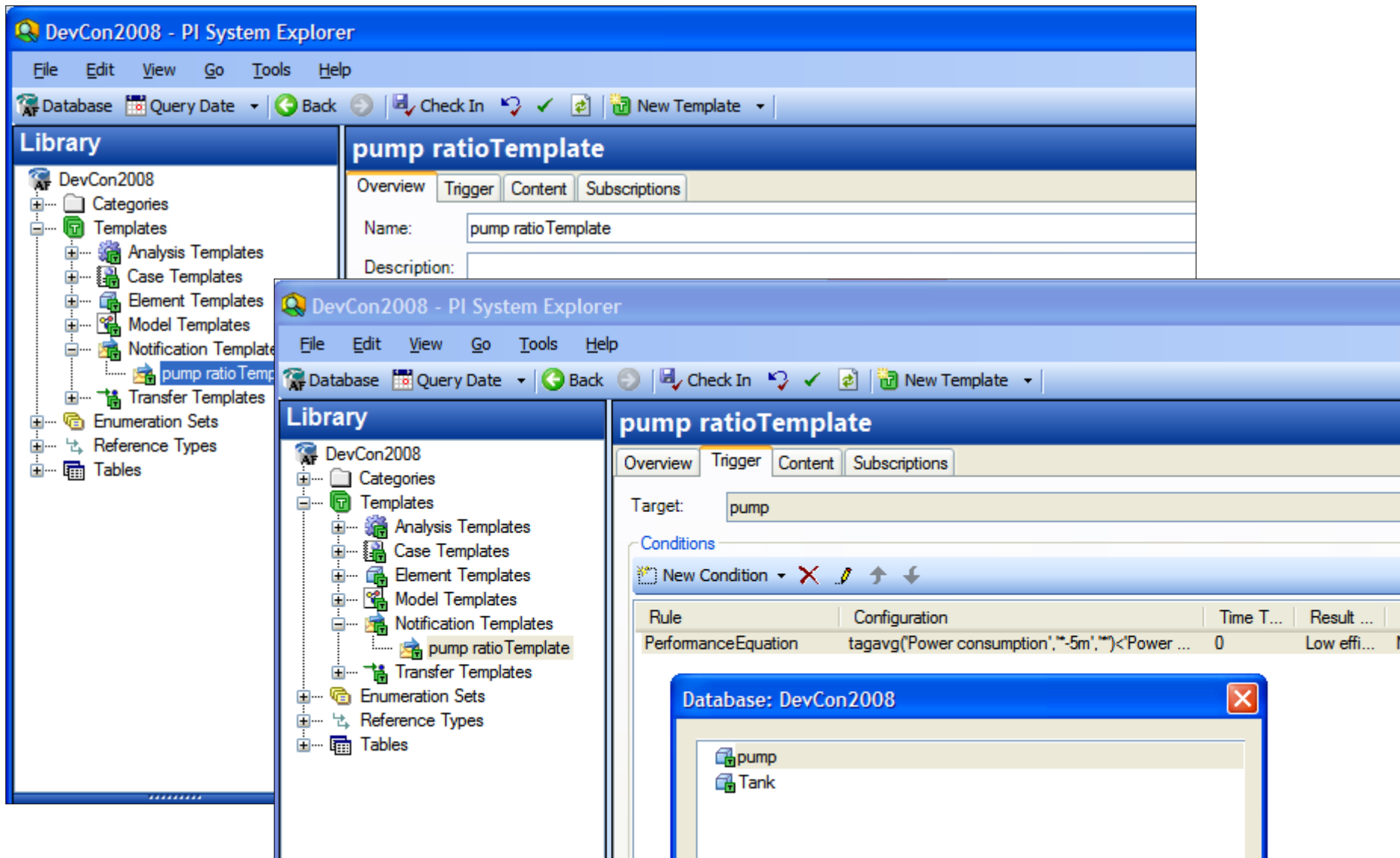


What's coming with PI Notifications 1.1?



- Release for September 2009
- Performance improvements
 - Up to 10k Notifications with multiples rules
 - Up to 60k events/minute
- Notification templates
- Native Office Communication Server (OCS) delivery channel
 - Scheduled for release in October 2009
 - Shipped as a new plug-in for v1.1

PI Notifications templates



The screenshot displays the DevCon2008 - PI System Explorer interface. The main window is titled 'pump ratioTemplate' and shows the 'Overview' tab. The 'Name' field is set to 'pump ratioTemplate'. The 'Description' field is empty. The 'Library' pane on the left shows the tree structure of the system, with 'pump ratioTemplate' selected under 'Notification Templates'.

