



Regional Seminar Series Kirkland, WA



PI System Roadmap

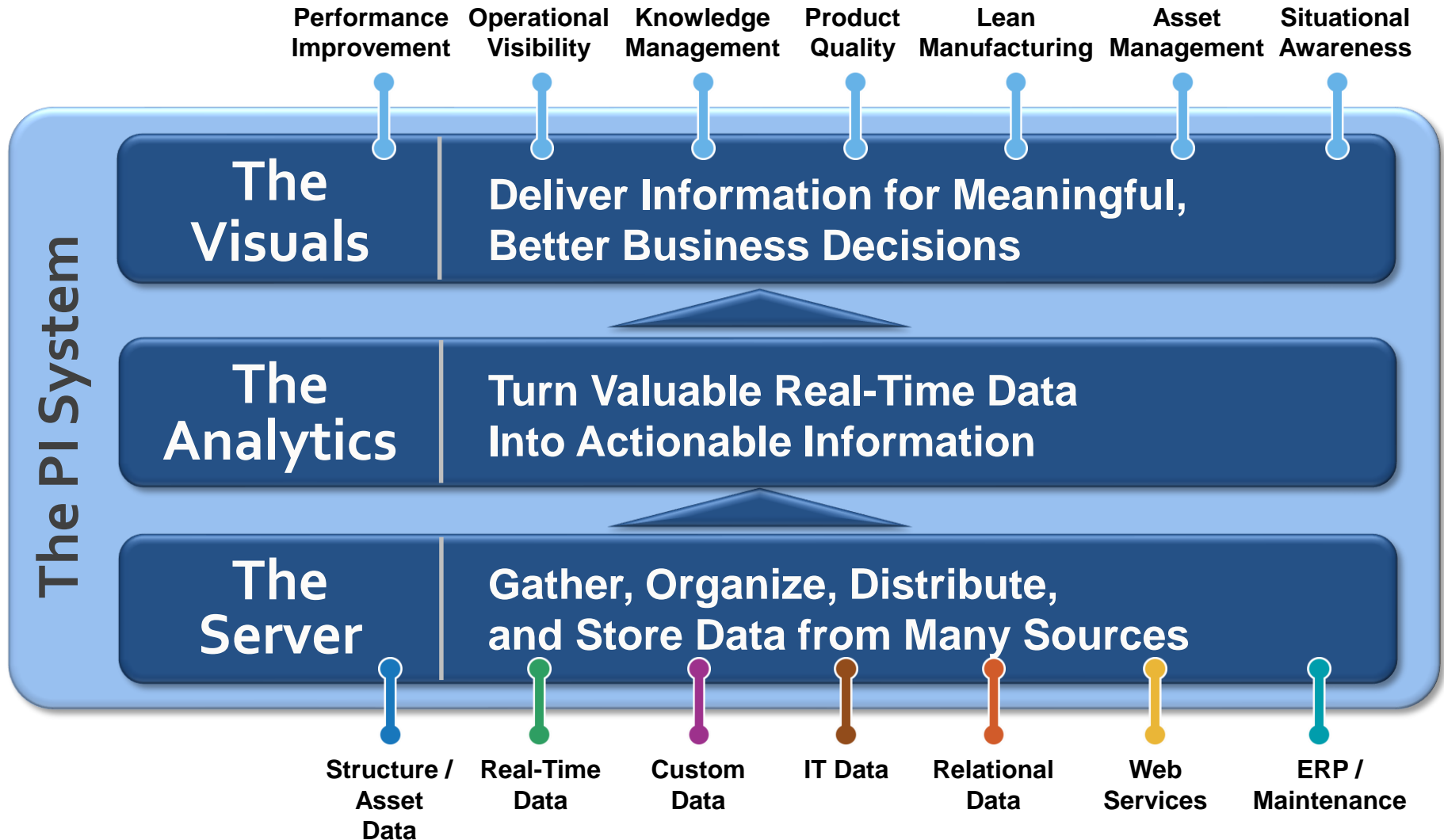
Jay Lakumb
Product Manager
OSIsoft, LLC

November 10, 2009

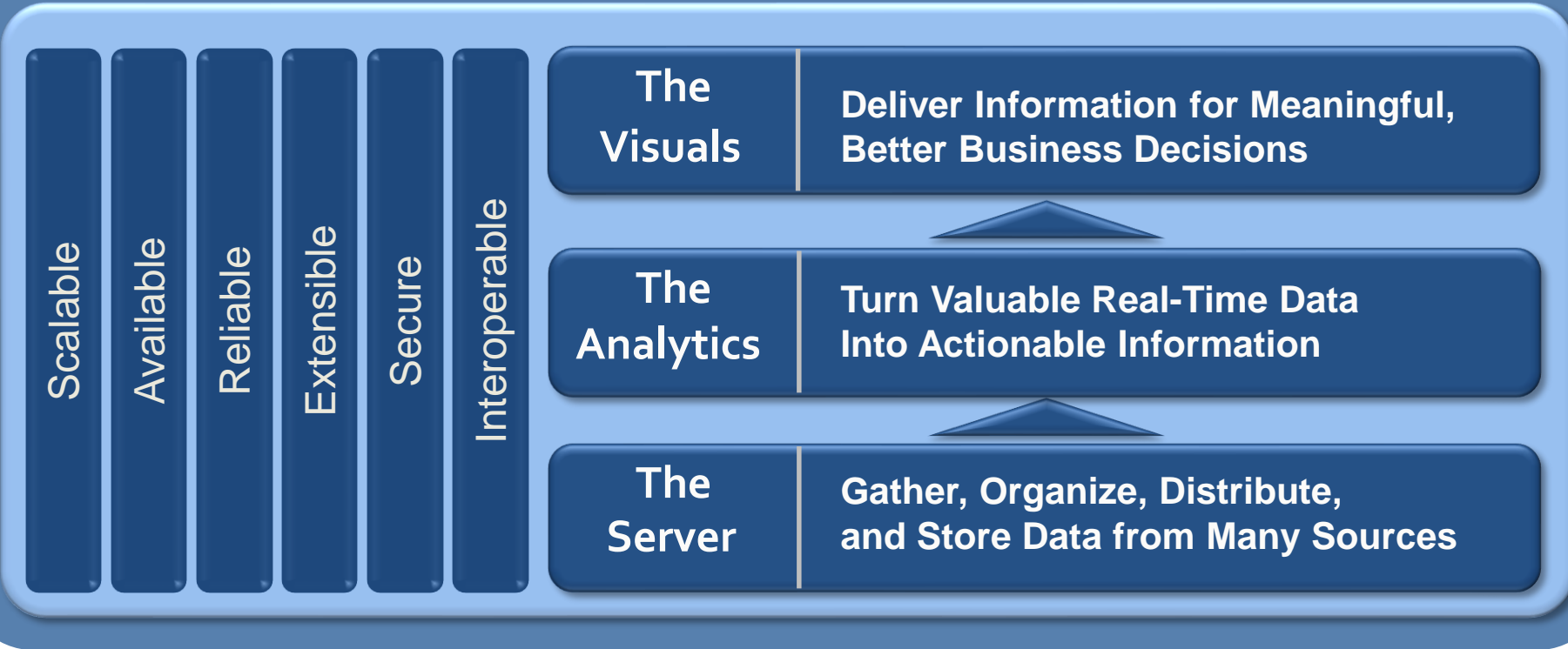
Empowering Business in Real Time.

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Functional Groups of The PI System



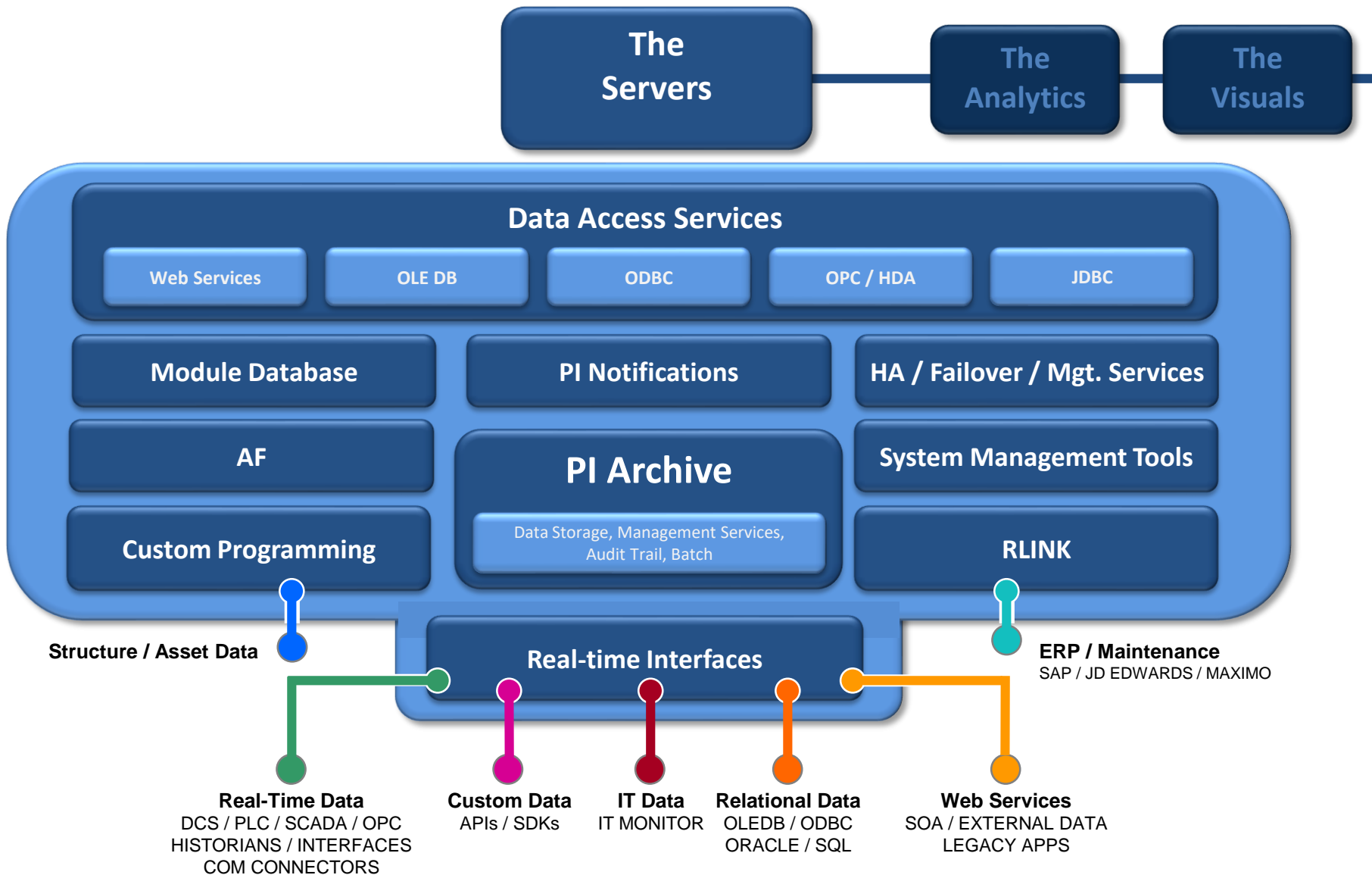
Cross Functional Aspects of the PI System



- Security
- Scalability
 - 64-bit Support
- High Availability
- Establish Single Data Context Model - AF
- Usability / Productivity Improvements

The Servers





3 concurrent releases for 3 themes

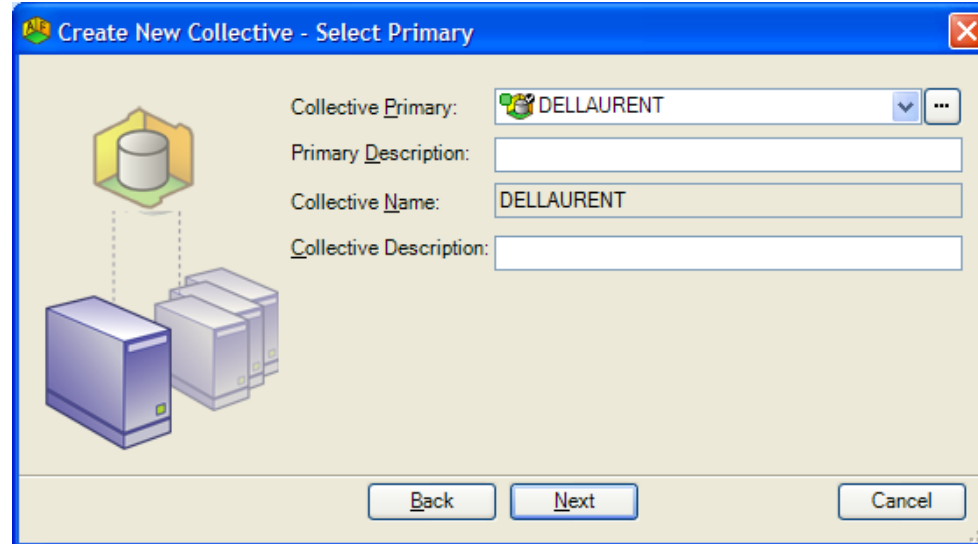


- Releases
 - PI Server 3.4.380 with Windows Integrated Security
 - Released September 21, 2009
 - PI AF 2.1
 - Released September 1, 2009
 - PI Notifications 1.1
 - Released September 30, 2009
- Integration with Windows Security
- High Availability
- More Scalability and Manageability

- PI AF 2.x uses Windows Security since the first release
- The PI Server can leverage Windows authentication mechanism
- PI Notifications leverages both PI AF and the PI Server security



- The PI Server has been HA for almost 3 years (1Q 2007)
- PI Notifications has been HA since initial release (1Q 2008)
- PI AF 2.1 is now Highly Available (3Q 2009)



- Better performance, scalability and throughput for the PI Server, PI AF and PI Notifications
- Support for 64-bit
 - Native support for the PI Server and PI AF on 64-bit
 - PI Notifications tested as 32-bit running on 64-bit
- New PI SMT plug-ins to manage the new security model
- Improved manageability for PI Notifications leveraging PI AF Notifications templates



