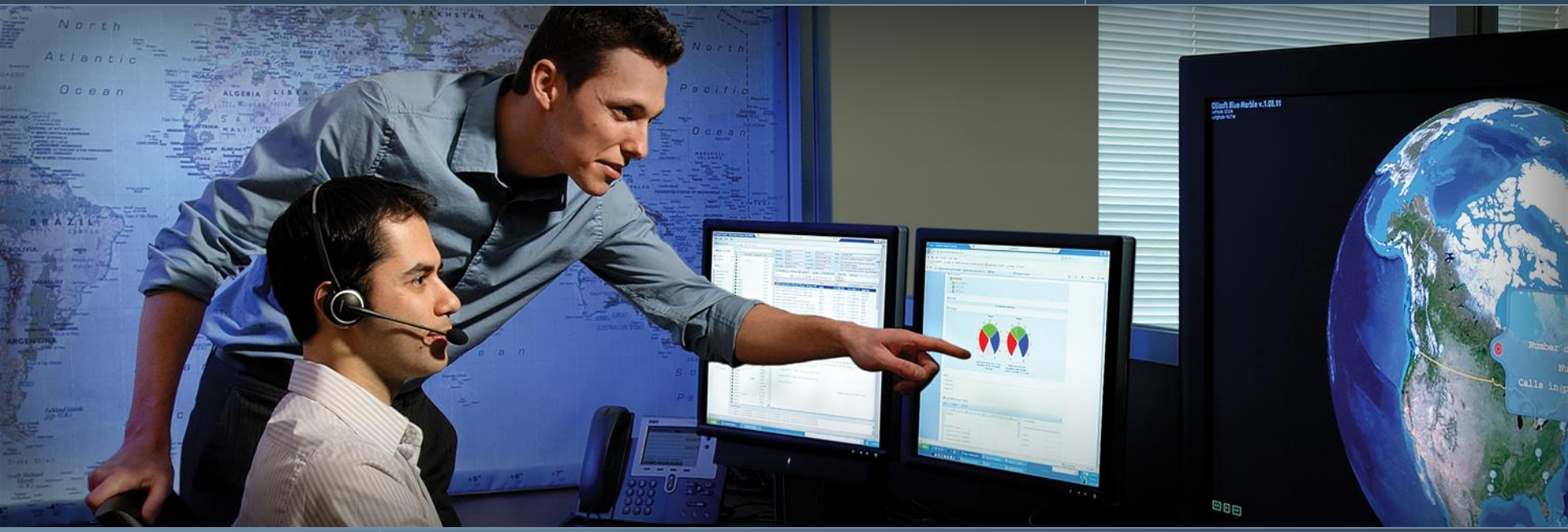
OSIsoft®

Regional Seminar Series



PI System Roadmap

Tamara Carbaugh
Product Management
OSIsoft, LLC.

November 5, 2009

Empowering Business in Real Time.

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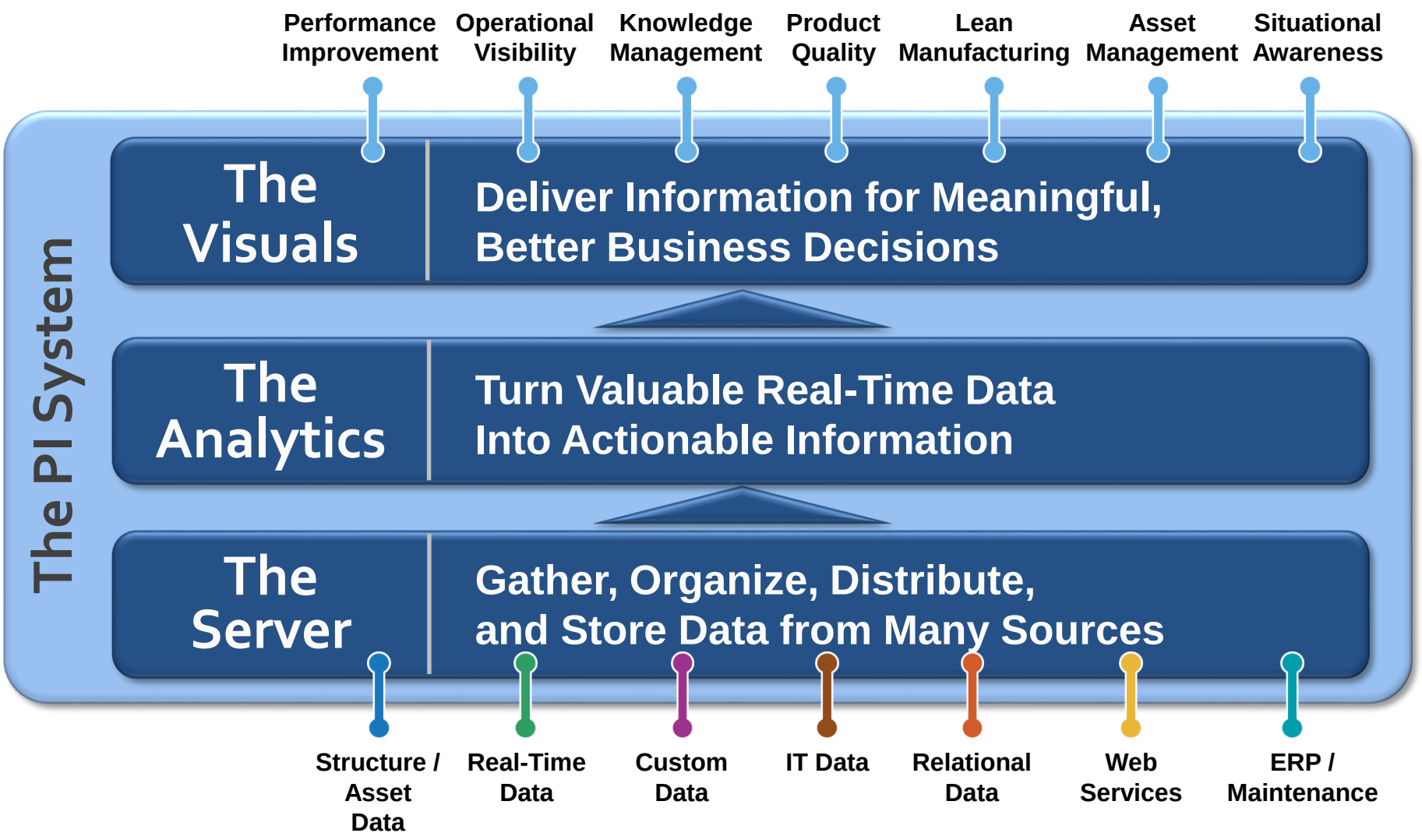
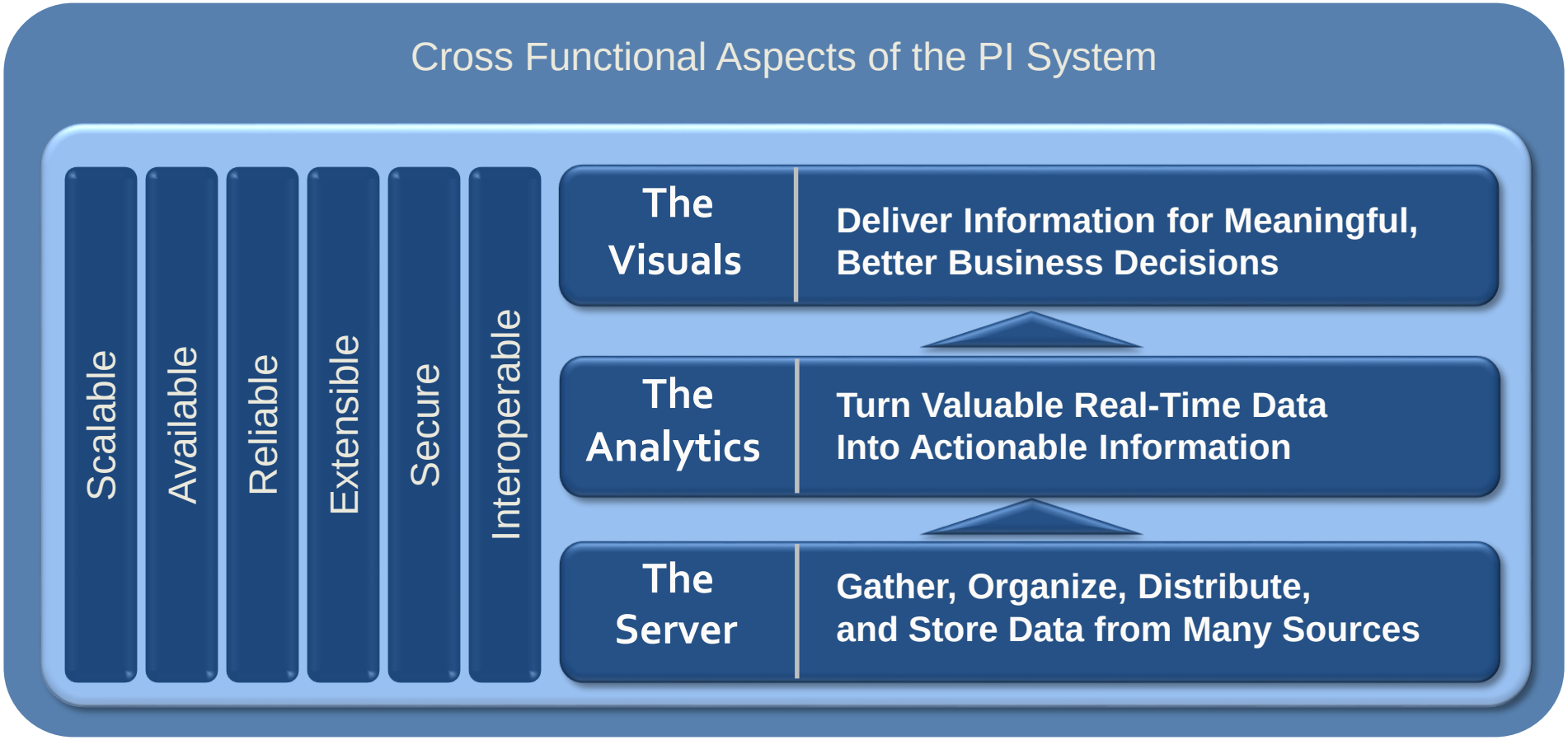
Functional Groups of The PI System