A second window, also titled 'DevCon2008 - PI System Explorer', is overlaid on the main window, showing the 'Trigger' tab for the 'pump ratioTemplate'. The 'Target' field is set to 'pump'. The 'Conditions' section shows a table with the following data:

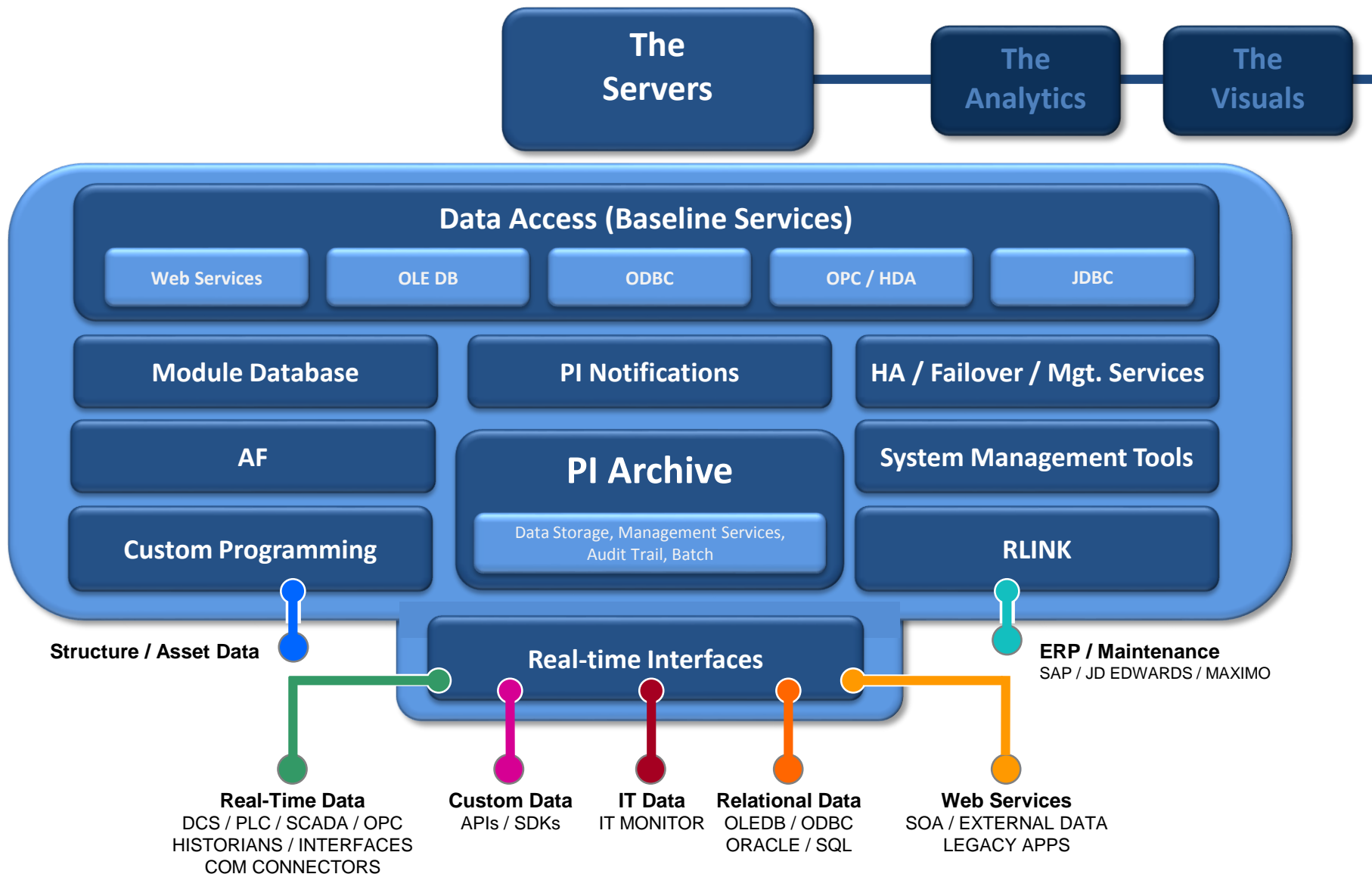
Rule	Configuration	Time T...	Result ...
PerformanceEquation	tagavg('Power consumption',*-5m,*)<'Power ...	0	Low effi...

A third window, titled 'Database: DevCon2008', is also overlaid, showing a list of objects: 'pump' and 'Tank'.