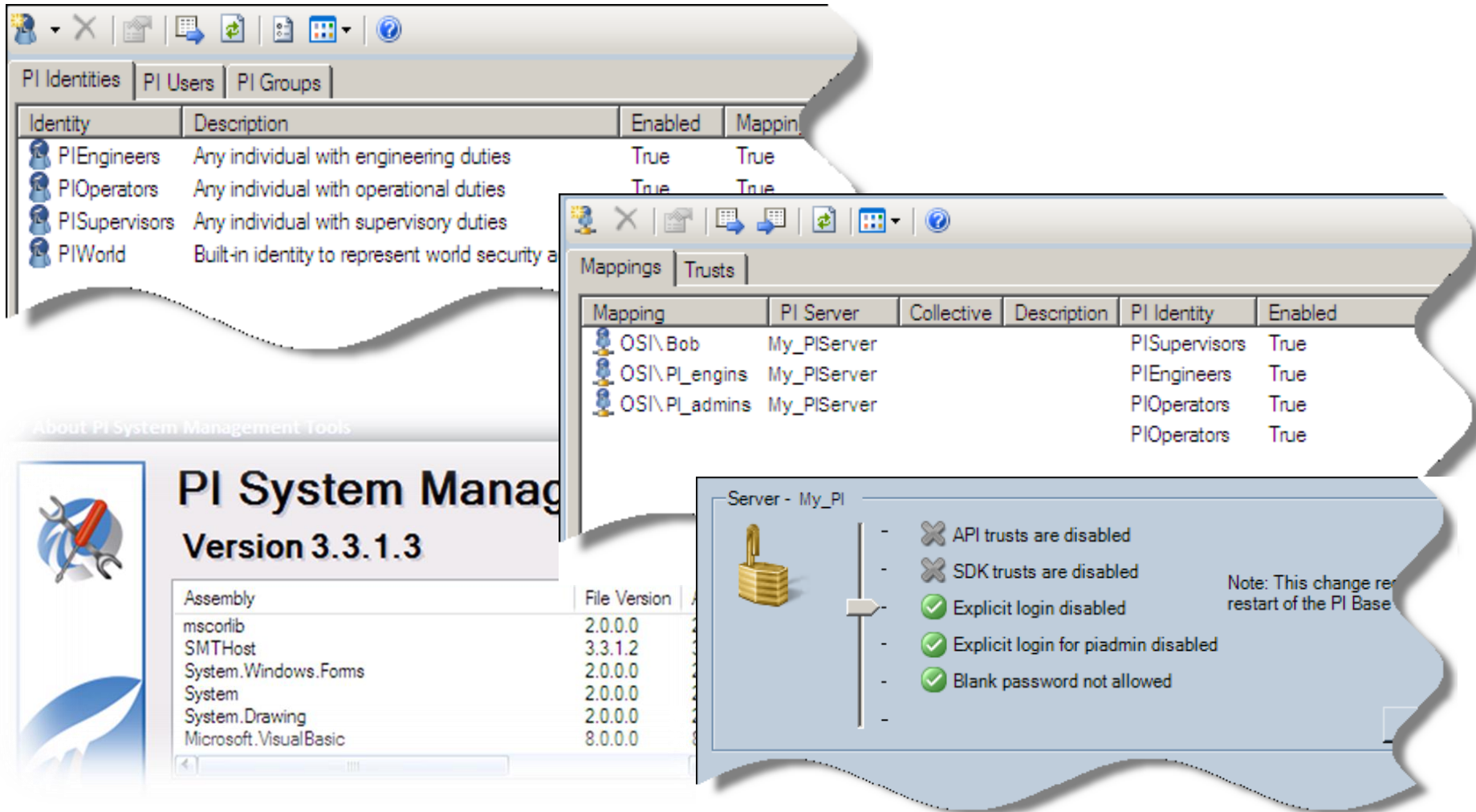
PI Server 3.4.380 Windows Security



Technical Overview and
Value proposition

- True Single Sign-On (SSO)
- Easier to Manage
 - User Accounts in Windows/Active Directory (AD) Only
 - Leverage AD Tools and Security Policies
- Upgrade Experience
 - Backward Compatibility
 - Simply Requires PI SDK 1.3.6





The screenshot displays the PI System Management Tools interface, which is used for configuring user identities and mappings. It includes a main window with tabs for 'PI Identities', 'PI Users', and 'PI Groups', and a secondary window for 'Mappings' and 'Trusts'.

PI Identities Window:

Identity	Description	Enabled	Mappin
PIEngineers	Any individual with engineering duties	True	True
PIOperators	Any individual with operational duties	True	True
PISupervisors	Any individual with supervisory duties		
PIWorld	Built-in identity to represent world security a		

Mappings Window:

Mapping	PI Server	Collective	Description	PI Identity	Enabled
OSI\Bob	My_PIServer			PISupervisors	True
OSI\PI_engins	My_PIServer			PIEngineers	True
OSI\PI_admins	My_PIServer			PIOperators	True
				PIOperators	True

Server - My_PI Settings:

- API trusts are disabled
- SDK trusts are disabled
- Explicit login disabled
- Explicit login for piadmin disabled
- Blank password not allowed

Note: This change requires a restart of the PI Base.

PI System Management Tools Version 3.3.1.3

Assembly	File Version
mscorlib	2.0.0.0
SMTHost	3.3.1.2
System.Windows.Forms	2.0.0.0
System	2.0.0.0
System.Drawing	2.0.0.0
Microsoft.VisualBasic	8.0.0.0

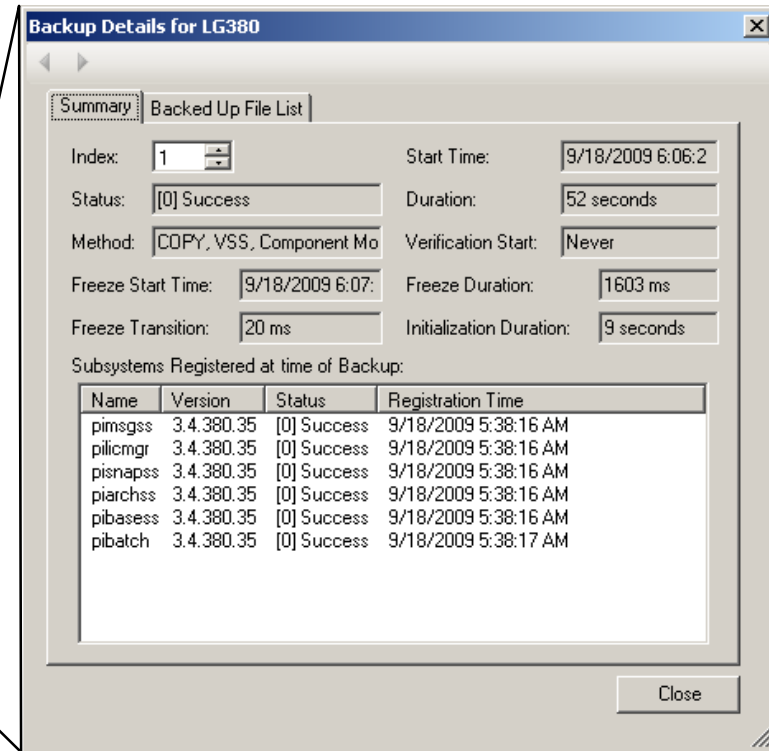
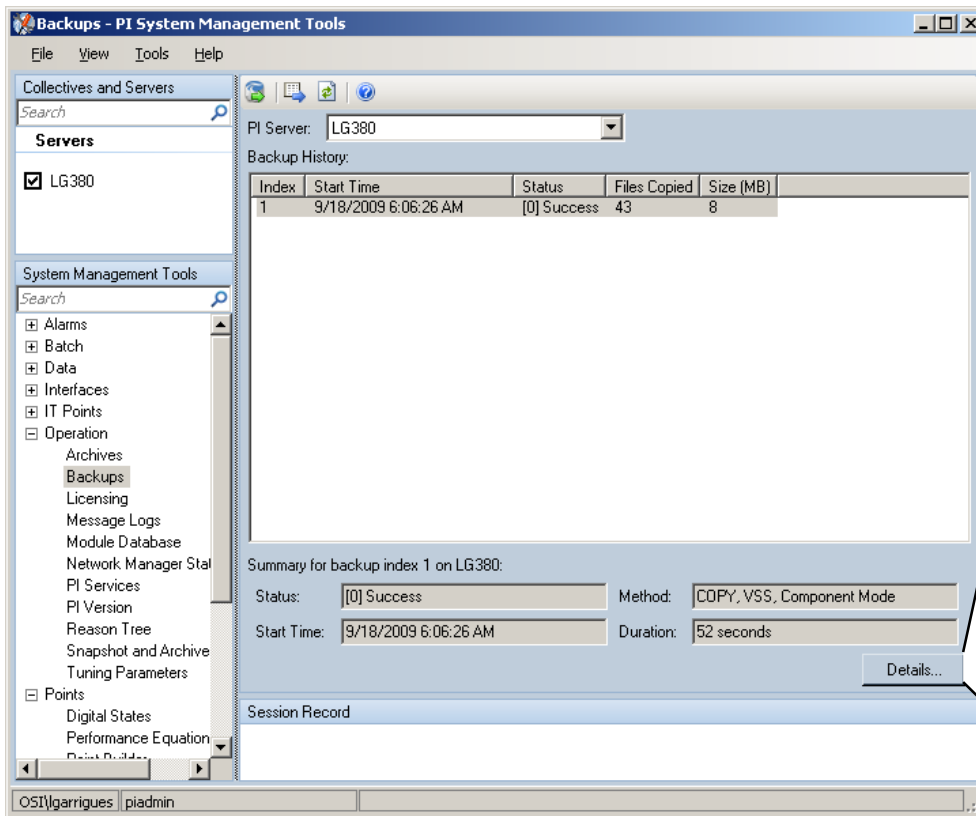
Unlimited Access Control Lists (ACLs)



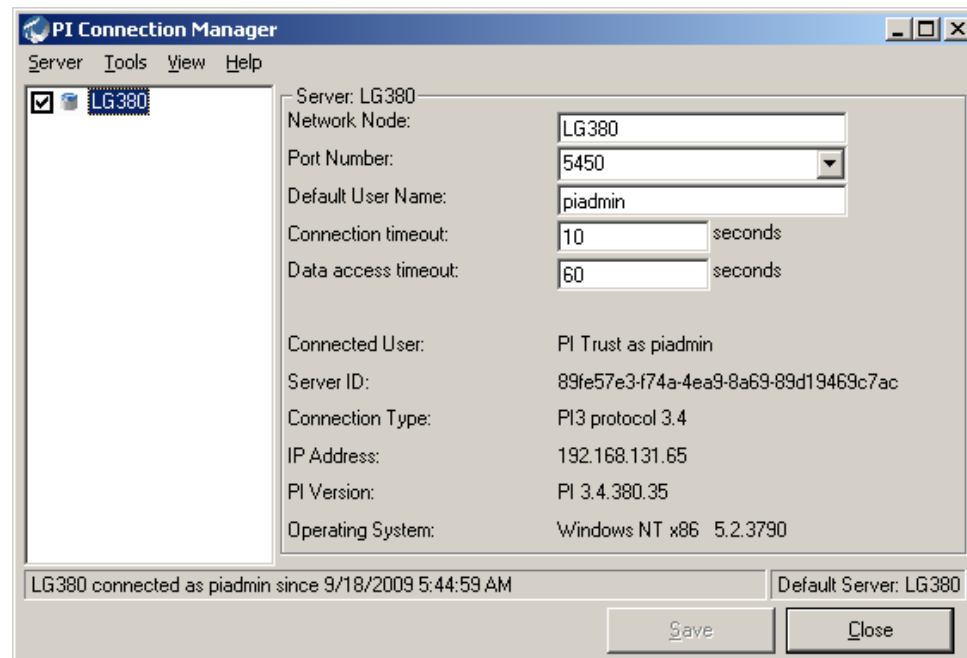
The screenshot displays the 'sinusoid - Point Builder - PI System Management Tools' interface. The main window shows a tree view on the left with 'Security' expanded to 'Identities, Users, & Groups'. The main pane is divided into 'Point Security' and 'Data Security' sections. A callout box highlights the ACL string for 'Point Security': `piadmin: A(r,w) | piadmins: A(r,w) | PEngineers: A(r) | PIWorld: A(r)`. The 'Data Security' section shows a similar ACL string. A 'Select' dialog box is open, showing a list of users from server LG380. The 'PIOperators' user is selected in the list.

Name	Description
piadmin	The administrative PI User with unrestricted access
piadmins	The administrative PI Group formerly named "piadmin"
pidemo	The generic PI User
PIEngineers	Any individual with engineering duties
PIOperators	Any individual with operational duties
PISupervisors	Any individual with supervisory duties
piusers	The generic PI Group formerly named "piuser"

- Added support for incremental backups, verified backups, and a full backup history



- Clients apps only need to upgrade the PI SDK 1.3.6 (released Q3 2008) to take advantage of the new Security Model
- Most clients, like PI ProcessBook 3.x, PI WebParts 2.x, and PI DataLink 4.x are already shipping with the PI SDK 1.3.6