Aspects of The PI System



Roadmap Themes for 2009

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

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The Servers

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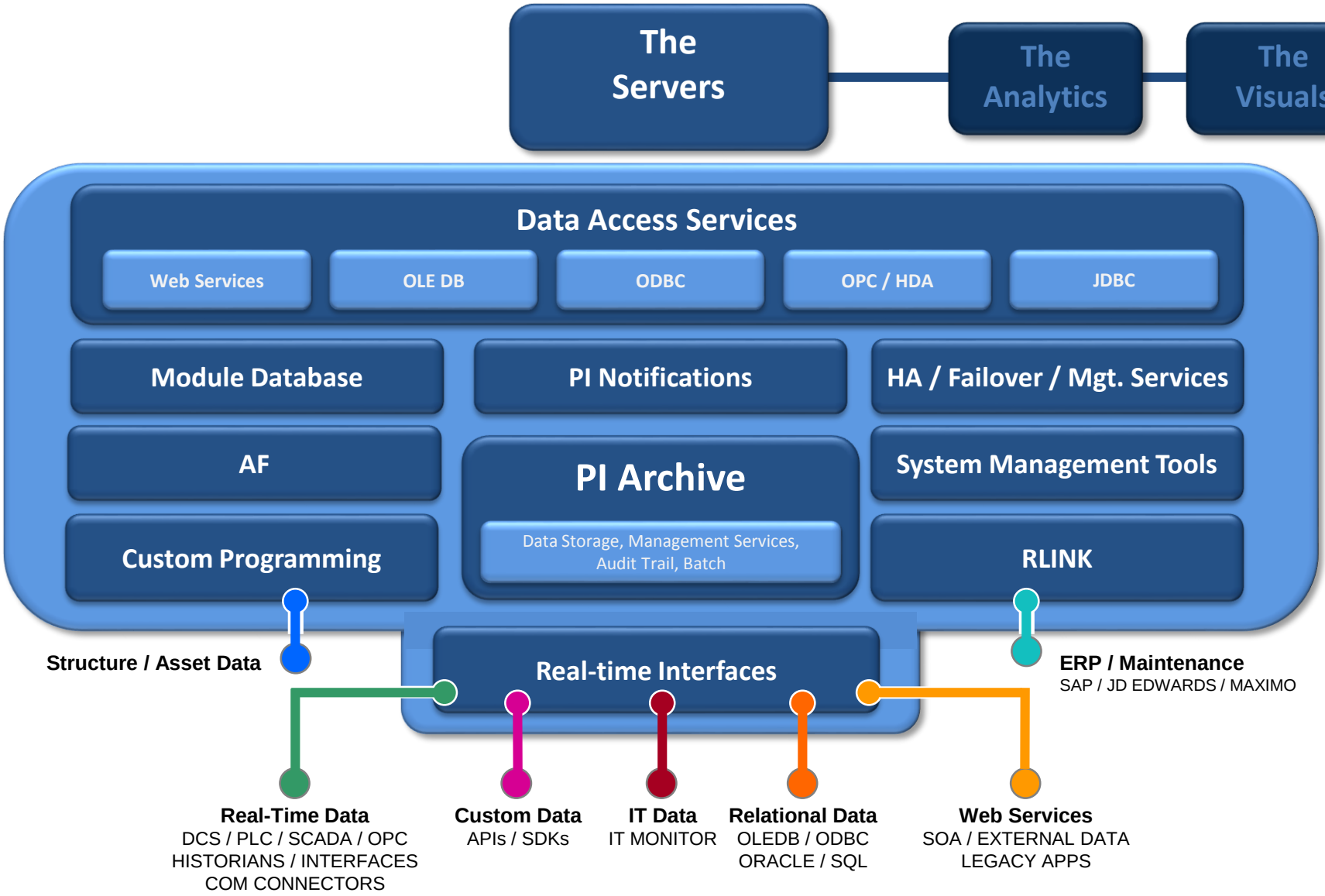
The PI Servers