The Servers



The PI Servers

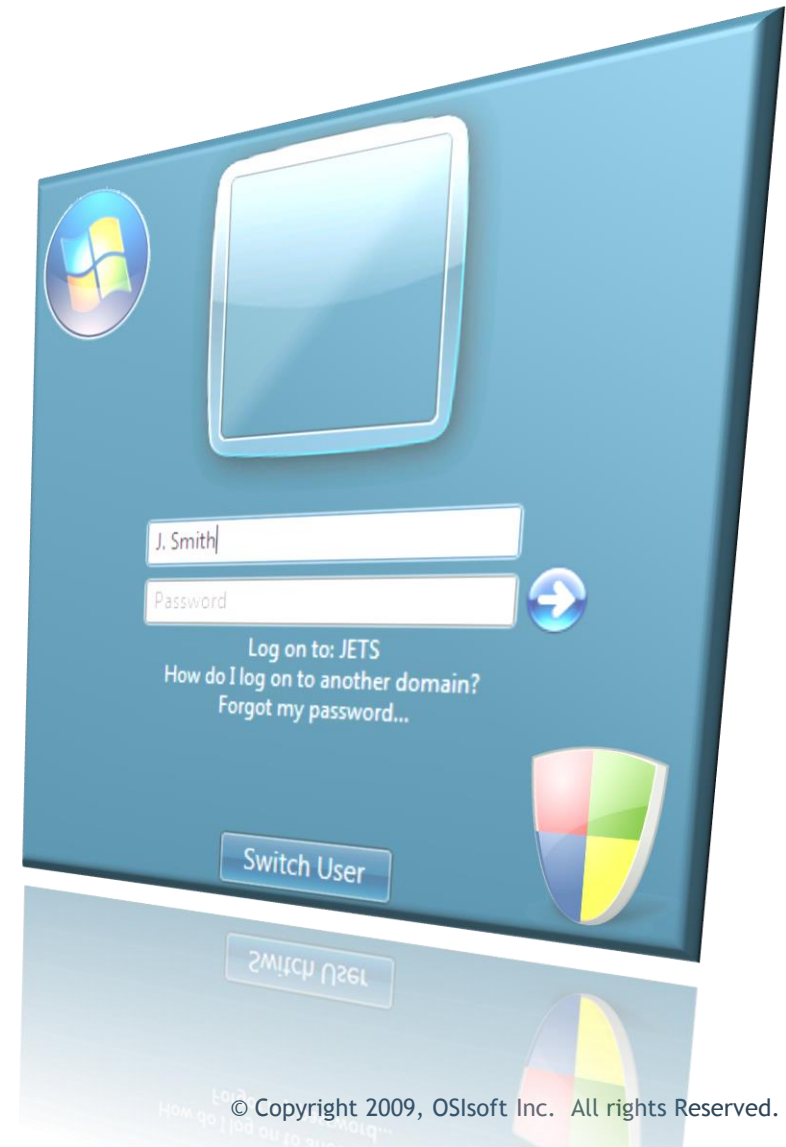


The PI Server



- Release in September 2009
- New Security Model (authentication & authorization)
 - Windows Integrated Security (WIS)
- New/Improved System Management Tools (SMT)
- New PI Network Manager
- Scalability, HA
- Setup and PI Server Backups
- Troubleshooting & Recovery
- Enhanced PI Message Log

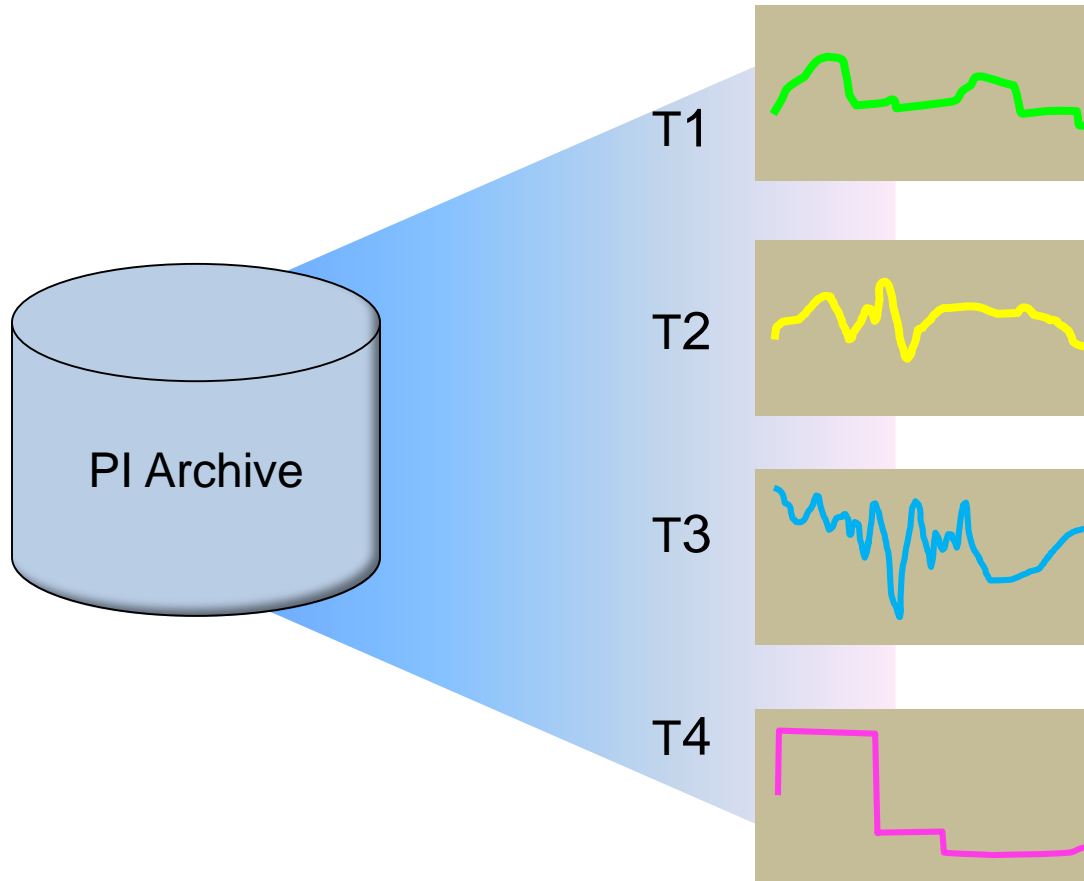
- Easier to manage
 - Manage users/groups in one place
 - Use Windows Tools
 - Designed for other providers also
- More secure
 - Authentication from the OS
- More flexible
 - Combine users/groups
- Backward compatible
 - Smooth transition
- Consistent with AF security