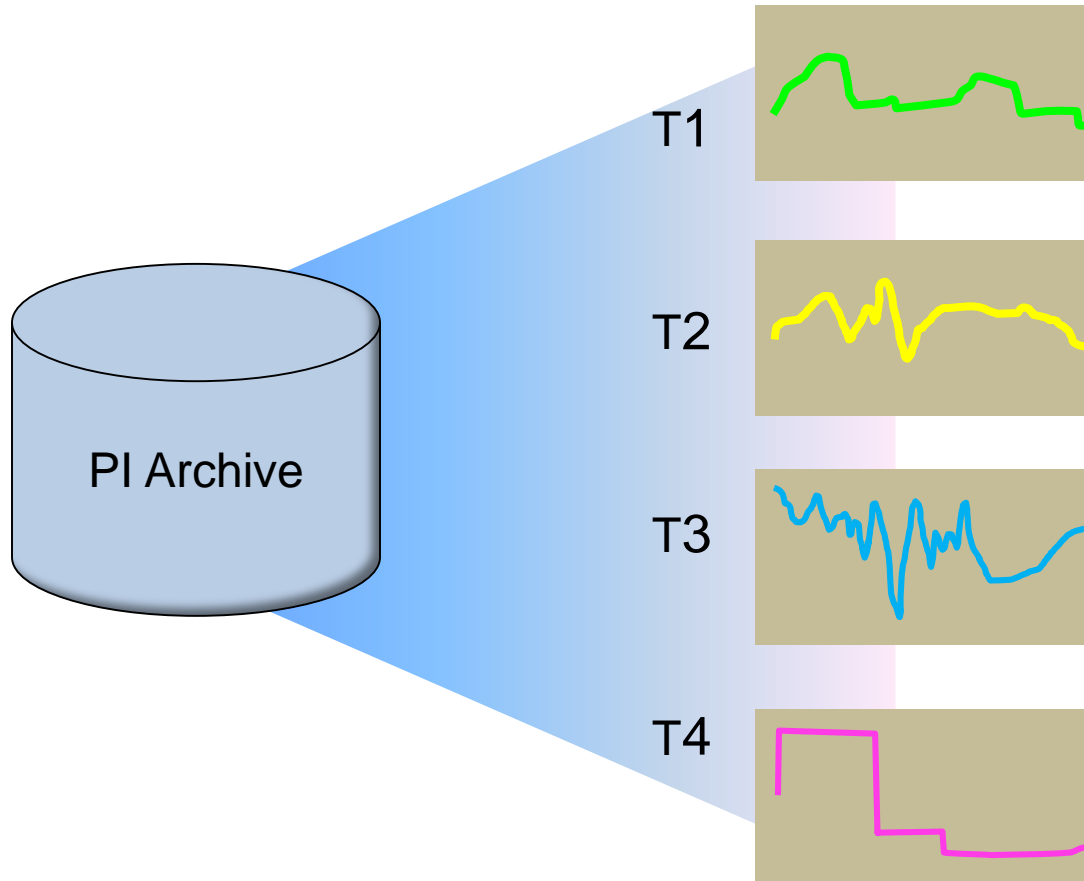


PI AF 2.1

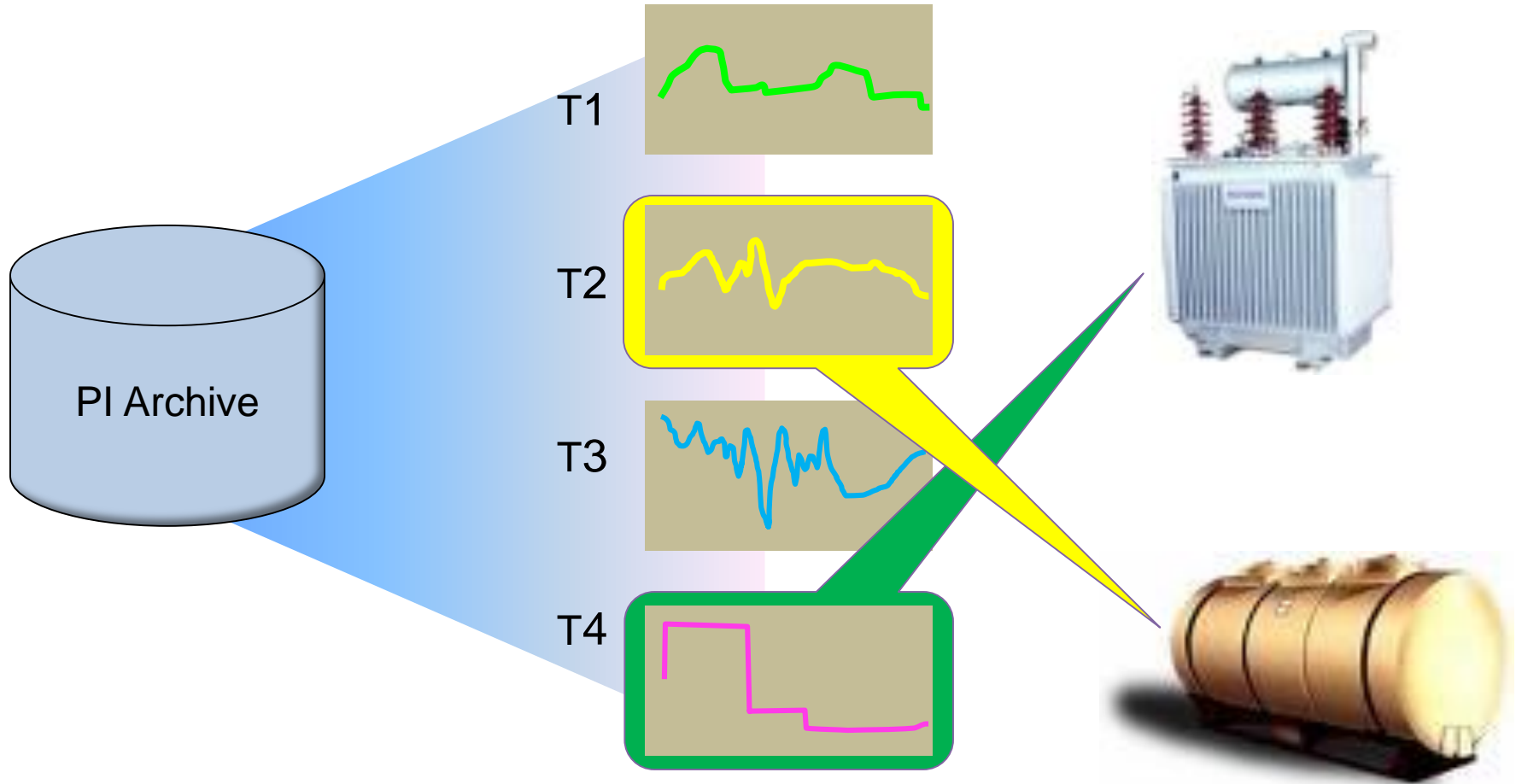


Technical Overview and Value proposition

PI is about time series data ... and tags!



But Tags mostly relate to Assets





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

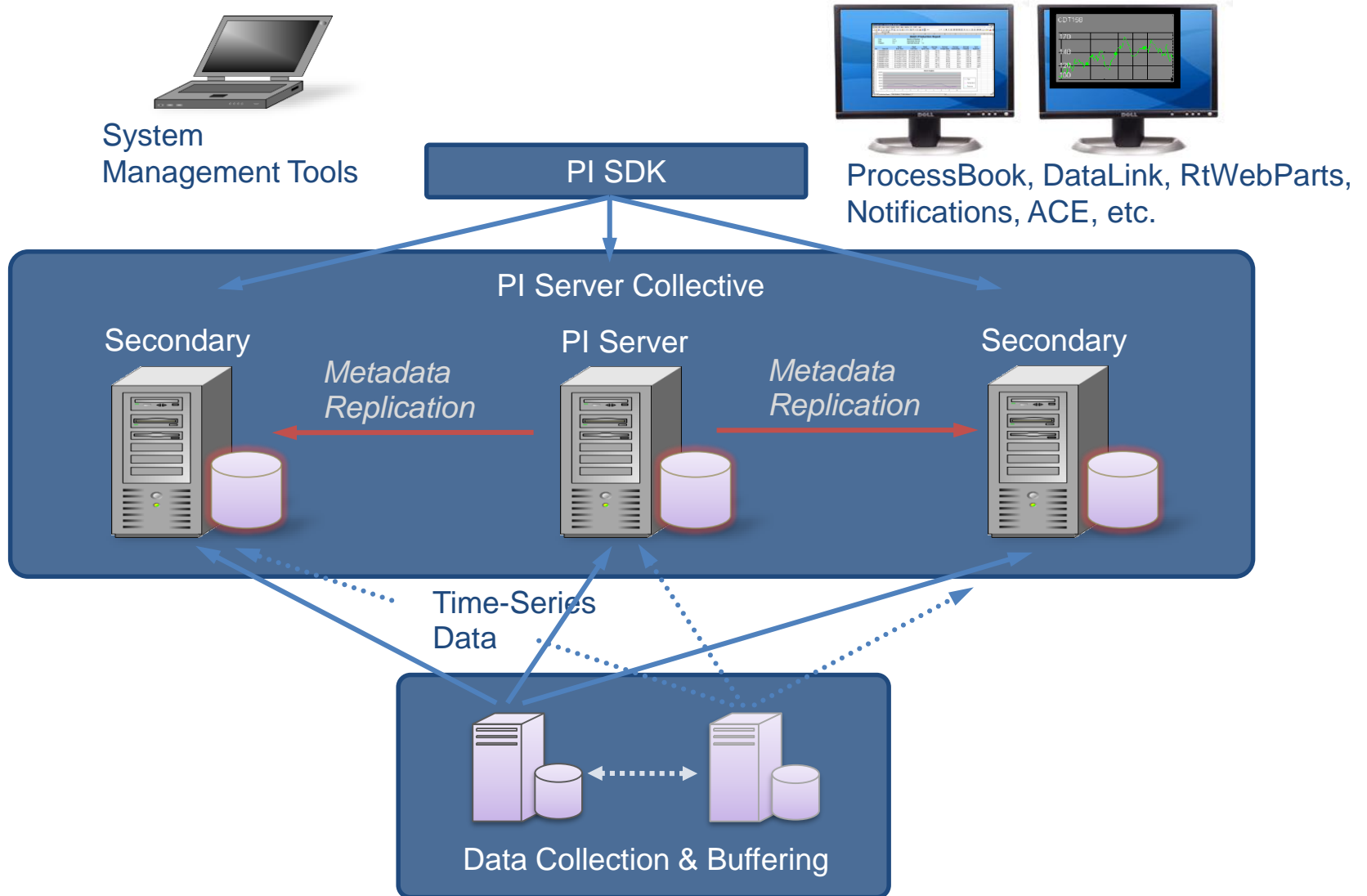
- Microsoft, HP, Cornell

High Availability

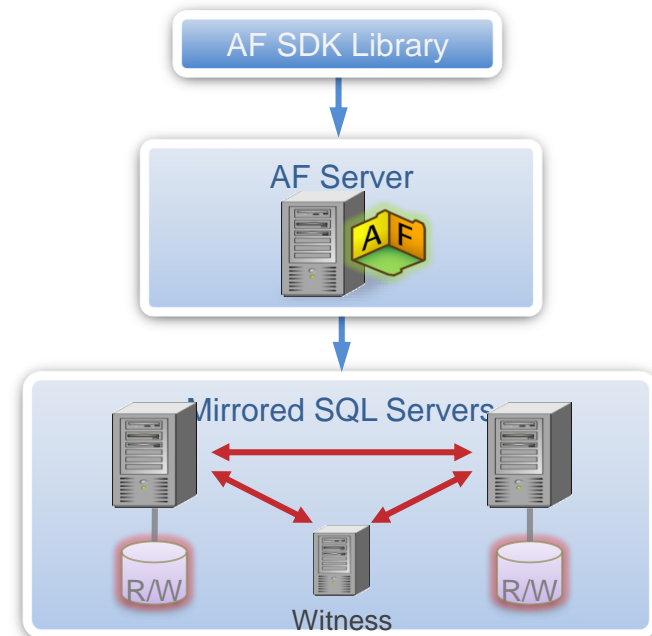
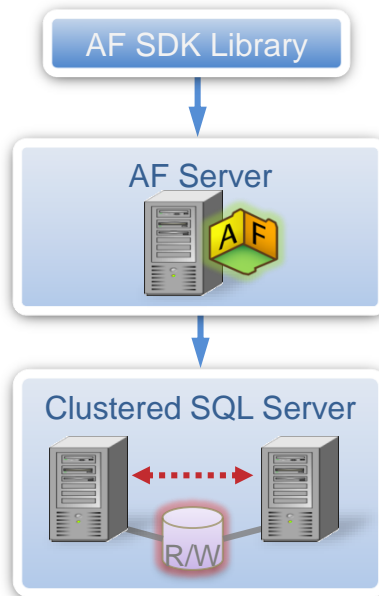


- Network Failure
- Administrative/User Failure
- Upgrades and Migrations
 - Hardware
 - Operating System Software (Patches)
 - Applications Software

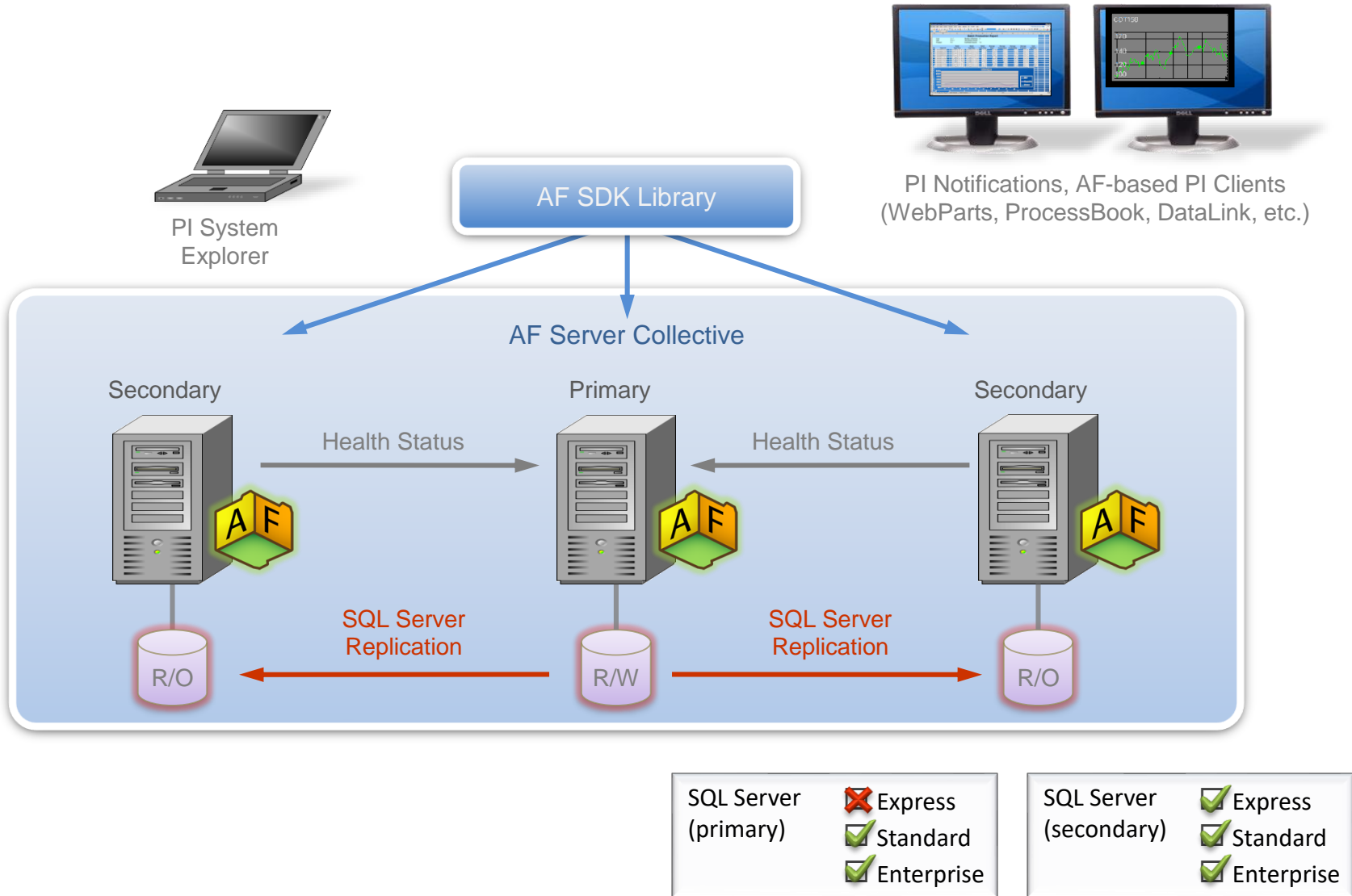
High Availability for PI Server



- Support for Clustering, Mirroring, and Replication (HA)
- Conceptually very similar to HA for the PI Server
 - Automatic Failover for clients
 - SQL replication for the AF database

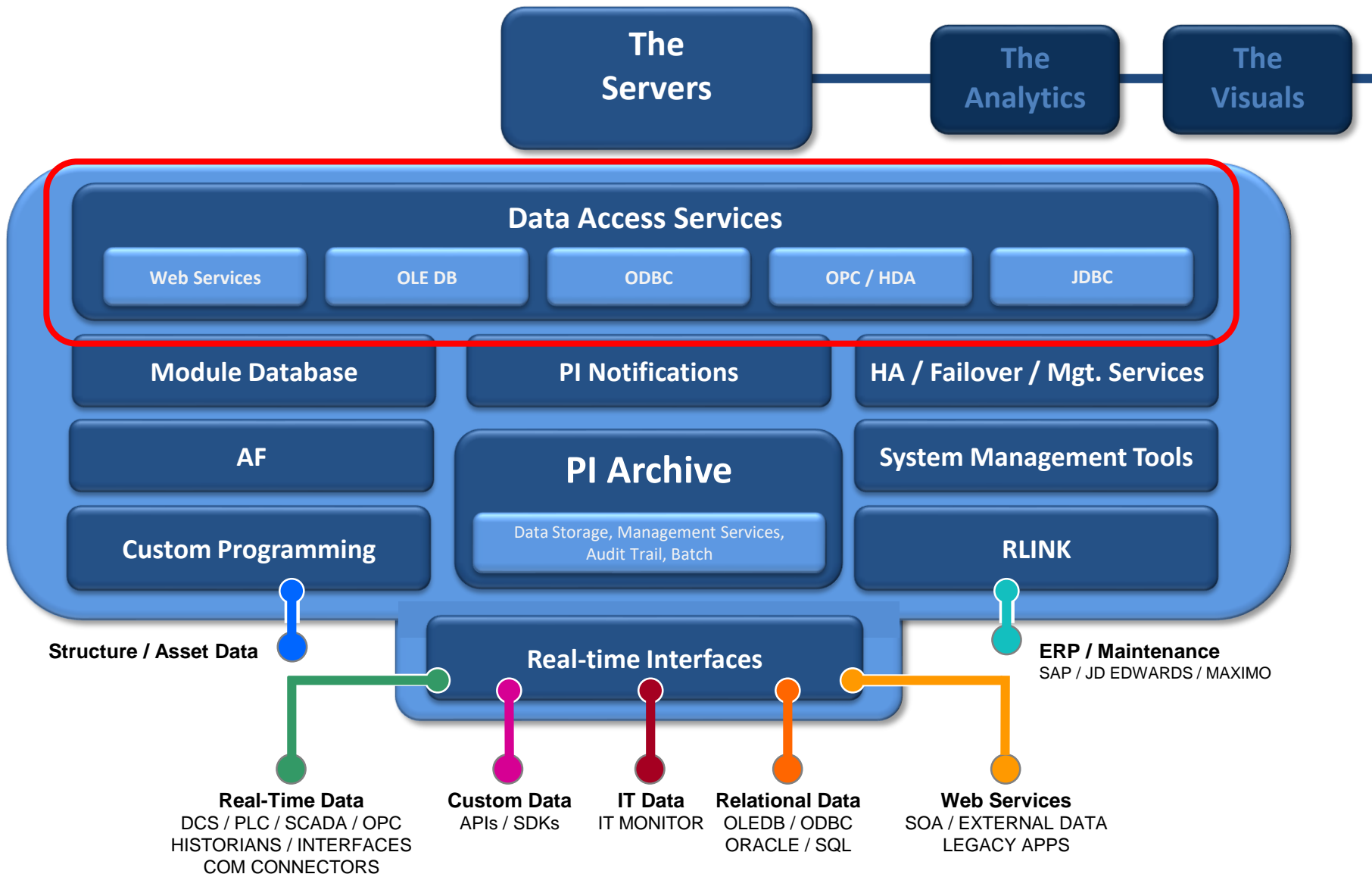


High Availability for AF Server



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 JDBC Driver (*available on OSIsoft vCampus*)
 - PI ODBC Client
 - 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