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

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Security

- 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

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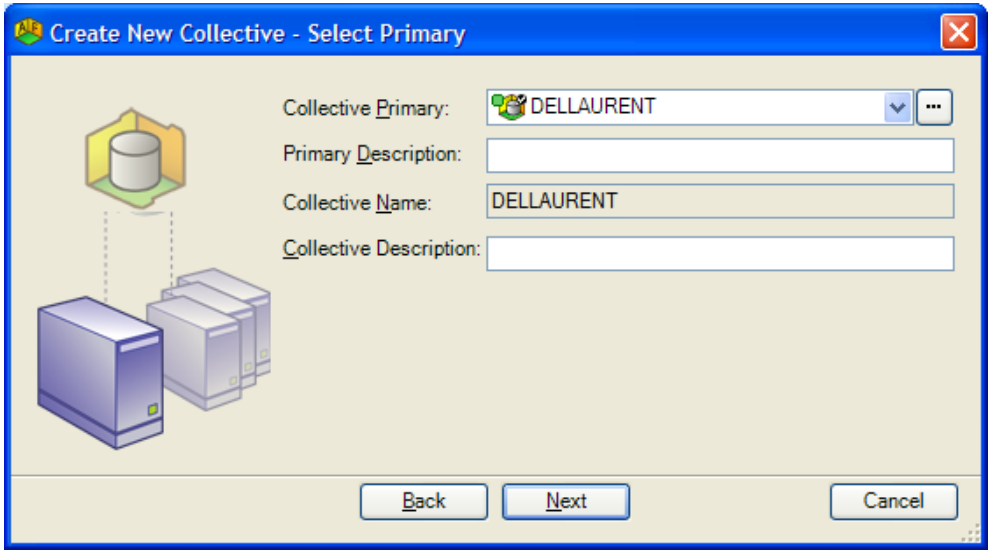
High Availability

- The PI Server has been HA for almost 3 years
  - Released in Q1 2007
- PI Notifications has been HA since the first release
  - Released in Q1 2008
- PI AF 2.1 is now Highly Available



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Scalability and Manageability

- Better performance, scalability and throughput for the PI Server, PI AF and PI Notifications
- Support for 64bits
  - Native support for the PI Server and PI AF
  - PI Notifications tested as a 32bits running on 64bits

- New PI SMT 3 plug-ins to manage the new security model
- Improved manageability for PI Notifications leveraging PI AF Notifications templates

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PI Server 3.4.380 WIS

Technical Overview and

Value proposition

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WIS Value Proposition

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

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WIS Value Proposition

- More Secure
  - SSPI*-based Kerberos or NTLM**
  - Server-Side Authentication Control
  - No More Default User, PIWorld

- More Flexible
  - Unlimited Access Control Lists (ACLs)

Point	Point Security	Data Security
SINUSOID	Asia-Pacific: A(r) | Antarctica: A(r,w) | Americas: A(r) | Europe: A(r)	Green: A(r)

*Security Support Provider Interface
** NT LAN Manager

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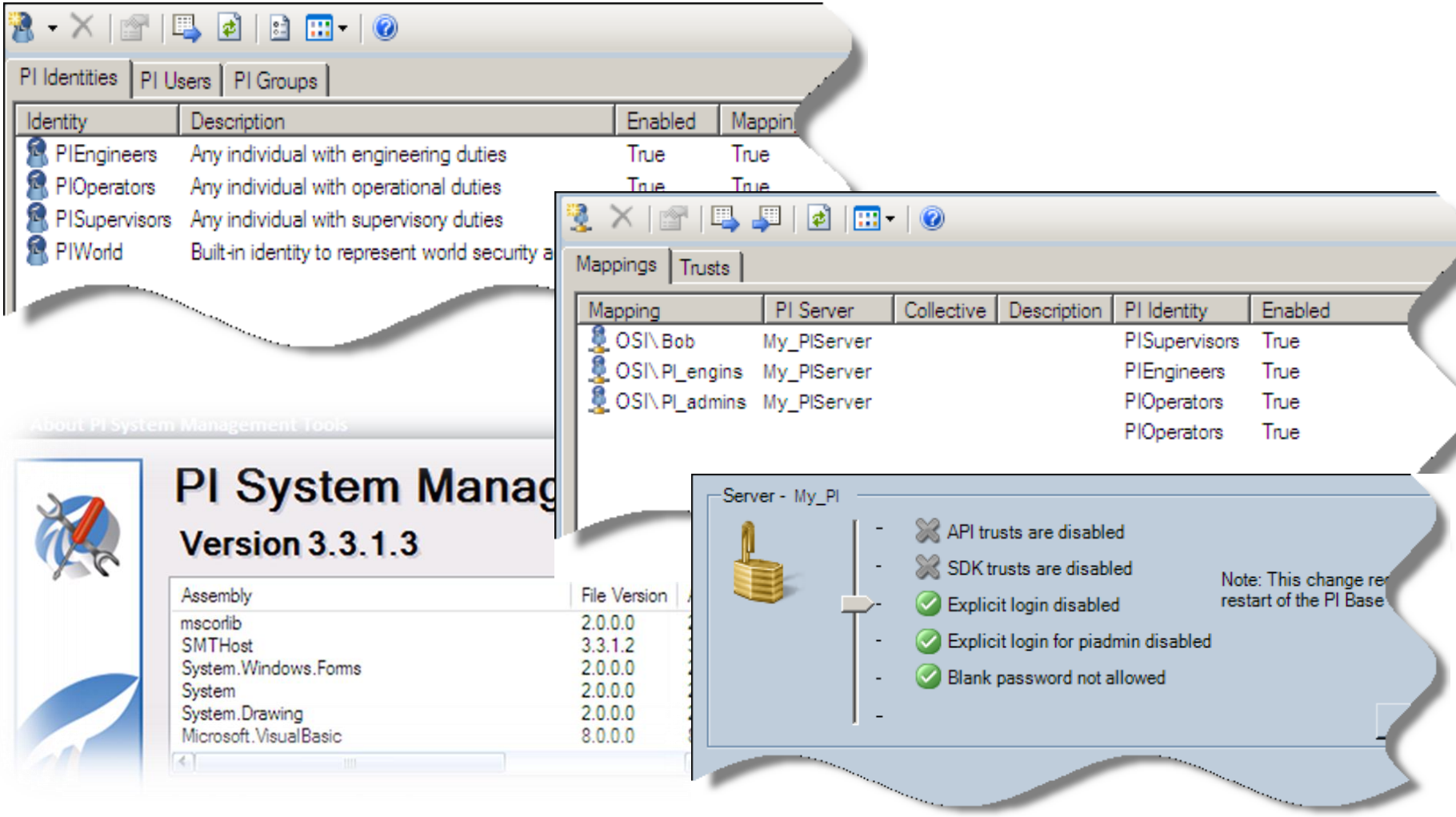
New with the PI Server 3.4.380 Release

Improved System Management Tools (PI SMT 3.3)