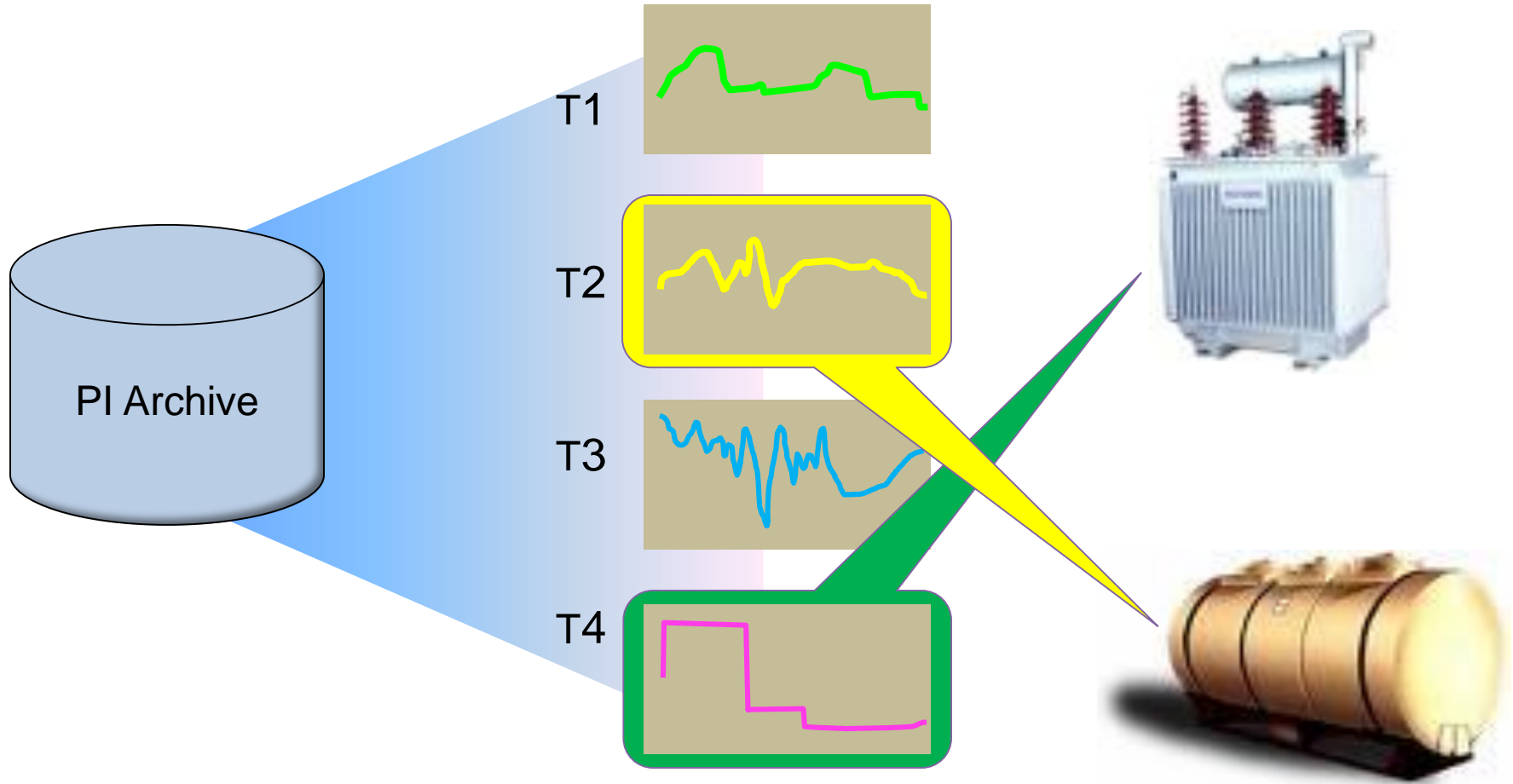
The PI AF Server



PI is about time series ... and tags!