- 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 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 the PI systems
- **Support virtually any custom application in any programming language on any platform!**

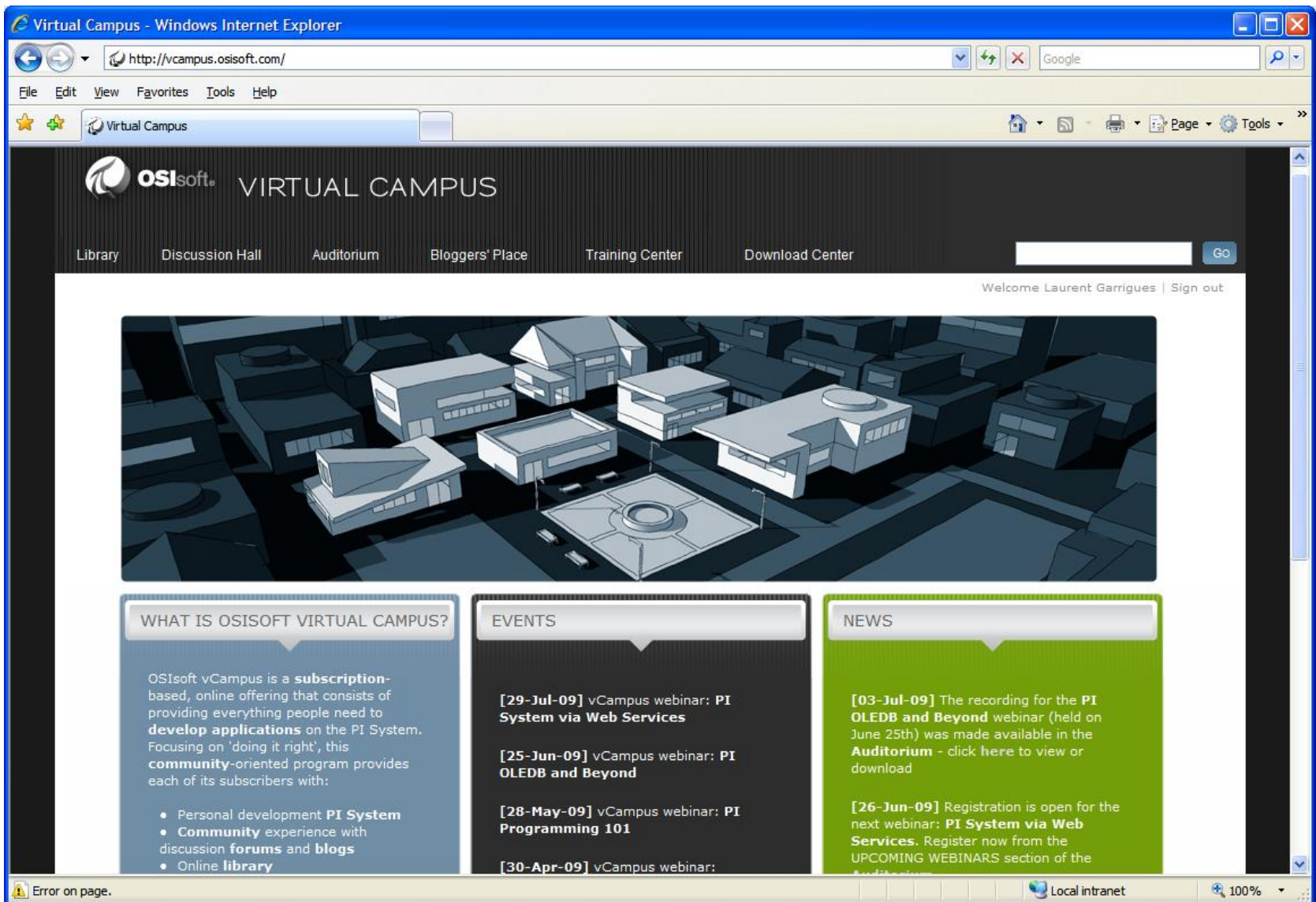
- **PI Data Services (Baseline Services) (Q4 2009)**
 - Includes both 32-bit and 64-bit providers
- **PI Web Services Technical Preview (*Released*)**
 - OSIsoft vCampus online, hosted environment
- **PI OLEDB 3.3 (*Released*)**
 - Includes both 32-bit and 64-bit providers
- **PI OLEDB 4.0 (1Q 2010)**
 - Support for entire PI system, both PI Tags and AF Elements
- **PI JDBC 1.0 (*Released*)**
 - JDBC-OLEDB Bridge for Windows and Linux, OSIsoft vCampus

- **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)***
 - Includes 64-bit provider
- **AF SDK 2.1 *(Released)***
 - Includes both 32-bit and 64-bit providers
- **PI SDK 1.4.0 (1Q 2010)**
 - Client-side buffering for manually entered data, ACE calculations writing to PI, and custom SDK-based interfaces

OSIsoft vCampus



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



The screenshot shows a Windows Internet Explorer browser window displaying the vCampus website. The address bar shows the URL <http://vcampus.osisoft.com/>. The website header features the OSIsoft logo and the text "VIRTUAL CAMPUS". Below the header is a navigation menu with links for "Library", "Discussion Hall", "Auditorium", "Bloggers' Place", "Training Center", and "Download Center". A search bar with a "Go" button is also present. The main content area includes a large 3D architectural rendering of a campus. Below the rendering are three columns of content: "WHAT IS OSISOFT VIRTUAL CAMPUS?", "EVENTS", and "NEWS".

WHAT IS OSISOFT VIRTUAL CAMPUS?

OSIsoft vCampus is a **subscription**-based, online offering that consists of providing everything people need to **develop applications** on the PI System. Focusing on 'doing it right', this **community**-oriented program provides each of its subscribers with:

- Personal development **PI System**
- **Community** experience with discussion **forums** and **blogs**
- Online **library**

EVENTS

- [29-Jul-09] vCampus webinar: **PI System via Web Services**
- [25-Jun-09] vCampus webinar: **PI OLEDB and Beyond**
- [28-May-09] vCampus webinar: **PI Programming 101**
- [30-Apr-09] vCampus webinar:

NEWS

- [03-Jul-09] The recording for the **PI OLEDB and Beyond** webinar (held on June 25th) was made available in the **Auditorium** - [click here to view or download](#)
- [26-Jun-09] Registration is open for the next webinar: **PI System via Web Services**. Register now from the **UPCOMING WEBINARS** section of the **Auditorium**.

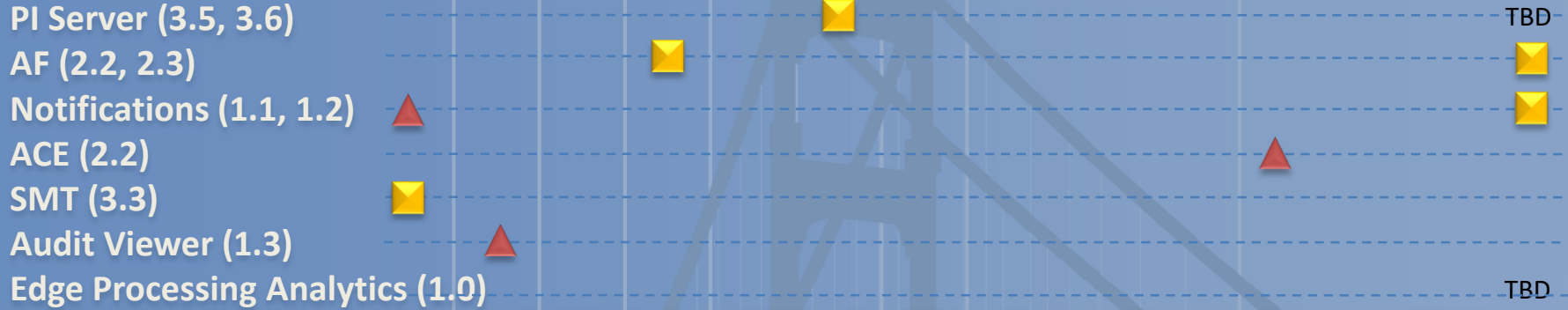
At the bottom of the browser window, there is an "Error on page." message on the left and "Local intranet" and "100%" zoom level on the right.

OSisoft Product Roadmap

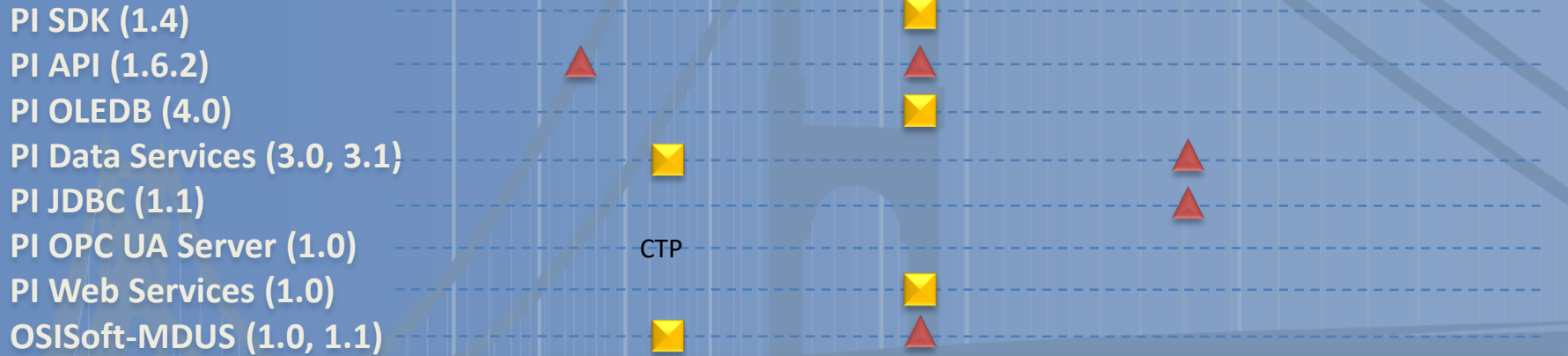
- Major Release
- Minor Release

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

Server

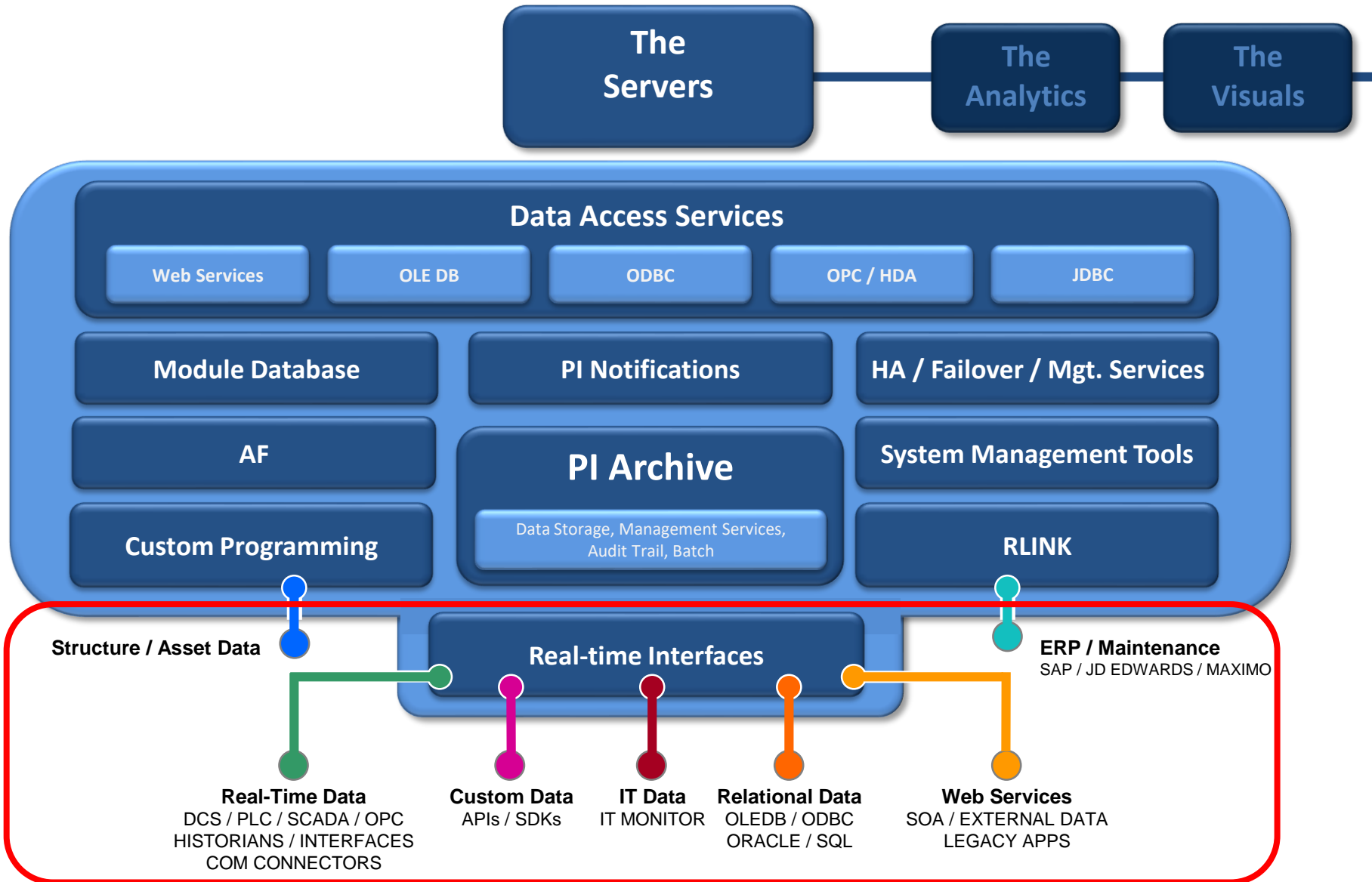


Data Access



PI Interfaces





OSIsoft Product Roadmap – Interfaces

- Major Release
- Minor Release

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

General Interfaces

AutoPointSync (1.2.6)

TBD

PI UFL (3.2.0)



RDBMS (3.17.0)