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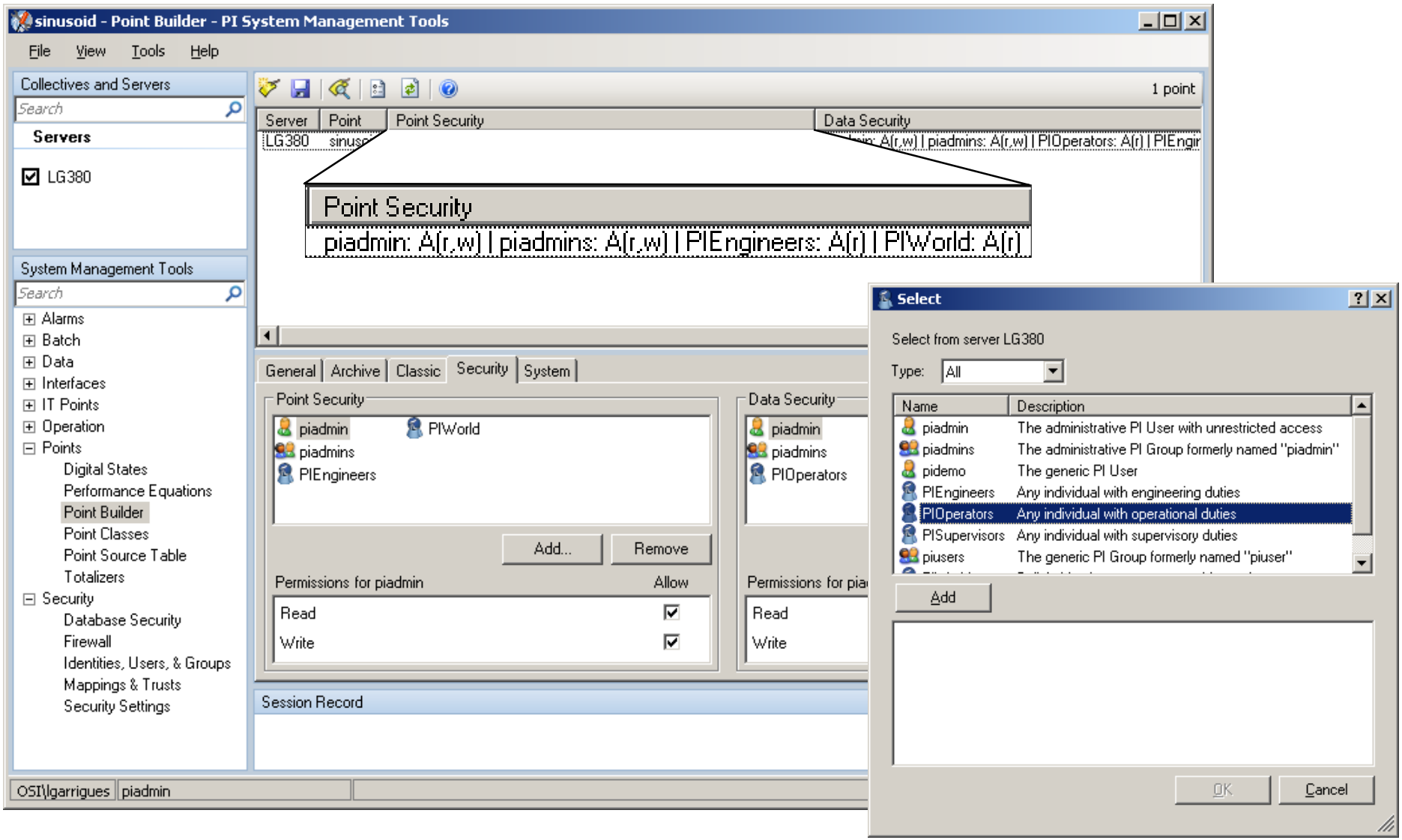
New with the PI Server 3.4.380 Release



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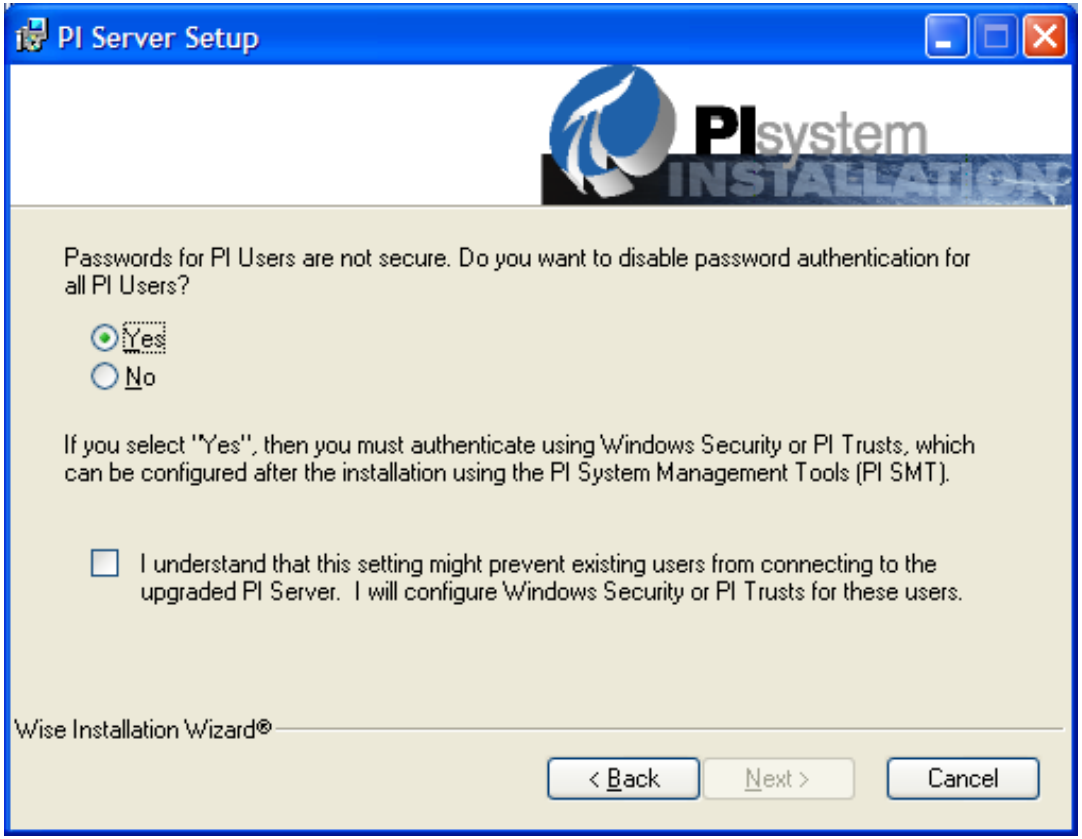
New with the PI Server 3.4.380 Release

Setup

- Secure configuration by default, with database consistency checks during upgrade



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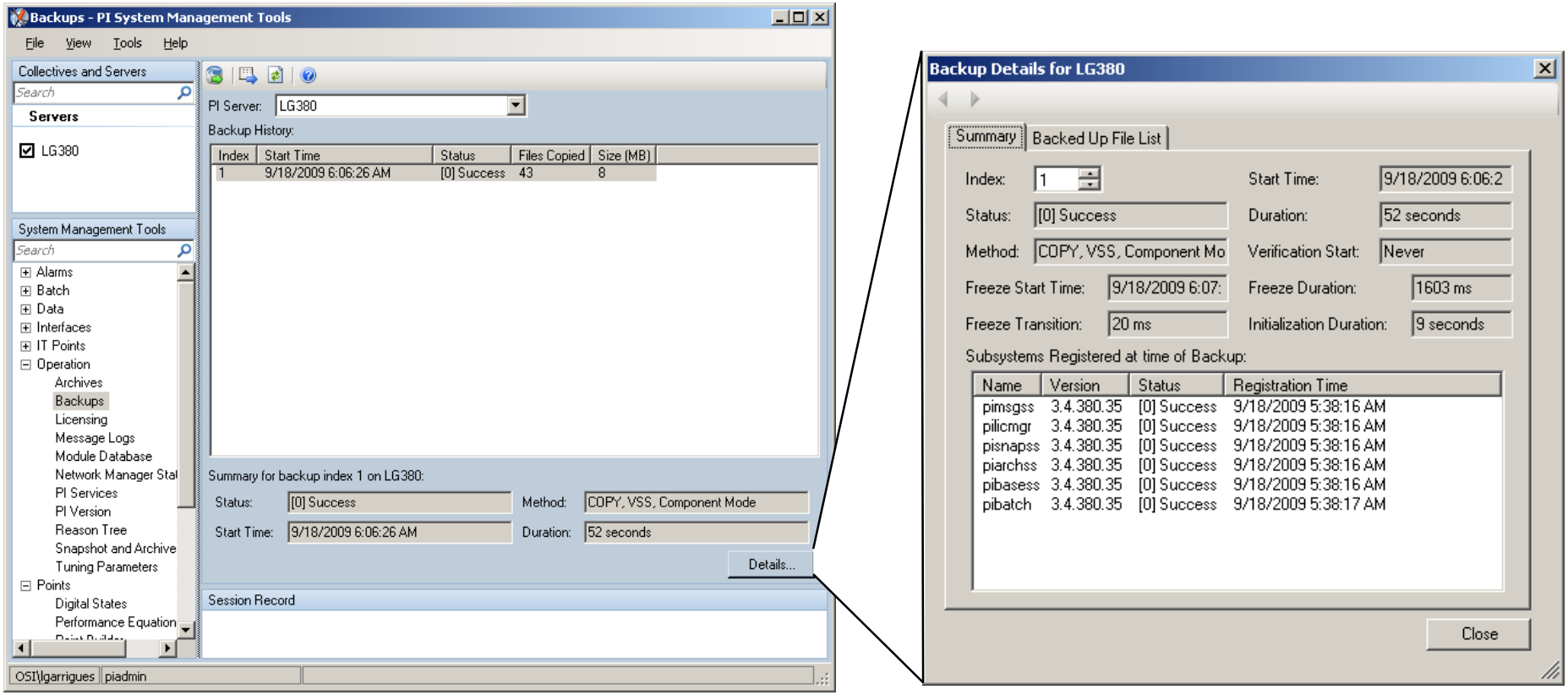
New with the PI Server 3.4.380 Release