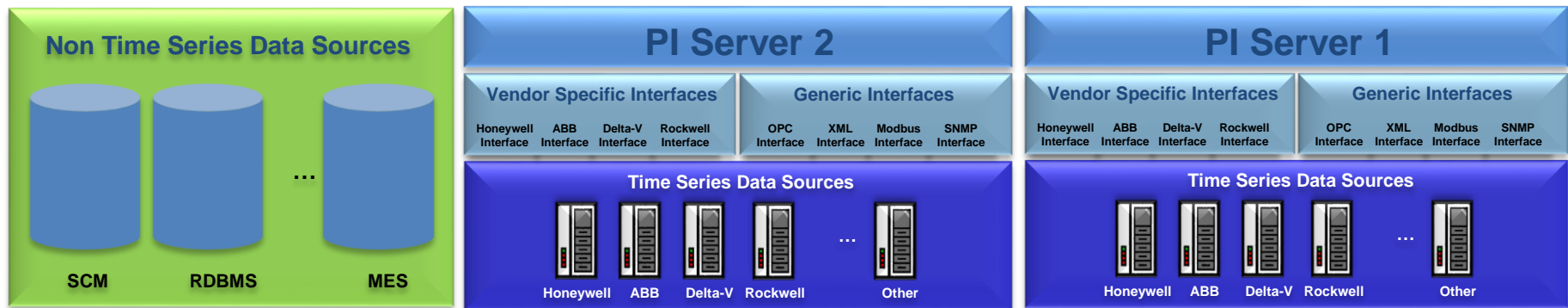
But Tags mostly relate to assets



- Structures/organizes the real time data by asset
- Spans multiple PI Servers
- Incorporates non time series data



Asset/Equipment centric access to information



Some companies who use PI AF today ...



Oil & Gas

- Shell, Chevron, TOTAL



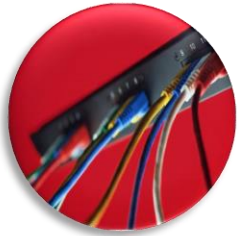
Power Generation, T&D

- AMI, Xcel Energy, AEP, DTE, KCPL, Hydro-Quebec



Pulp & Papers

- Appleton, International Paper, Tembec



Data Centers

- Microsoft, HP, Cornell

- High Availability
 - Conceptually Very similar to HA for the PI Server
 - Automatic Failover for clients
 - SQL replication for the AF database
- Notifications support
 - New Notifications template object
- 64 bit support
- Ready for Localization support

- Performance improvements
- Indexed attributes for faster searches
- AF Tables automatic refresh
- Enhanced Table Lookup Data References
 - Interpolation/Extrapolation
 - Summaries
- XML Import/Export command line tool
 - Supports editing and deleting