WITSML (1.0)



IT Monitor



ICU (1.5.0)

TBD

OPC Interfaces

PI OPC UA Interface (1.0)

TBD

PI OPC Interface / DA (2.4.0)

TBD

Batch Interfaces

ABB 800xA (1.0)



Siemens Simatic PCS7 (1.0)



Wonderware InBatch (1.0)



Power Meter Interfaces

Elster (1.0)



Tiilliant Unity (1.0)



Grid Net PolicyNet (1.0)



Silver Springs Network UtilityIQ (1.0)



PI Analytics



The
Server

The
Analytics

The
Visuals

Advanced Computing Engine (ACE)

PI Notifications

RtReports

Enterprise Services

PI Analytics

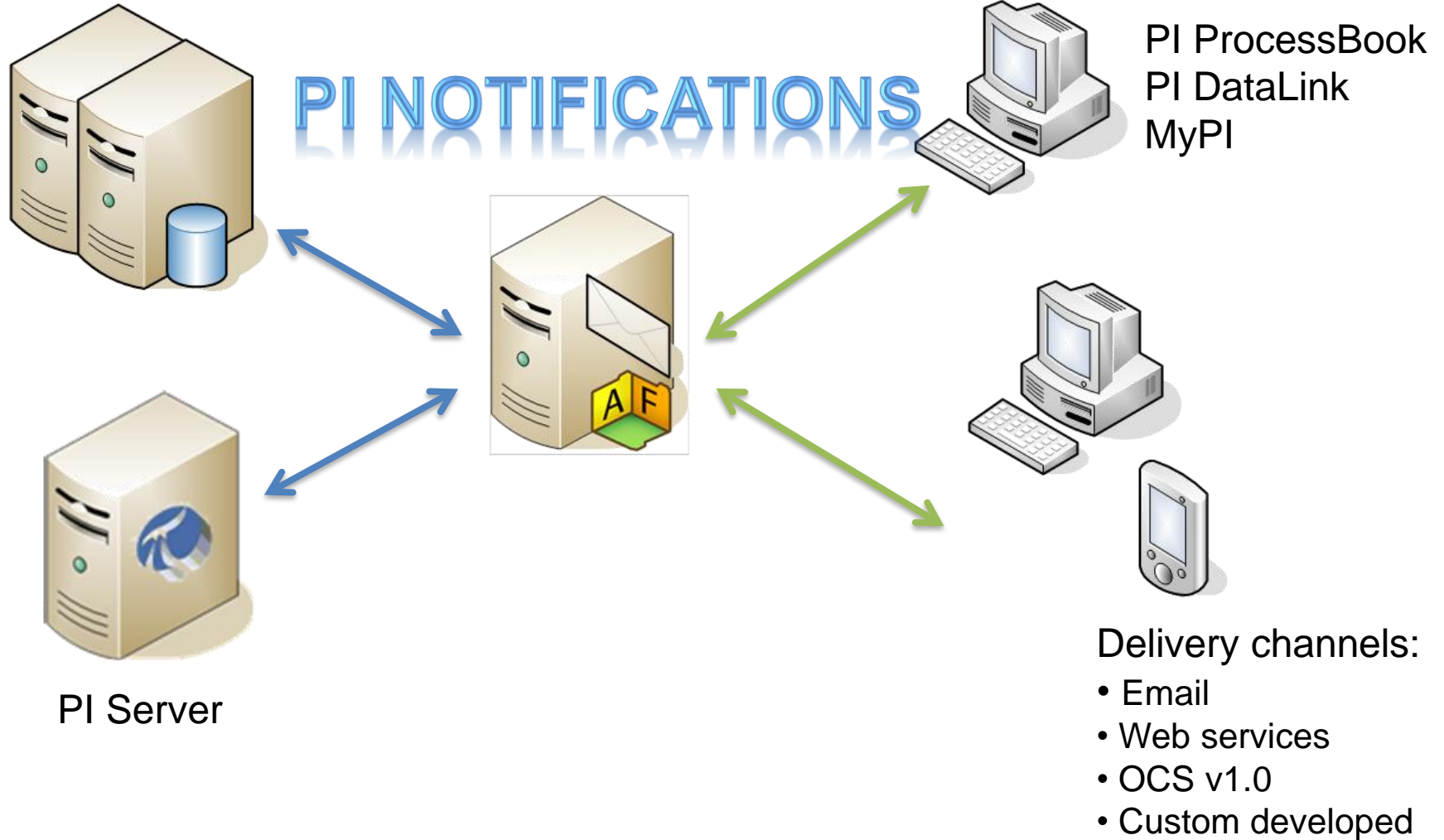
(PI Performance Equations, PI Totalizers, PI Alarms, PI RTSQC)

PI Notifications 1.1

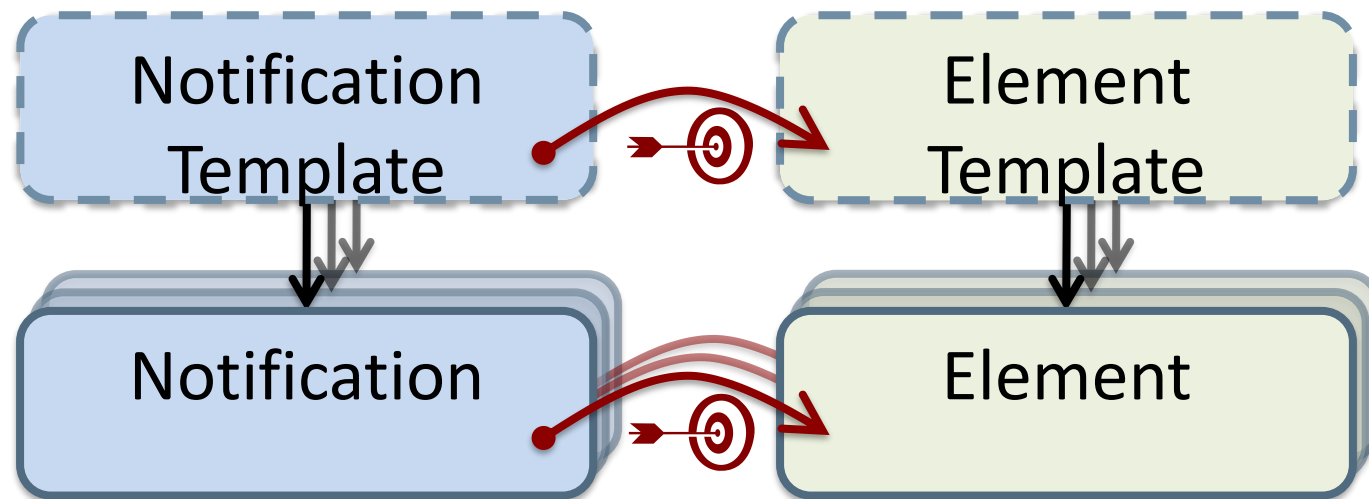


Technical Overview and Value proposition

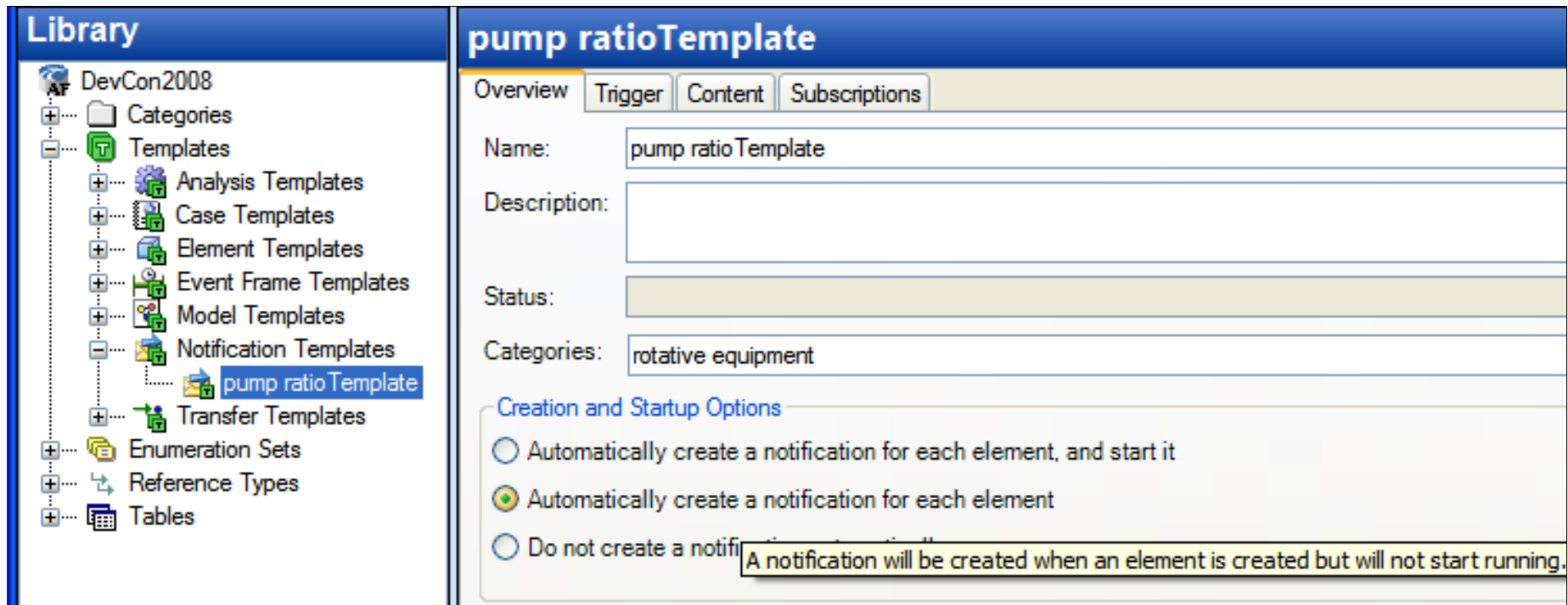
Others data sources



- Performance Improvements (start-up and retrieval)
- Can use Email service to send an SMS message (offered by most wireless providers)
- Notification Templates enable rapid and automatic creation of maintainable notifications



- Automate the creation and maintenance process



The screenshot displays the software's configuration interface. On the left, a 'Library' tree shows a hierarchy: DevCon2008 > Templates > Notification Templates > pump ratioTemplate. The 'pump ratioTemplate' configuration panel on the right has tabs for Overview, Trigger, Content, and Subscriptions. The 'Overview' tab is active, showing fields for Name (pump ratioTemplate), Description, Status, and Categories (rotative equipment). Under 'Creation and Startup Options', three radio buttons are present: 'Automatically create a notification for each element, and start it' (unselected), 'Automatically create a notification for each element' (selected), and 'Do not create a notification' (unselected). A tooltip box is visible over the selected option, containing the text: 'A notification will be created when an element is created but will not start running.'

- Native Office Communication Server 2007 R2 (OCS) delivery channel
 - Scheduled for release in Nov 2009
 - Support presence and Instant Messaging (IM)
 - Will ship as a new plug-in for PI Notifications 1.1
 - Applications available for major cell phones
 - Windows Mobile
 - BlackBerry
 - iPhone

The Visuals



The Visuals within the PI System



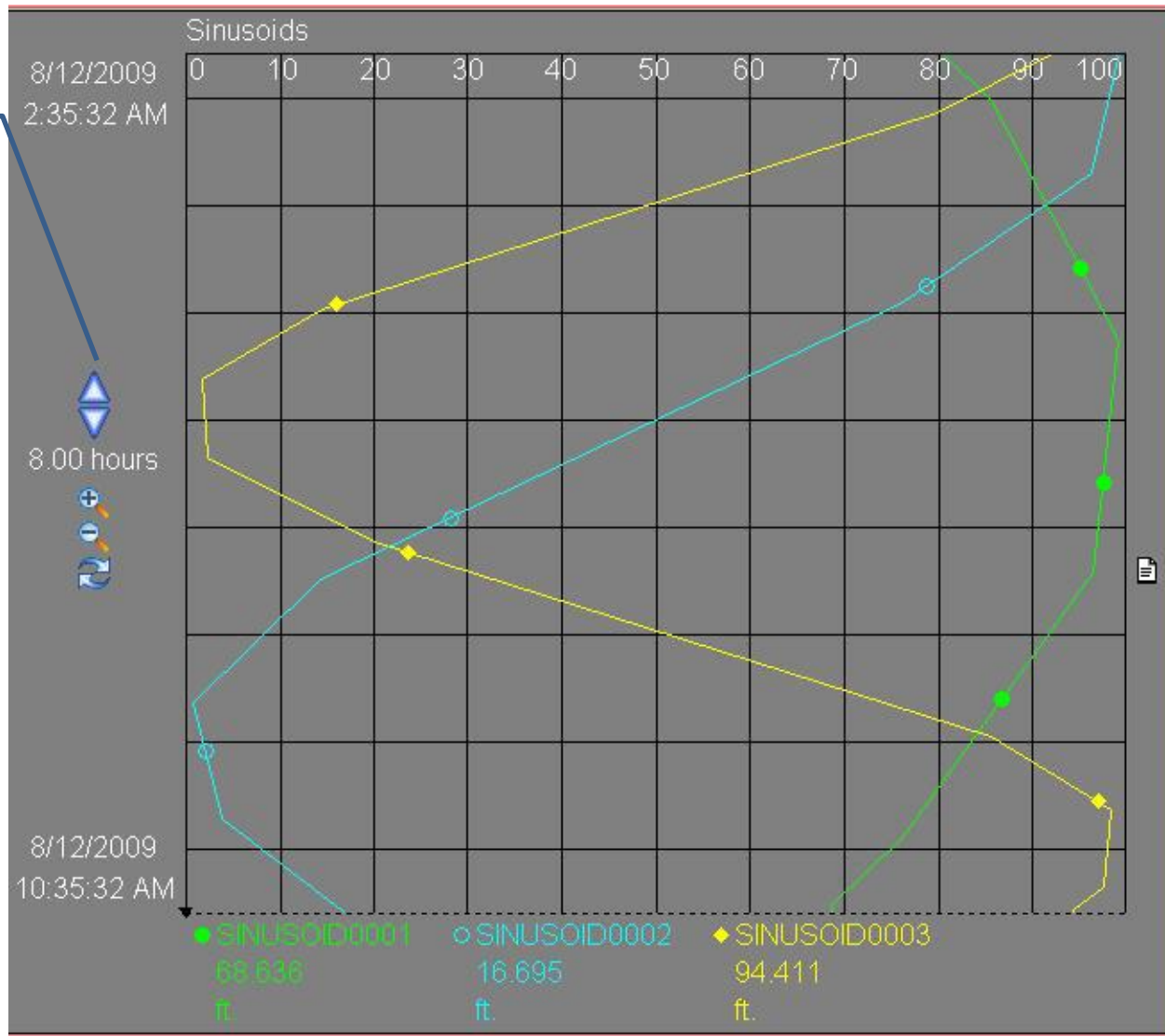
	Graphic Authoring	Analysis	Reporting	Manual Entry
PI ProcessBook				
PI DataLink				
PI WebParts / iViews for SAP				
PI DataLink for Excel Services				
PI ActiveView				
PI Manual Logger				