PI Backups

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



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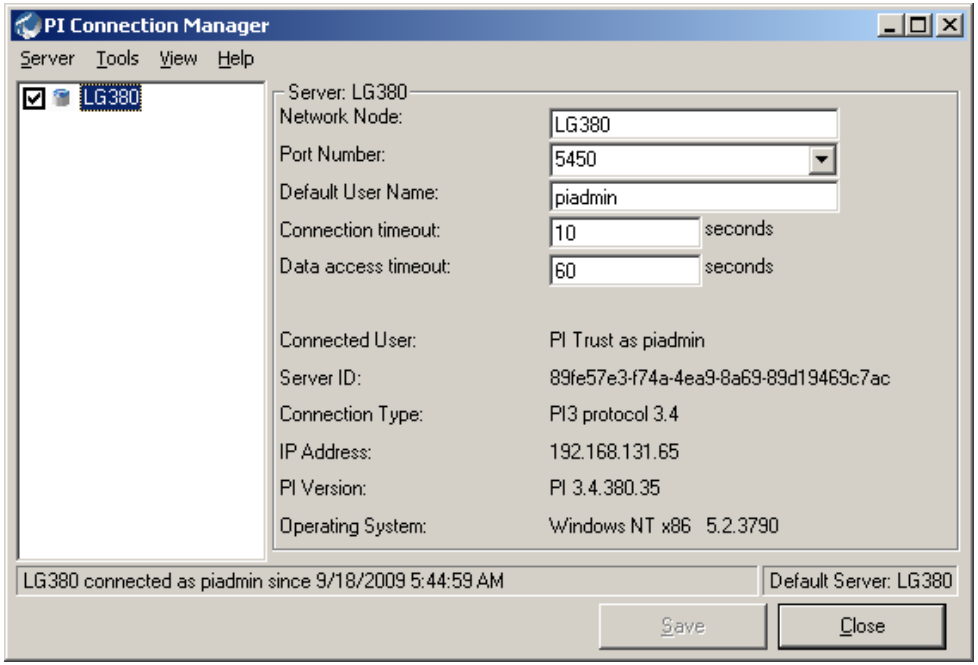
Clients apps and the 3.4.380 release

- Clients apps only need to upgrade the PI SDK 1.3.6 (released in Q3 2008) to take advantage of the new Security Model
- Most clients, like PI ProcessBook 3.1 and PI Datalink 4.x are already shipping with the PI SDK 1.3.6



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The PI AF Server

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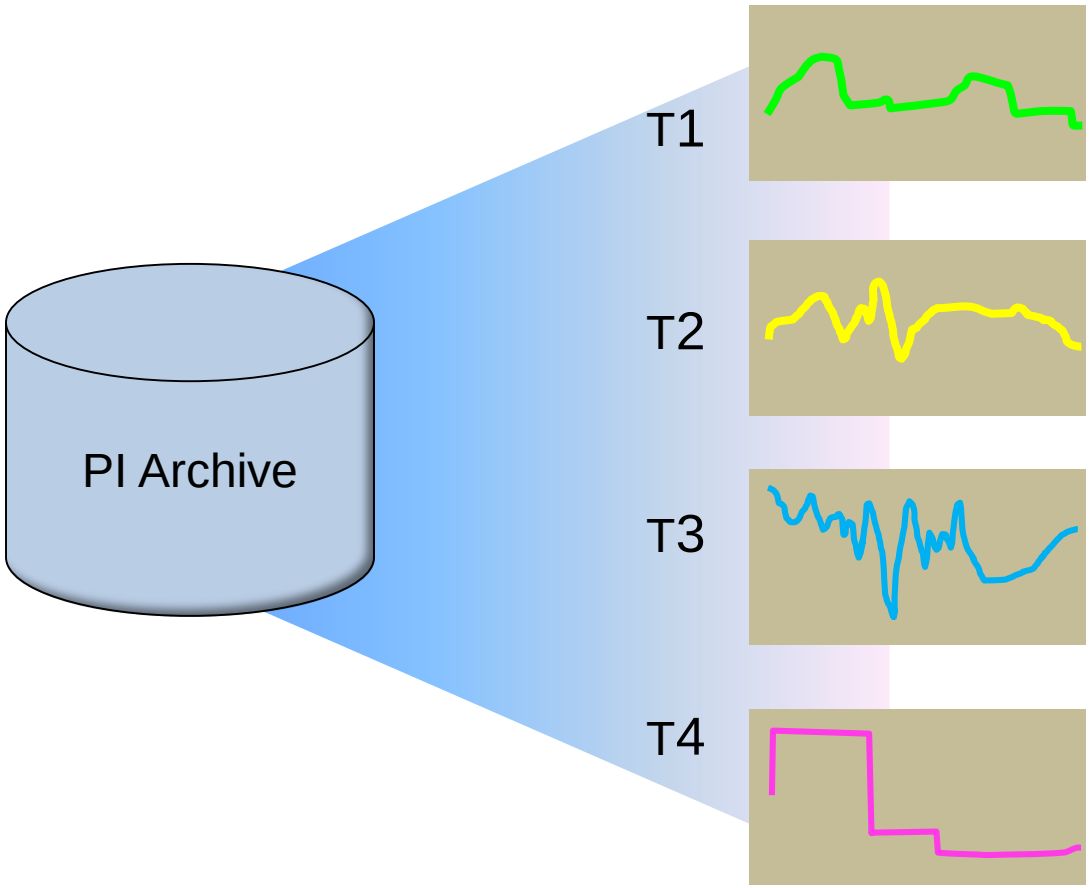
PI is about time series … and tags!