Data Access

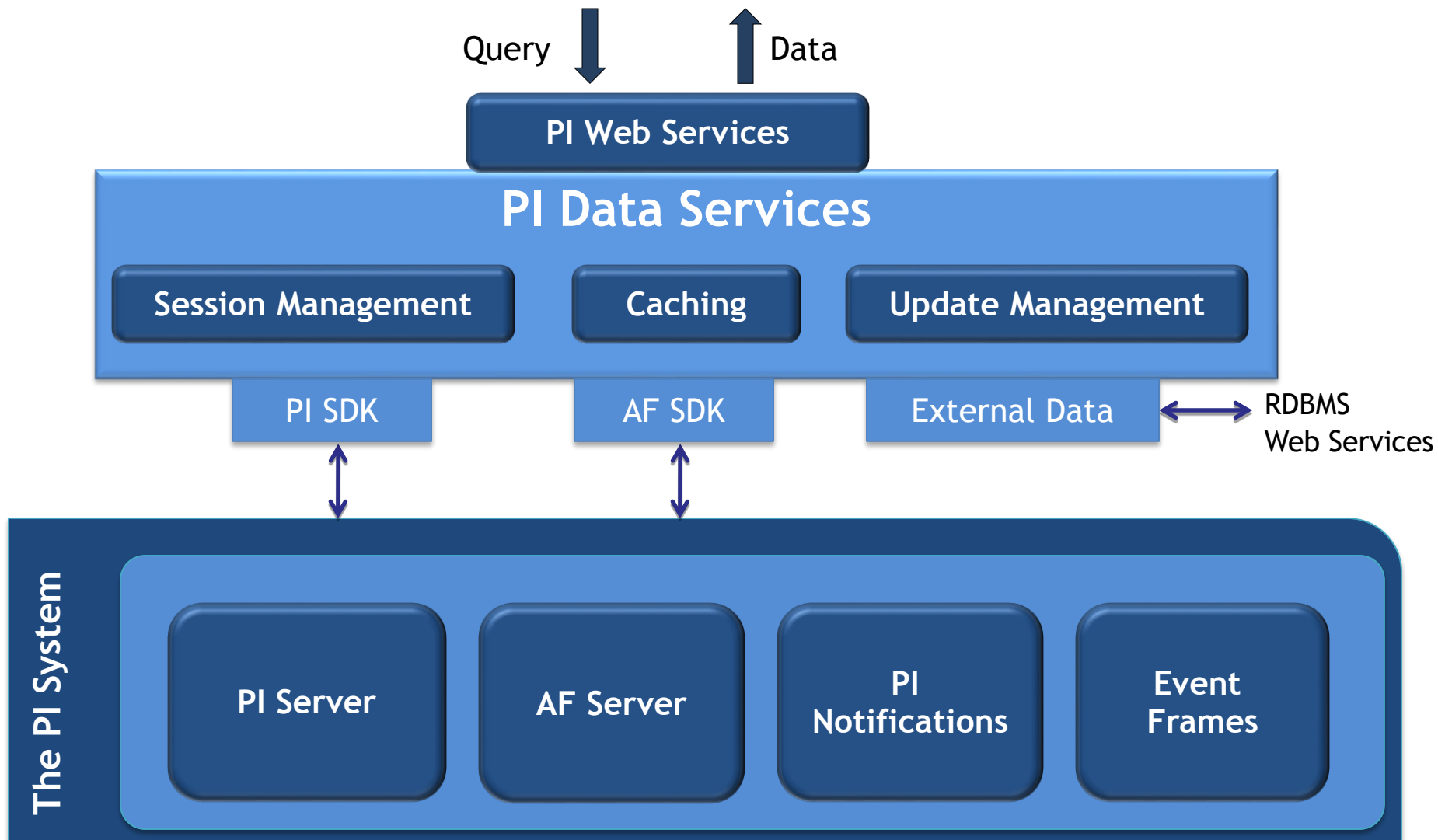


Collection of all products that offer programmatic data access to all or part of the PI System

- SQL tools
 - PI OLEDB Provider, PI ODBC Client
 - PI JDBC Driver (*available on OSIsoft vCampus*)
- Web Services
 - PI Web Services (*CTP available on OSIsoft vCampus*)
- OPC
 - OPC DA/HDA Server
 - OPC UA Server (*CTP available on OSIsoft vCampus*)
- SDKs (for partners/developers)
 - PI SDK, AF SDK, AN SDK

- Integrate with 3rd party products (SQL, Office, SAP)
- Create reports
 - SQL Reporting Services, Crystal Reports, Cognos, etc)
- Share PI data on the Web (SharePoint, ASP.NET, etc)
- Enterprise Application Integration - EAI (BizTalk, Tibco, etc)
- Extract, Transform and Load PI data - ETL (SQL, SAP BO, etc)
- Combine PI data with data in other systems (SQL, Oracle, etc)
- Online Analytical Processing - OLAP (SQL)
- Visualize with HMI (OPC clients)
- Develop custom interfaces to PI system
- Manage PI systems

**Support virtually any custom application
in any programming language on any platform!**



- PI Data Services (Baseline Services) (Q4 2009)
 - Support both 32-bit and 64-bit providers
- PI Web Services Technical Preview (*Released*)
 - OSIsoft vCampus online, hosted environment
- PI OLEDB 3.3 (*Released*)
 - Support both 32-bit and 64-bit providers
- PI JDBC 1.0 (*Released*)
 - JDBC-OLEDB Bridge for Windows and Linux, OSIsoft vCampus
- PI System OLEDB 1.0 (Q4 2009)
 - AF data access

- OPC DA/HDA Server 1.2.6 (*Released*)
 - Achieved Self-Certification Logo from OPC Foundation
- PI OPC UA Server Technical Preview (*Released*)
 - OSIsoft vCampus online, hosted environment
- PI SDK 1.3.8 (*Released*)
 - Support for both 32-bit and 64-bit providers
- AF SDK 2.1 (*Released*)
 - Support for both 32-bit and 64-bit providers
- PI SDK 1.4.0 (Q4 2009)
 - Client-side buffering for manually entered data, ACE calculations writing to PI, and custom SDK-based interfaces

- Support for:
 - Standards
 - Multiple programming languages
 - Multiple hardware and operating system platforms
 - Updates and asynchronous calls for better performance and scalability
- Simplifies buffering for data writes to ensure no data loss
- Provides low-level access to all PI system data (including metadata)