PI ProcessBook

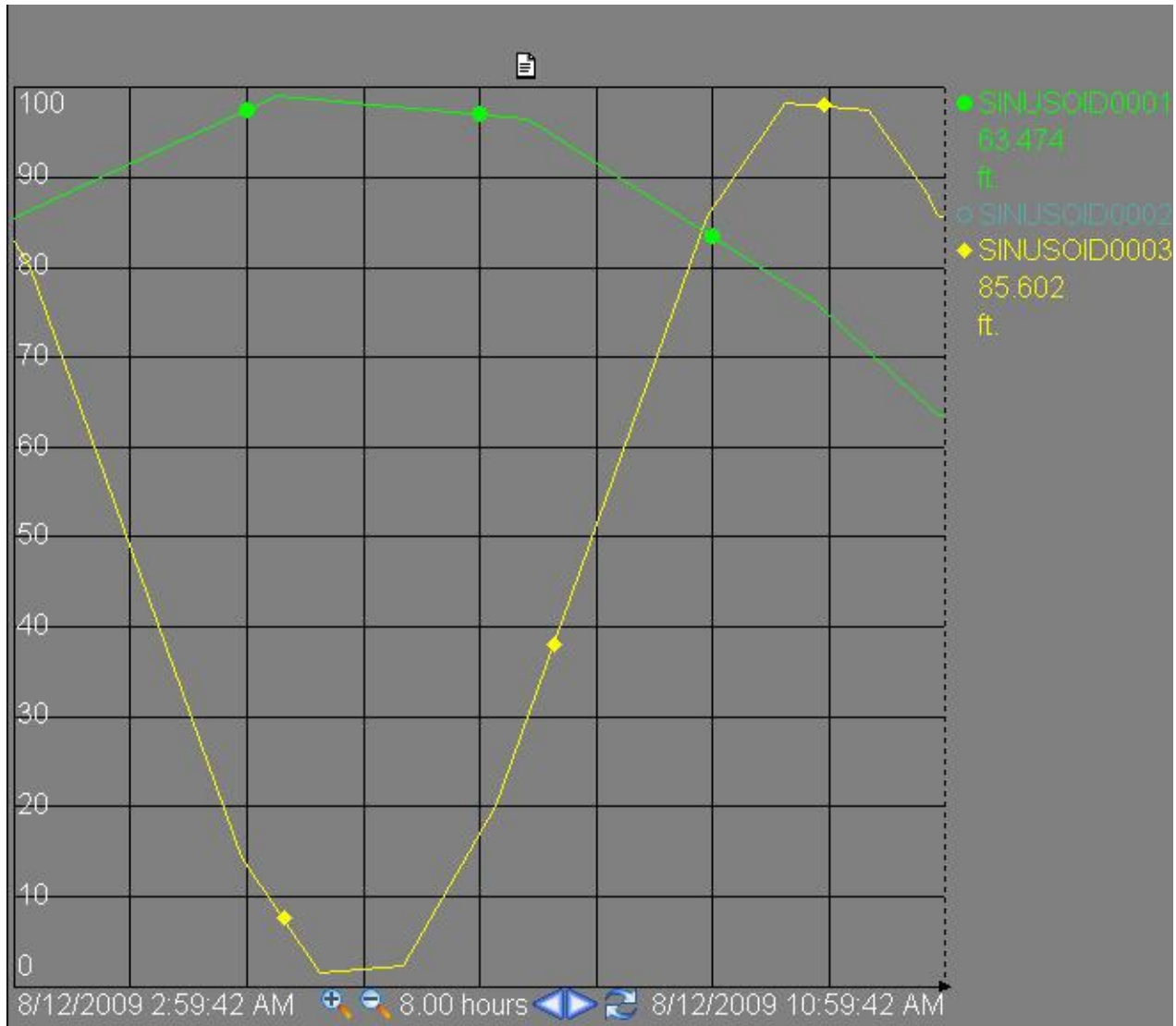


- Easier Symbol Formatting
- Vertical Trends available
- Quick Trend Zoom & Pan
- Data Details in a table
- Annotations on PI events
- Linear Regression Line on trends
- Tooltip Statistics on all dynamic symbols
- Drag and Drop symbol configuration

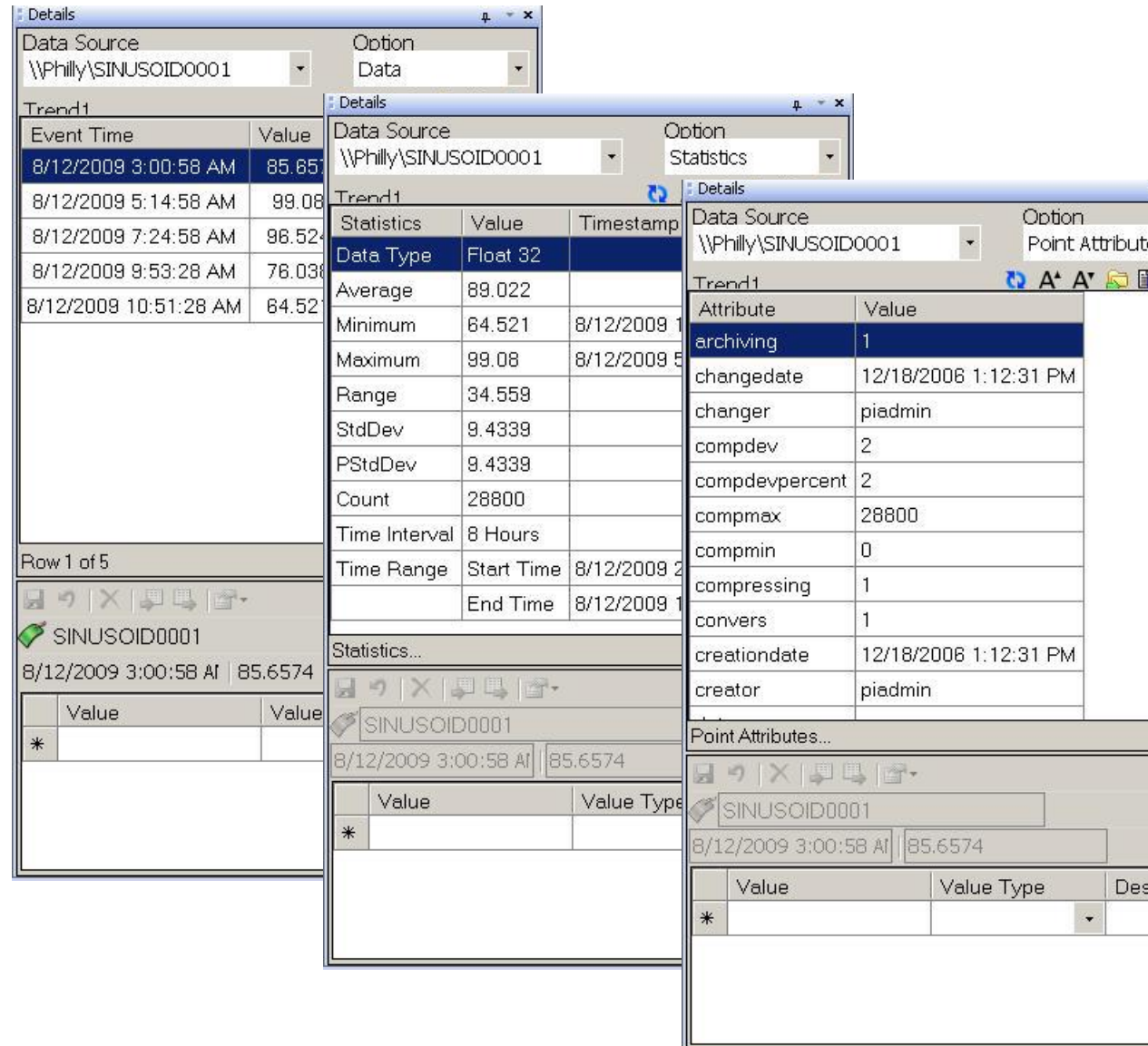
Scroll
Zoom
Revert



Hide/Show Individual Traces



- Data
- Statistics
- Point Attributes



The image displays three overlapping screenshots of the 'Details' pane in a software application, illustrating different views of data for a specific data source.

Top Left Screenshot (Data View):

- Data Source: \\Philly\SINUSOID0001
- Option: Data
- Trend1 Table:

Event Time	Value
8/12/2009 3:00:58 AM	85.6574
8/12/2009 5:14:58 AM	99.08
8/12/2009 7:24:58 AM	96.52
8/12/2009 8:53:28 AM	76.038
8/12/2009 10:51:28 AM	84.52

Top Middle Screenshot (Statistics View):

- Data Source: \\Philly\SINUSOID0001
- Option: Statistics
- Trend1 Table:

Statistics	Value	Timestamp
Data Type	Float 32	
Average	89.022	
Minimum	64.521	8/12/2009 1
Maximum	99.08	8/12/2009 5
Range	34.559	
StdDev	9.4339	
PStdDev	9.4339	
Count	28800	
Time Interval	8 Hours	
Time Range	Start Time: 8/12/2009 2, End Time: 8/12/2009 1	

Top Right Screenshot (Point Attributes View):

- Data Source: \\Philly\SINUSOID0001
- Option: Point Attributes
- Trend1 Table:

Attribute	Value
archiving	1
changedate	12/18/2008 1:12:31 PM
changer	piadmin
compdev	2
compdevpercent	2
compmax	28800
compmin	0
compressing	1
convers	1
creationdate	12/18/2008 1:12:31 PM
creator	piadmin

Bottom Left Screenshot (Data Detail View):

- Row 1 of 5
- SINUSOID0001
- 8/12/2009 3:00:58 AM | 85.6574
- Table:

Value	Value
*	

Bottom Middle Screenshot (Data Detail View):

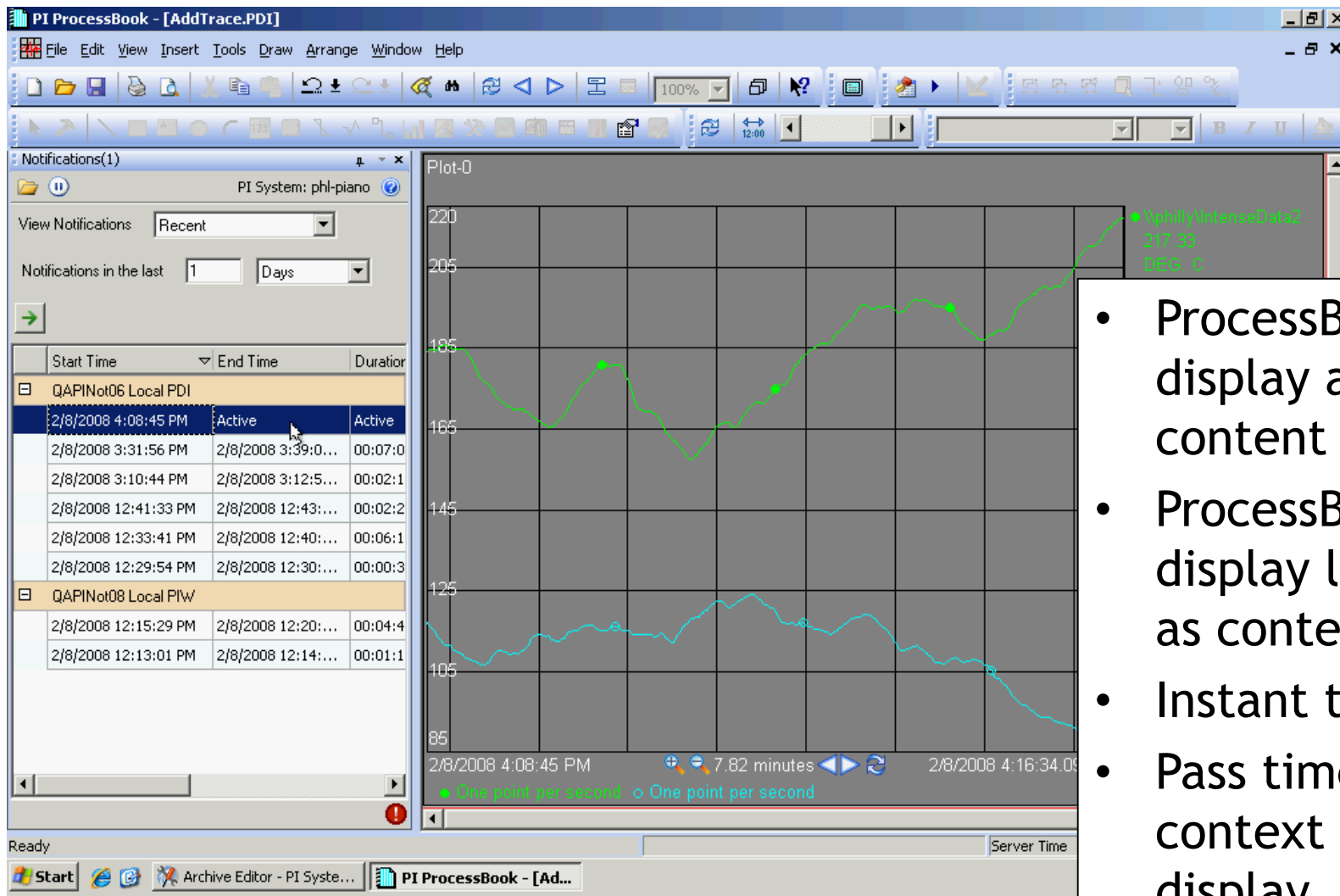
- SINUSOID0001
- 8/12/2009 3:00:58 AM | 85.6574
- Table:

Value	Value Type
*	

Bottom Right Screenshot (Data Detail View):

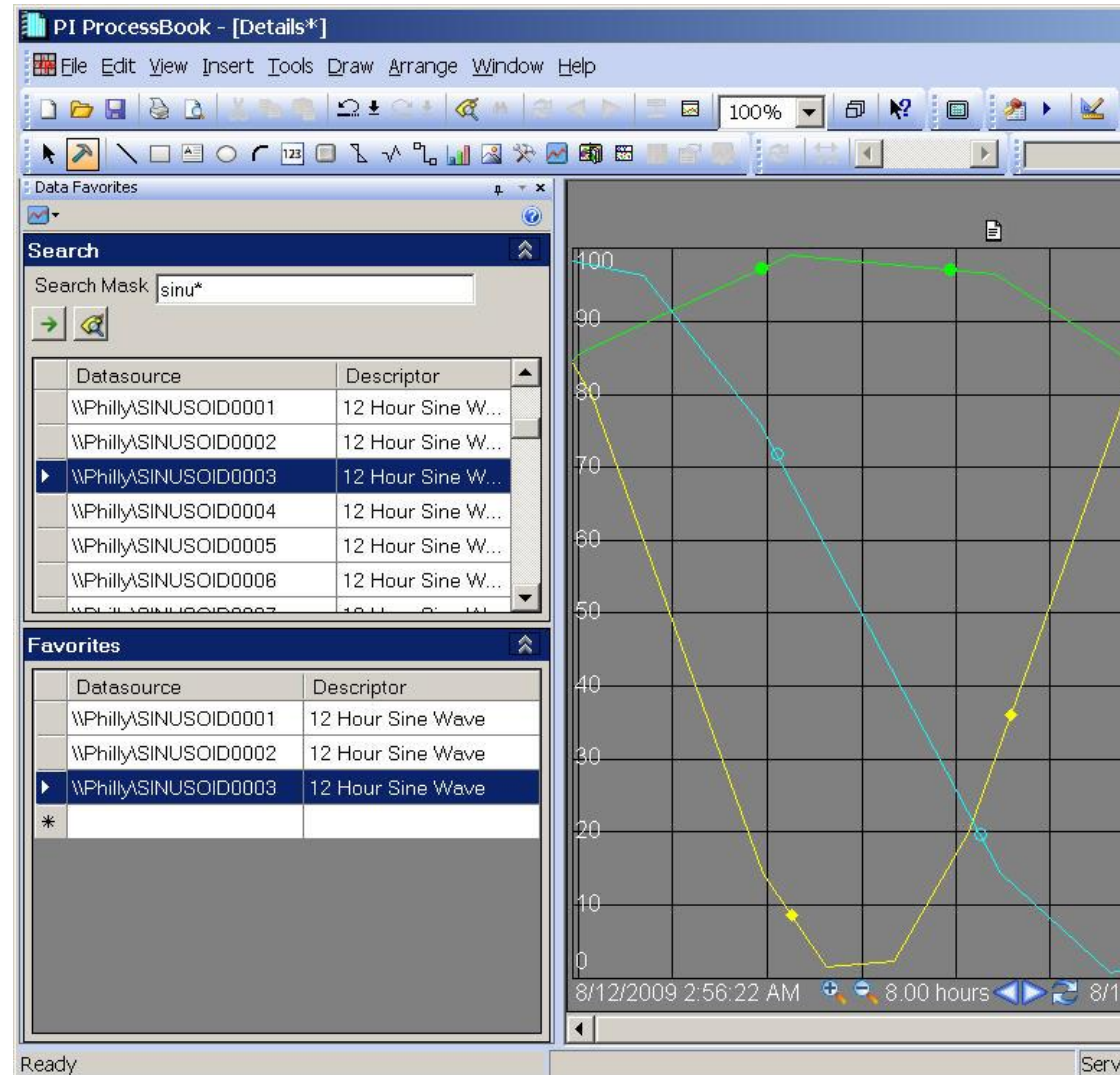
- SINUSOID0001
- 8/12/2009 3:00:58 AM | 85.6574
- Table:

Value	Value Type	Description
*		

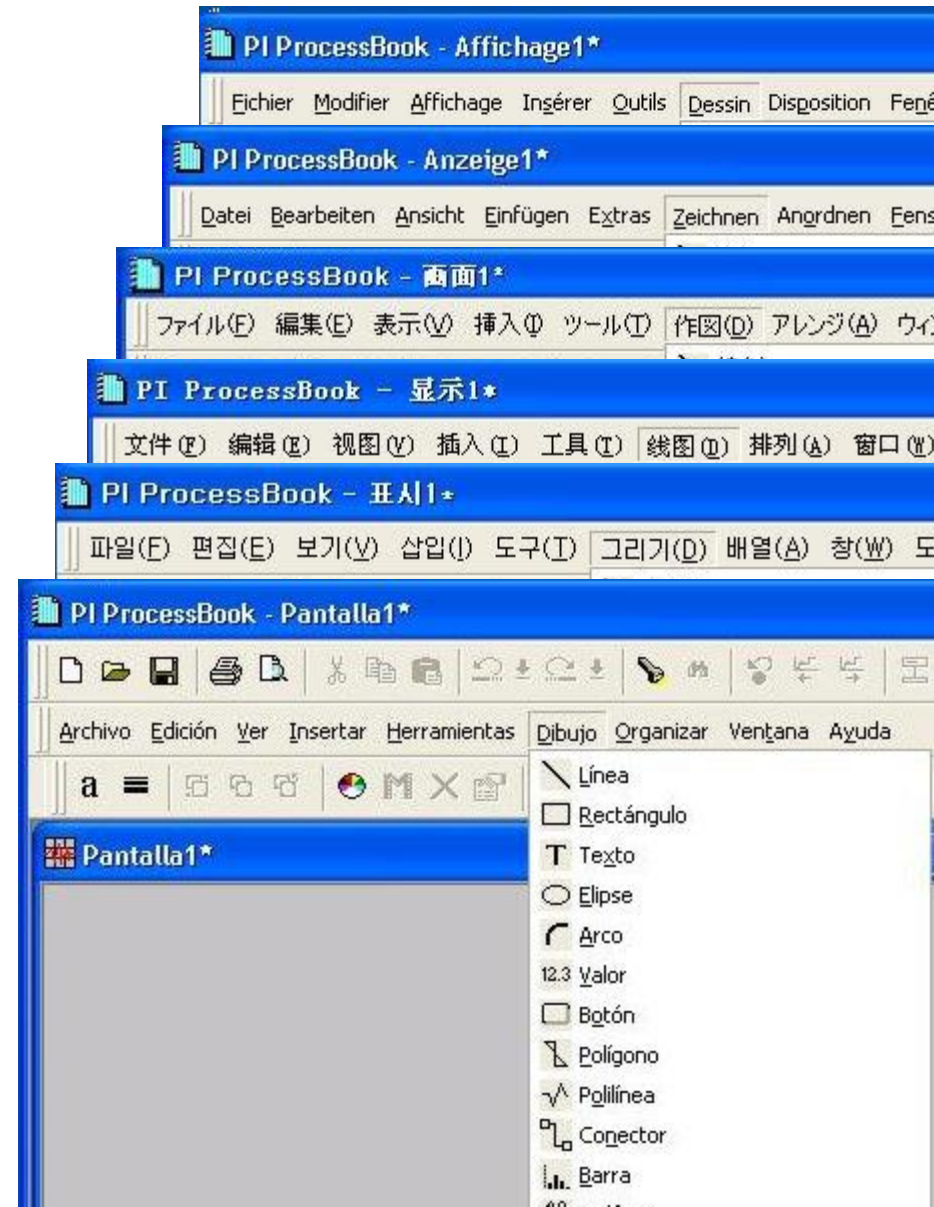


- ProcessBook display as content
- ProcessBook display linked as content
- Instant trend
- Pass time context to display

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



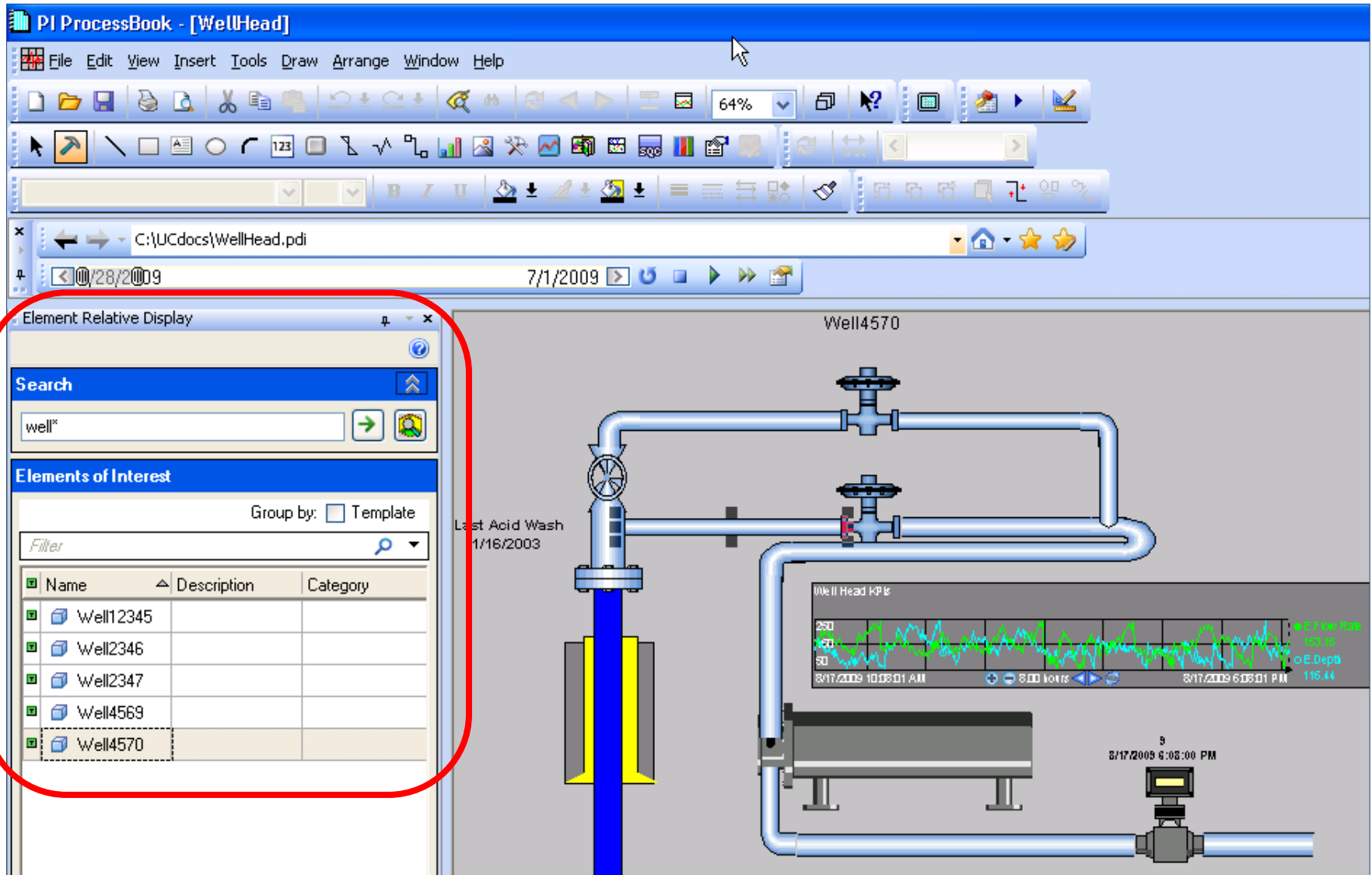
- ProcessBook and ActiveView
 - English
 - French
 - German
 - Spanish
 - Simplified Chinese
 - Japanese
 - Korean
 - Russian (*coming soon*)
 - Brazilian Portuguese (*coming soon*)
- BatchView
 - Japanese



- ProcessBook 3.1 (October 2008)
 - Windows security integration
 - PI Notifications integration
 - Trending 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

PB 3.2 - 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 7/16/2009

Well Head KPI

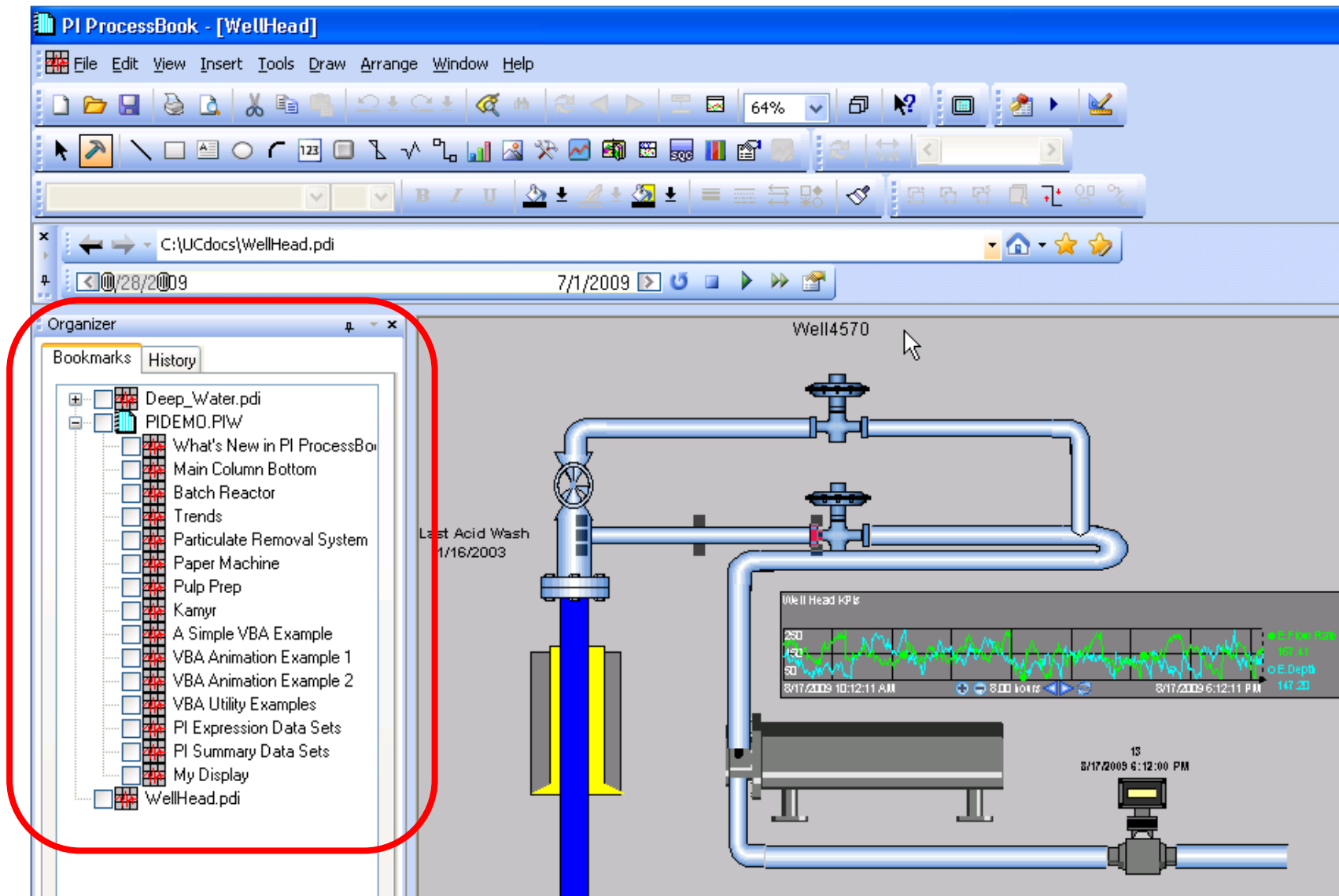
250
150
50

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

o.E.Flow Rate 158.15
o.E.Depth 116.44

5
8/17/2009 6:03:00 PM

PB 3.2 - Display Browsing and Bookmarking



The screenshot displays the PI ProcessBook interface for a process named "WellHead". The main window shows a process diagram with blue pipes, valves, and a wellhead. A data table titled "Well Head KPIs" is visible, showing two data series: "E.Flow Rate" and "E.Depth".