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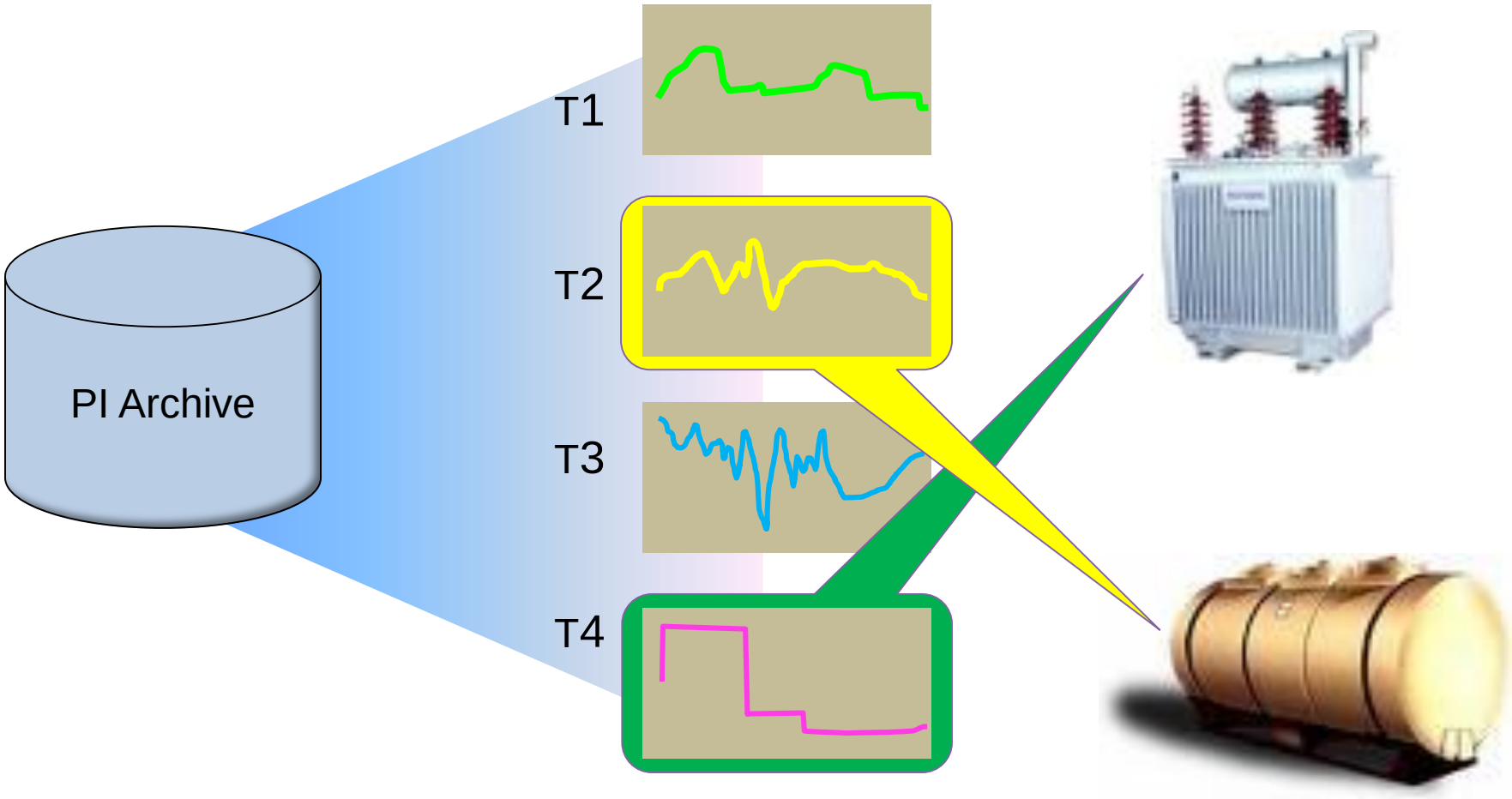
But Tags mostly relate to assets



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Who is using AF today?

Oil &Gas

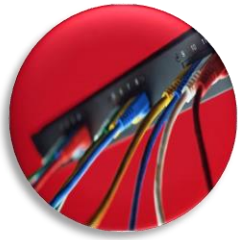
- Shell, Chevron, TOTAL

Power Generation, T&D

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

Pulp & Papers

- Appleton, International Paper, Tembec



Data Centers

- Microsoft, HP, Cornell

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PI AF 2.1

Technical Overview and Value proposition

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High Availability Value proposition

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

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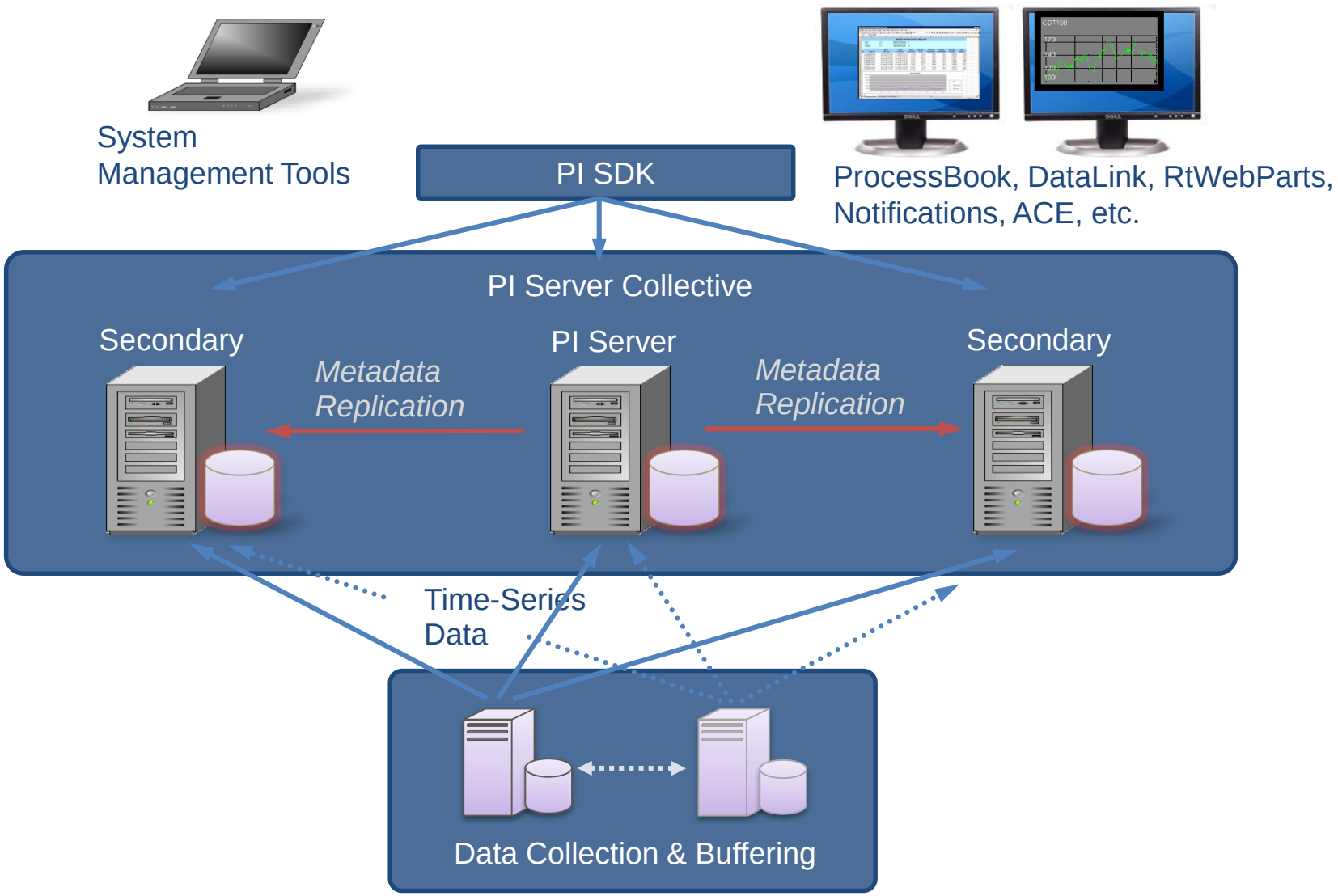
PI High Availability Architecture