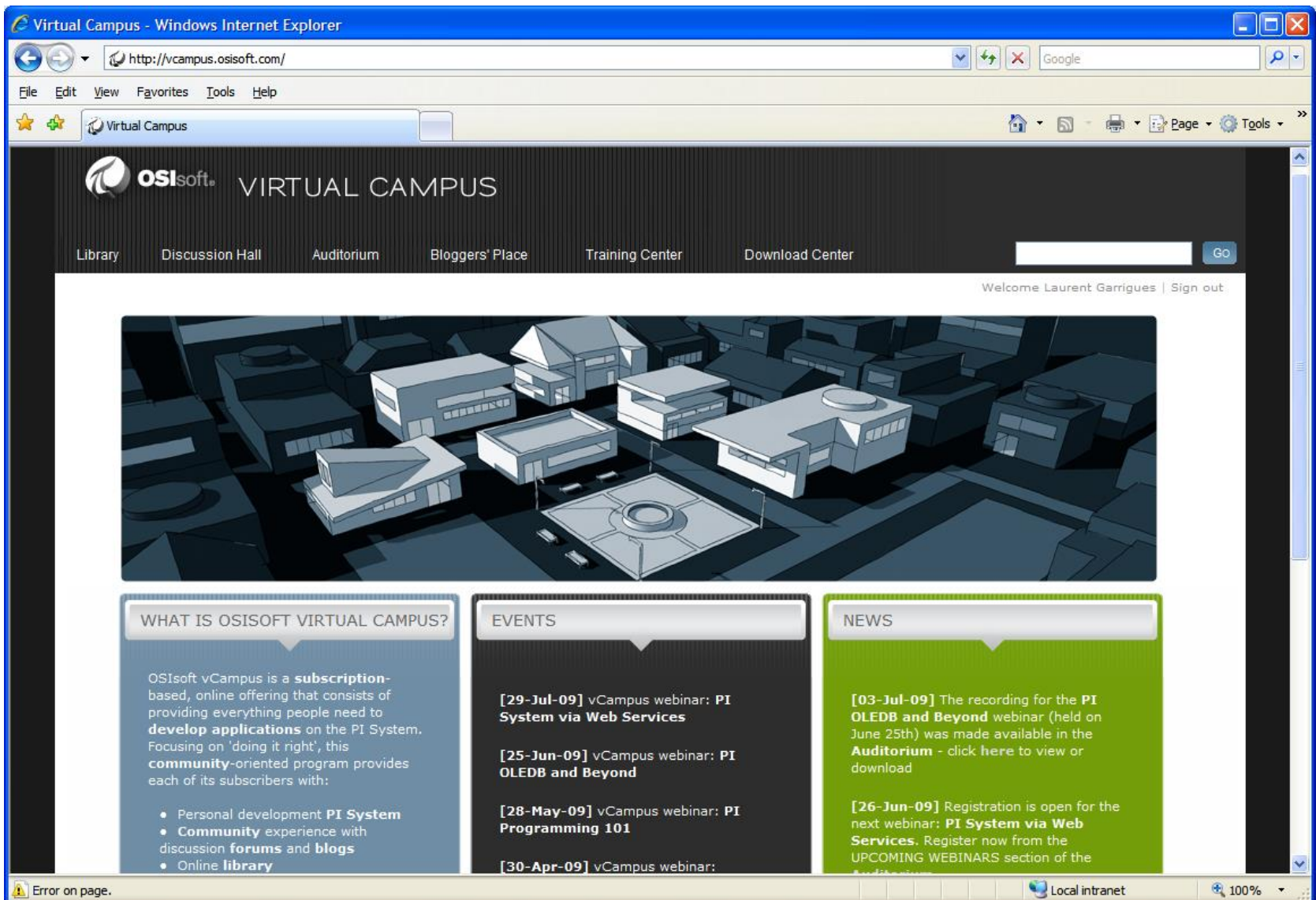
OSIsoft vCampus



- Includes access to all programmatic interfaces to PI System: AF/AN SDK, PI OLEDB/ODBC, PI SDK, OPC DA/HDA/UA Server
- Development license for programmatic interfaces
- Runtime licensing (CAL)
- Programming examples and documentation
- PI Virtual Campus - community collaboration site
 - Forums, Blogs, Libraries

vCampus live Conference soon!





OSIsoft Product Roadmap

- Major Release
- ▲ Minor Release

Jul Aug Sep Oct Nov Dec Q1 '10 Q2 '10

Server

PI Server (3.4.380)

AF (2.1)

Notifications (1.1)

SMT (3.3.0.4)

MS Platform for CEP (1.0)

OCS Delivery Channel (1.1)

TBD

Data Access

PI SDK (1.4)

PI API (1.6.2)

PI System OLEDB (1.0)

PI Data Services (3.0)

PI JDBC (1.0)

OPC UA Server (1.0)