Well Head KPIs	8/17/2009 10:12:11 AM	8/17/2009 6:12:11 PM
E.Flow Rate	157.45	147.20
E.Depth		

The "Organizer" window on the left is highlighted with a red circle and contains the following bookmark list:

- Deep_Water.pdi
- PIDEMO.PIW
 - What's New in PI ProcessBo
 - 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

PB 3.2 - Office Communicator Integration

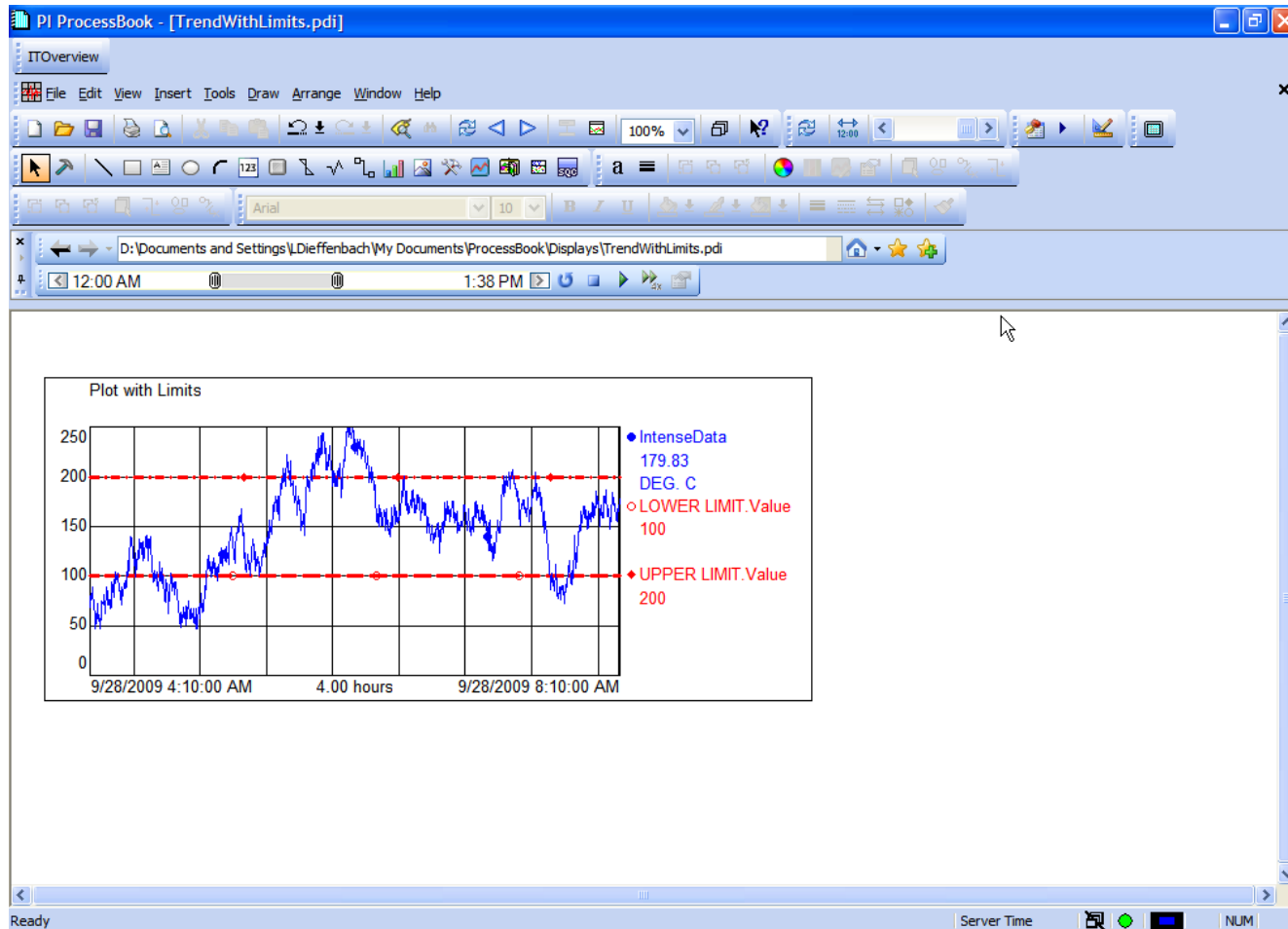


The screenshot displays the PI ProcessBook interface for a process named "Well4570". The main window shows a schematic diagram of a wellhead system with various pipes, valves, and a well. A data table is overlaid on the diagram, showing "Well Head KPIs" with columns for "E Flow Rate" and "E Depth". The data points are 188.28 and 122.18 respectively. The time range is from 8/17/2009 10:10:56 AM to 8/17/2009 6:10:56 PM. A "Last Acid Wash" event is noted as 1/16/2003. On the right side, a "Contacts" window is open, listing various roles and names under "MS Office Communicator Contacts".

Contacts List:

- MS Office Communicator Contacts
 - Information Management
 - Dale Milton
 - Information Systems
 - Kevin Lee
 - Maintenance Engineers
 - Aaron Tucker
 - Operators
 - Stan Prosovski
 - Process Control Engineers
 - Carl Bertoni
 - Process Engineers
 - Lalit Subramaniam
 - Quality Compliance
 - Nicole Prevensky
 - Other Contacts

PB 3.2 Playback Feature



DataLink

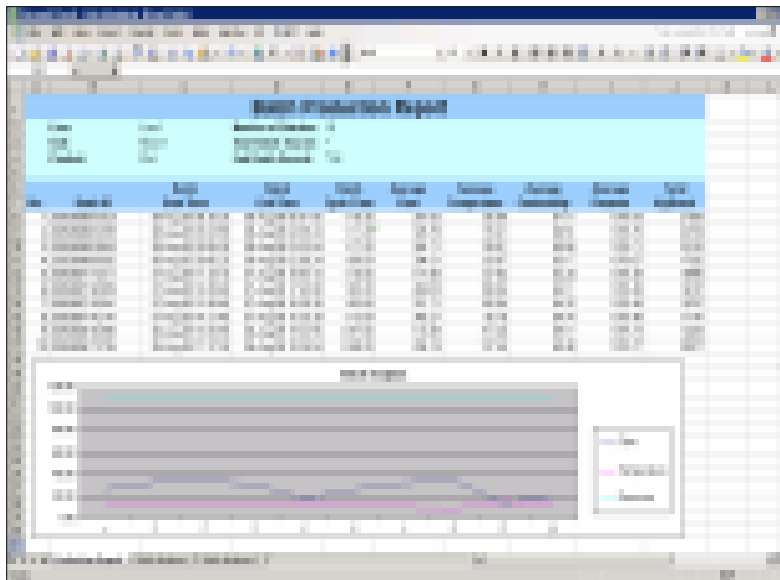


PI DataLink:

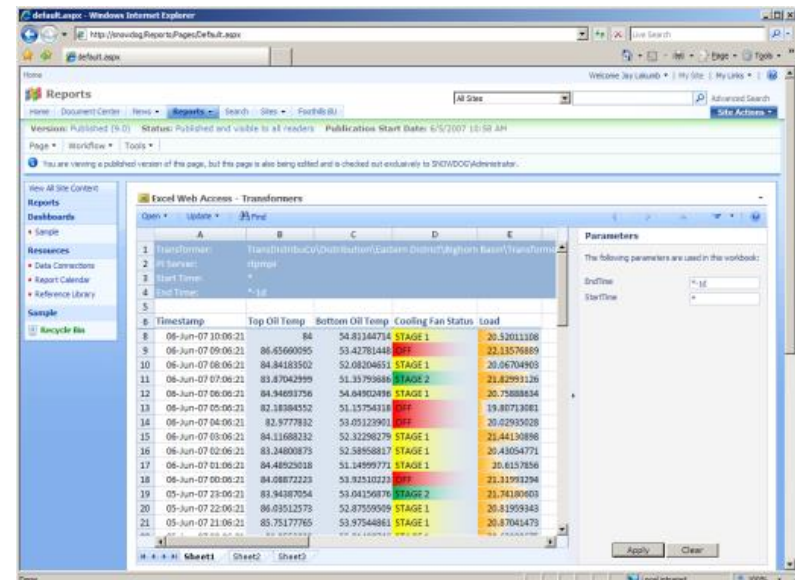
- Excel add-in to access real-time and historical PI data

PI DataLink for Excel Services (DLES):

- DataLink spreadsheets on the Web



DataLink



DataLink for Excel Services

- DataLink 4.1 (*Released*)
 - Support for automatic 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

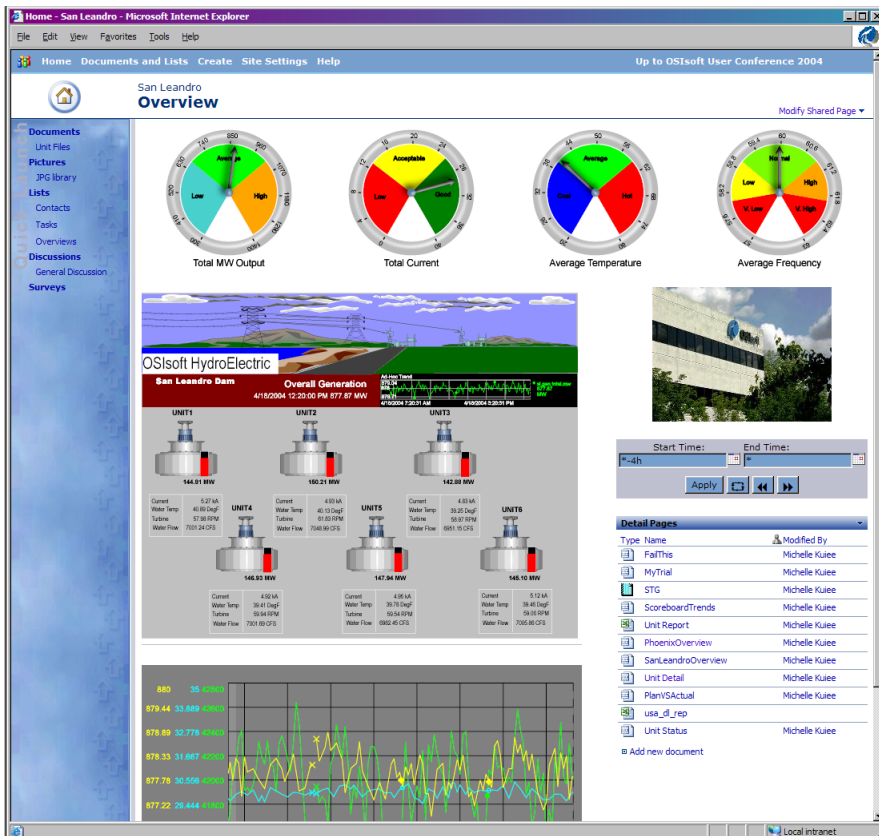
- DataLink 5.0 (2H 2010)
 - Support for Office 2010
 - Support for AF

PI WebParts / RtPM iViews

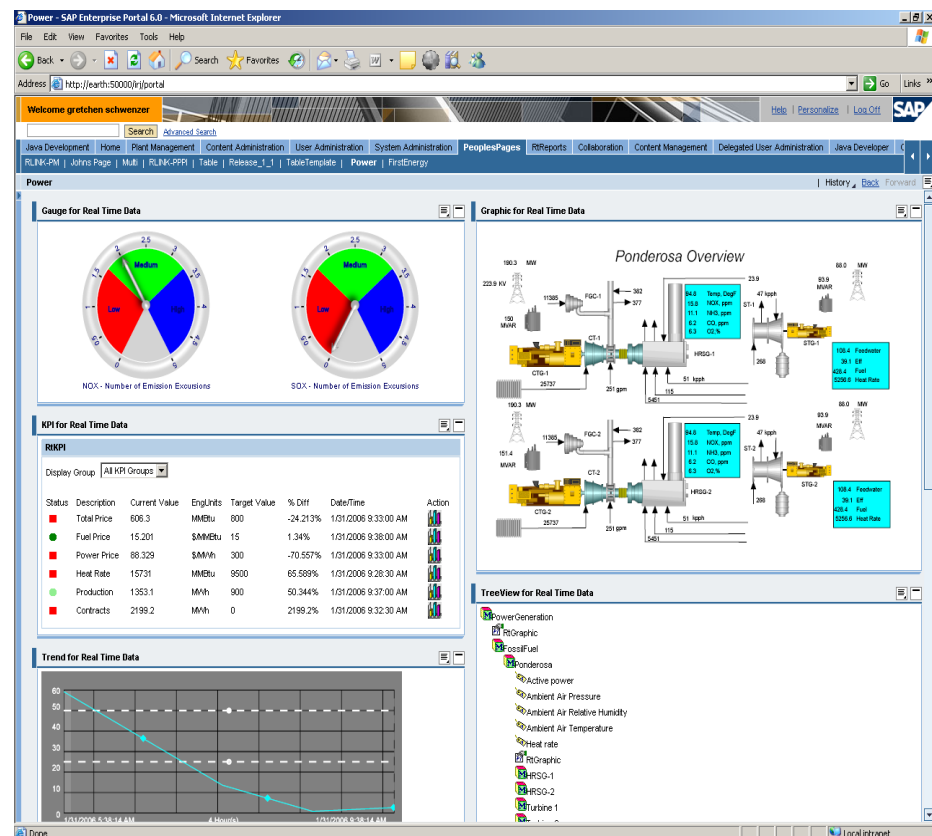


- Access to Process Information
- Analysis and Reporting
- Integration and Collaboration

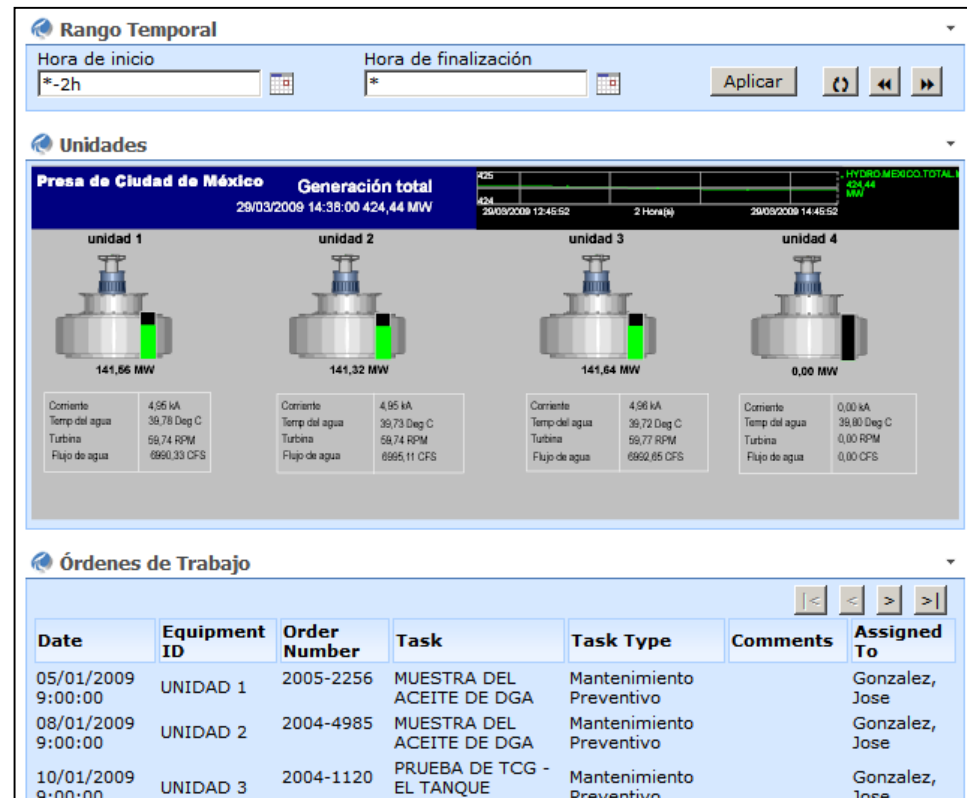
PI WebParts example



iViews example



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



- **PI WebParts 3.0 (4Q 2009)**
 - Product will be officially rebranded PI WebParts
 - Support for 64-bit operating systems
 - Support for AF

- **PI WebParts 4.0 (2H 2010)**
 - Support for Office 2010
 - Enhanced AF Support
 - Support for Microsoft Silverlight

OSisoft Product Roadmap

- Major Release
- Minor Release

Oct Nov Dec Jan Feb Mar Q2'10 Q3 '10

Client

Desktop

ProcessBook (3.2, 3.3)

DataLink (5.0)

Manual Logger (2.3, 2.4)

ProfileView (2.2)

Web

PI WebParts (3.0, 4.0)

ActiveView (3.2, 3.3)

DataLink Excel Services (4.1, 5.0)

RtPM Business Pkg (70.1.1)



Server:

- PI Server 3.4.380 - *Released* September 2009 (Security)
- PI AF 2.1 - August 2009 (64-bit, HA) *Released*
- PI Notifications 1.1 - September 2009 (Templates, OCS)
- PI Web Services - 1Q 2010 (PI, AF)
- PI Server 3.5 - 1Q 2010 (MDB to AF)

Clients:

- PI ProcessBook 3.2 - *Released* September 2009 (AF Element Relative Displays)
- PI WebParts 3.0 - 4Q 2009 (64-bit, AF Support)
- PI DataLink 4.1 for Excel Services - 4Q 2009 (64-bit)



Thank you

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