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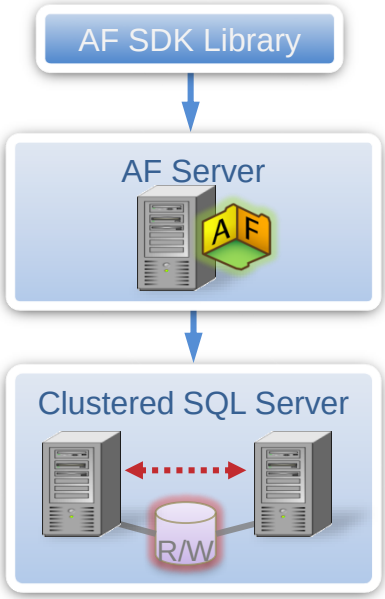
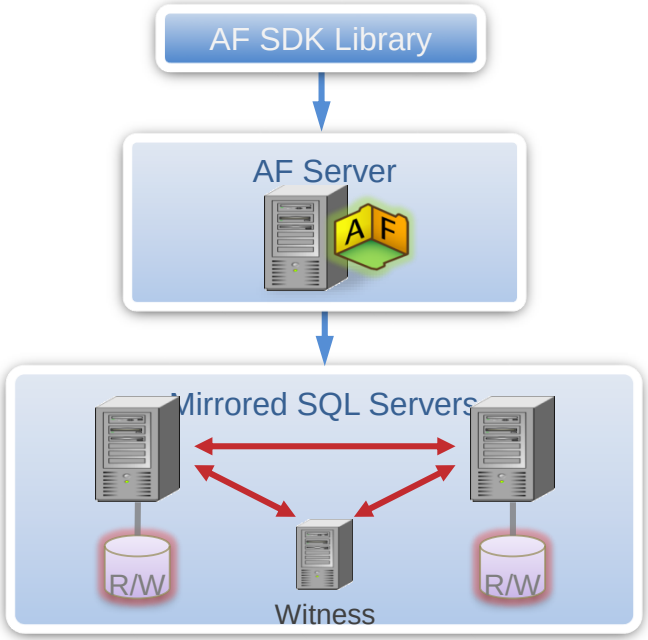
High Availability for AF 2.1

- 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





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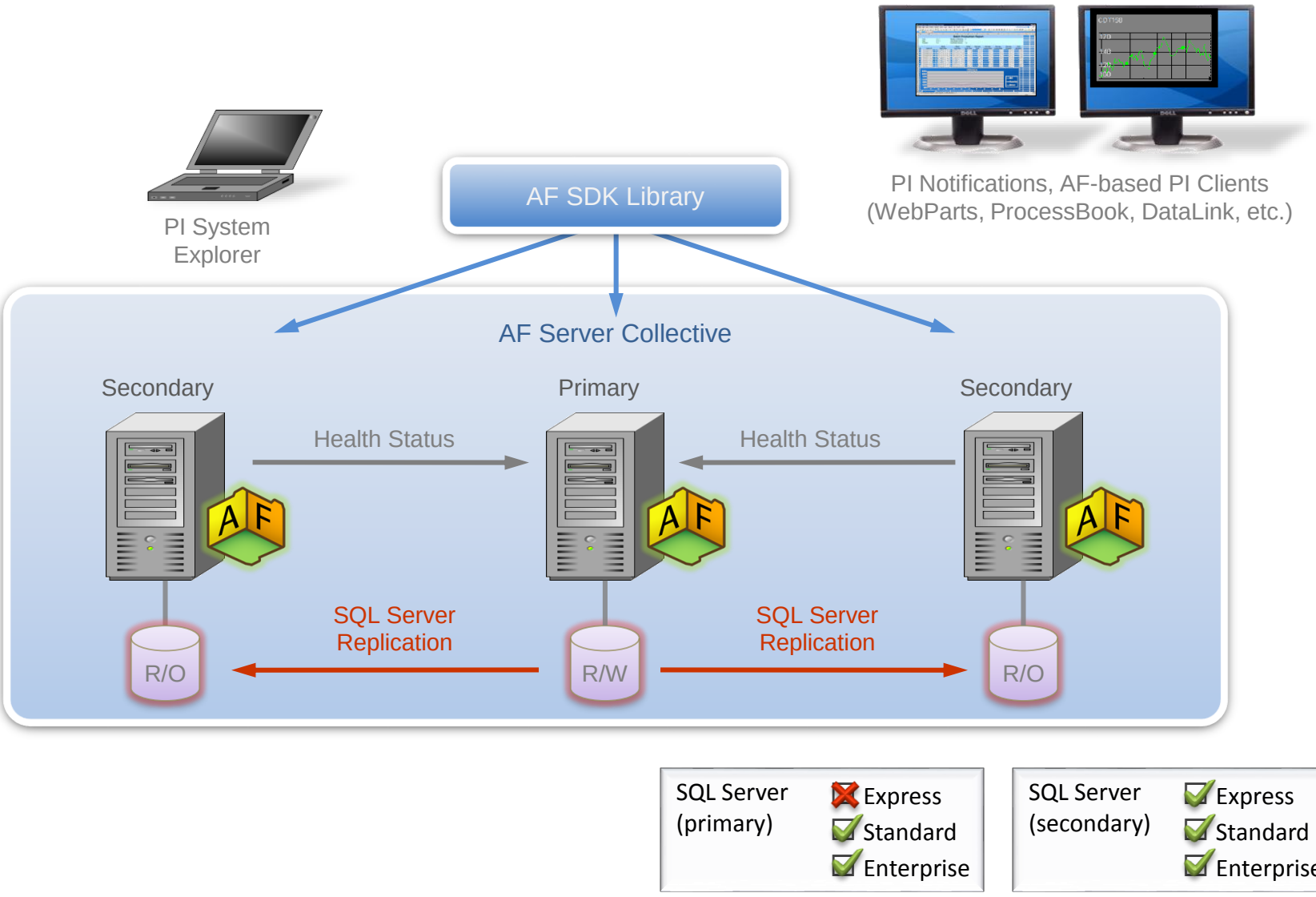
AF 2.1 HA Collective



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64 bit support

- 2.0 Server was 64-bit capable
- Can use either 32 or 64 bit SQL Server
  - 2005 or 2008
- Same install kit for 32 vs. 64 bit versions of AF Client or AF Server
- PI System Explorer can run as a 32 bit application on 64 bits