Web Services

SAP AMI Package

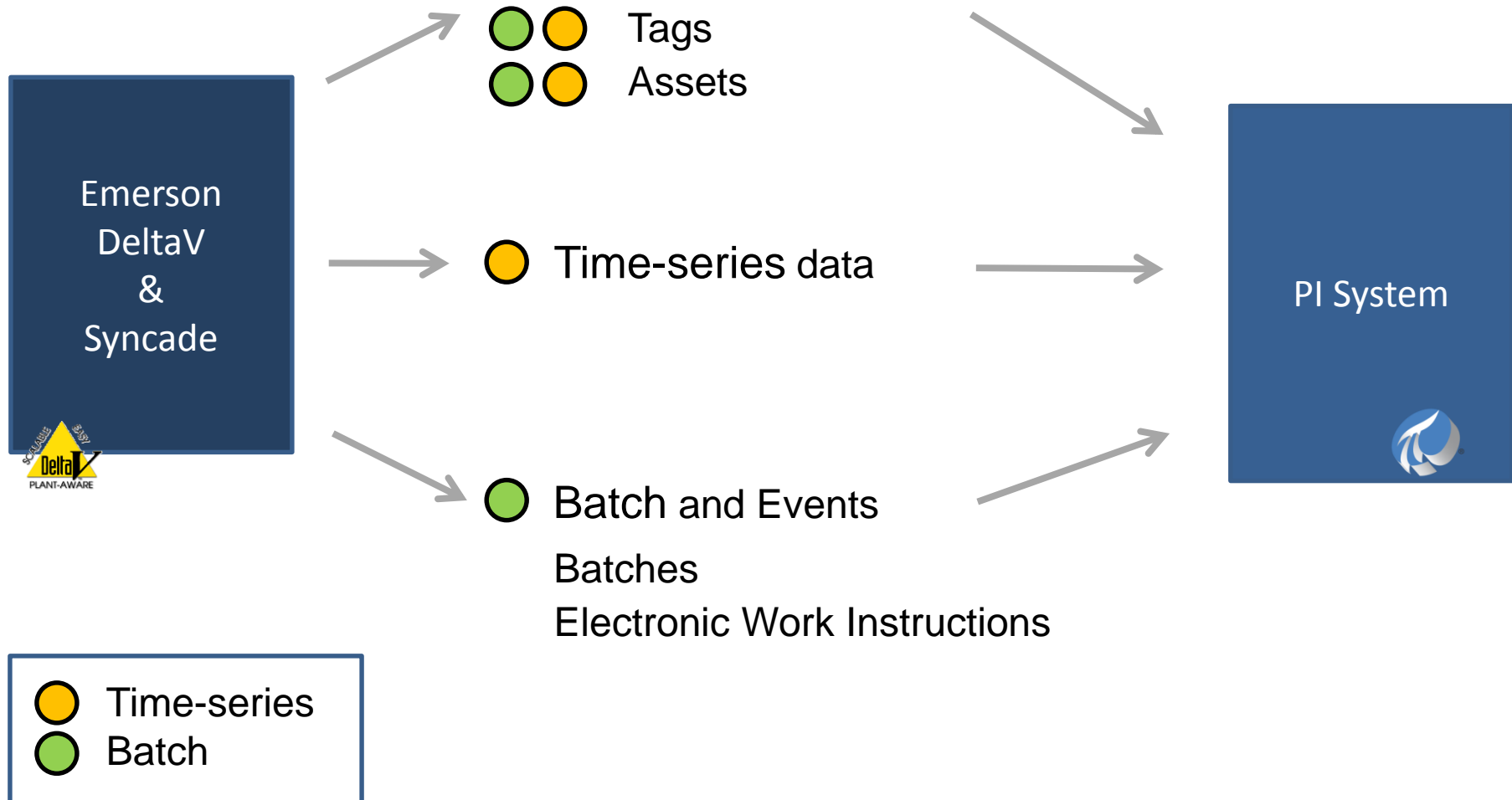
PI ProfileView (2.2)

TBD

PI Interfaces



Configuration



OSIsoft Product Roadmap – Interfaces

- Major Release
- ▲ Minor Release

Jul Aug Sep Oct Nov Dec Q1 '10 Q2 '10

General Interfaces

AutoPointSync (1.2.5.0)

PI UFL (3.2.0)

RDBMS (3.17.0)

WITSML (1.0)

IT Monitor

Power Meter (1.0)

ICU (1.5.0)

TBD

TBD

OPC Interfaces

PI OPC UA Interface (1.0)

PI OPC Interface (2.4.0)

TBD

TBD

Batch Interfaces

ABB 800xA (1.0.0)

Siemens Simatic PCS7 (1.0.0)

Wonderware InBatch (1.0.0)



OSIsoft Product Roadmap – Vendor Specific Interfaces

 Major Release
 Minor Release

Jul Aug Sep Oct Nov Dec Q1 '10 Q2 '10

Vendor Specific Interfaces

BACNet (1.0.2)

ACS Prism (1.1.0)

DNP3 (3.0.2)

Bailey Infi90 (1.8.4)

Bailey System 6 (1.3.0)

Yokogawa FAST/Tools (1.2.3)

Foxboro (2.4.0)

Foxboro SCADA (1.3.5)

GE Cimplicity (1.2.3)

Max1000 (1.1.0)

Modbus (2.49.0)

XML (1.3.0)

IPMI (1.0)

ABB Advant (5.3.0)

Cal ISO Dispatch (2.0.0)

Hartman & Braun ConlinkX (2.27.0)

Siemens Power TG (1.0.0)

NRC Emergency Response

PI to NRCERDS

SAFER Weather Station (1.0)

Thermotron 8800 Controller (1.0)

TBD

Clients:

- PI ProcessBook 3.2 - September 2009 (AF relative displays)
- PI WebParts 3.0 - 4Q 2009 (64-bit)

Server:

- PI AF 2.1 - August 2009 (64-bit, HA) *Released*
- PI Notifications 1.1 - September 2009 (OCS, Templates)
- PI Server 3.4.380 - September 2009 (Security)
- PI Data Services - December 2009 (64-bit)



Thank you

© Copyright 2009 OSIsoft, Inc.

777 Davis St., Suite 250 San Leandro, CA 94577