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Data Access

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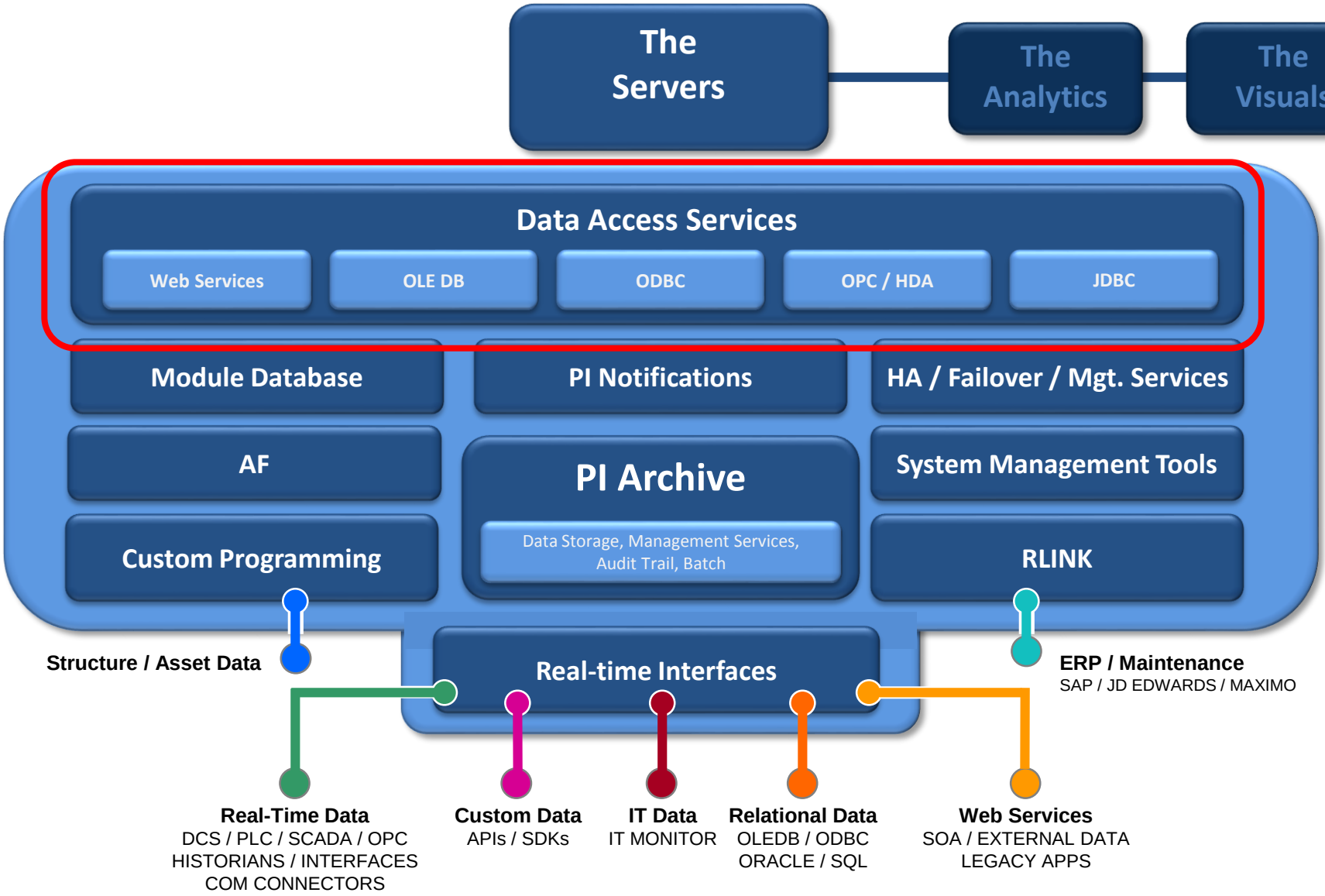
The PI Servers



Data Access Products

- 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

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Use Cases for Data Access

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

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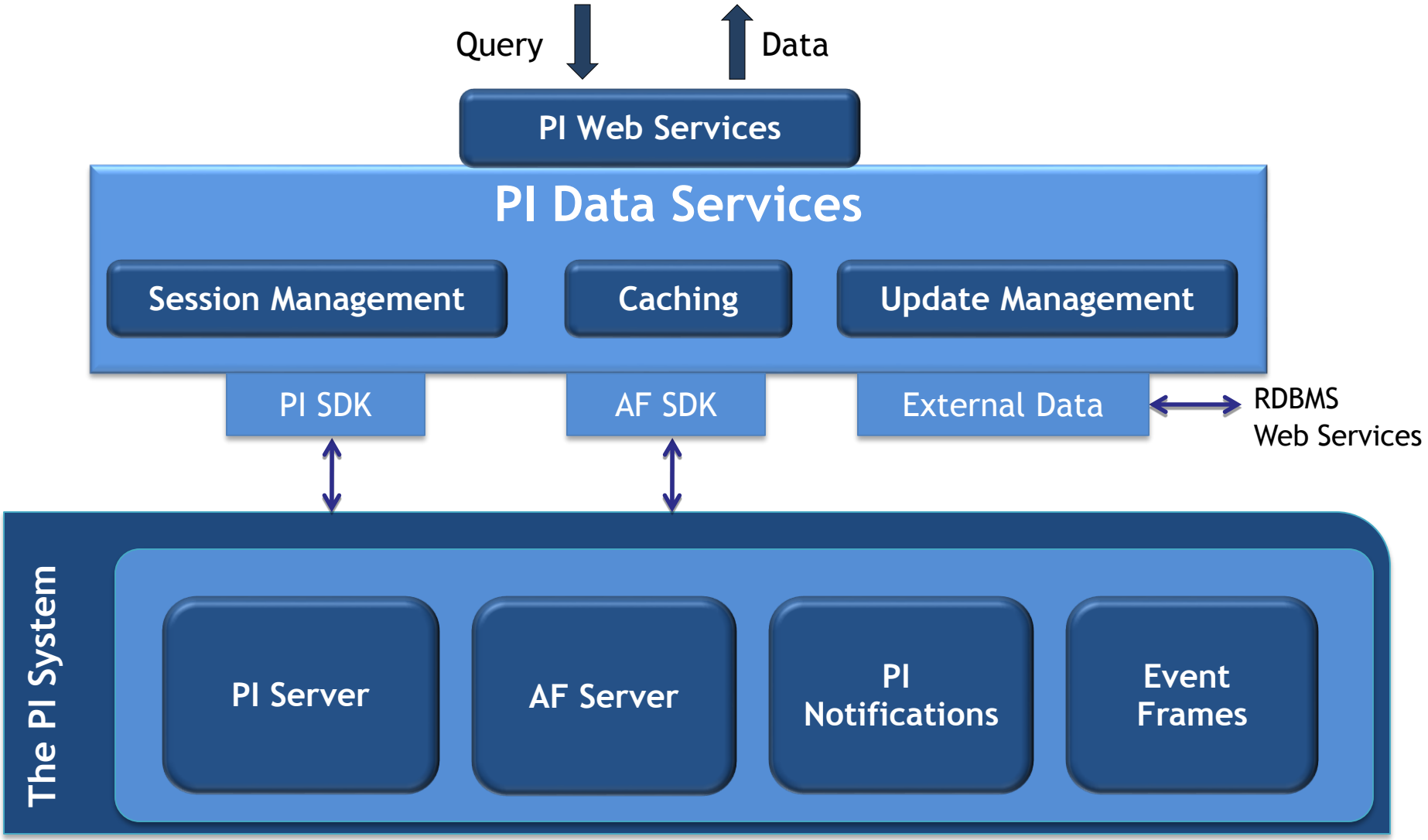
PI Web Services and PI Data Services



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PI Data Access Roadmap

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

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PI Data Access Roadmap *(continued)*

- 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 (1Q 2010)
  - Client-side buffering for manually entered data, ACE calculations writing to PI, and custom SDK-based interfaces

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OSIsoft vCampus

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OSIsoft vCampus Offering

- 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 (PI Access Licensing – PAL)
- Programming examples and documentation
- PI Virtual Campus – community collaboration site
  - Forums
  - Blogs

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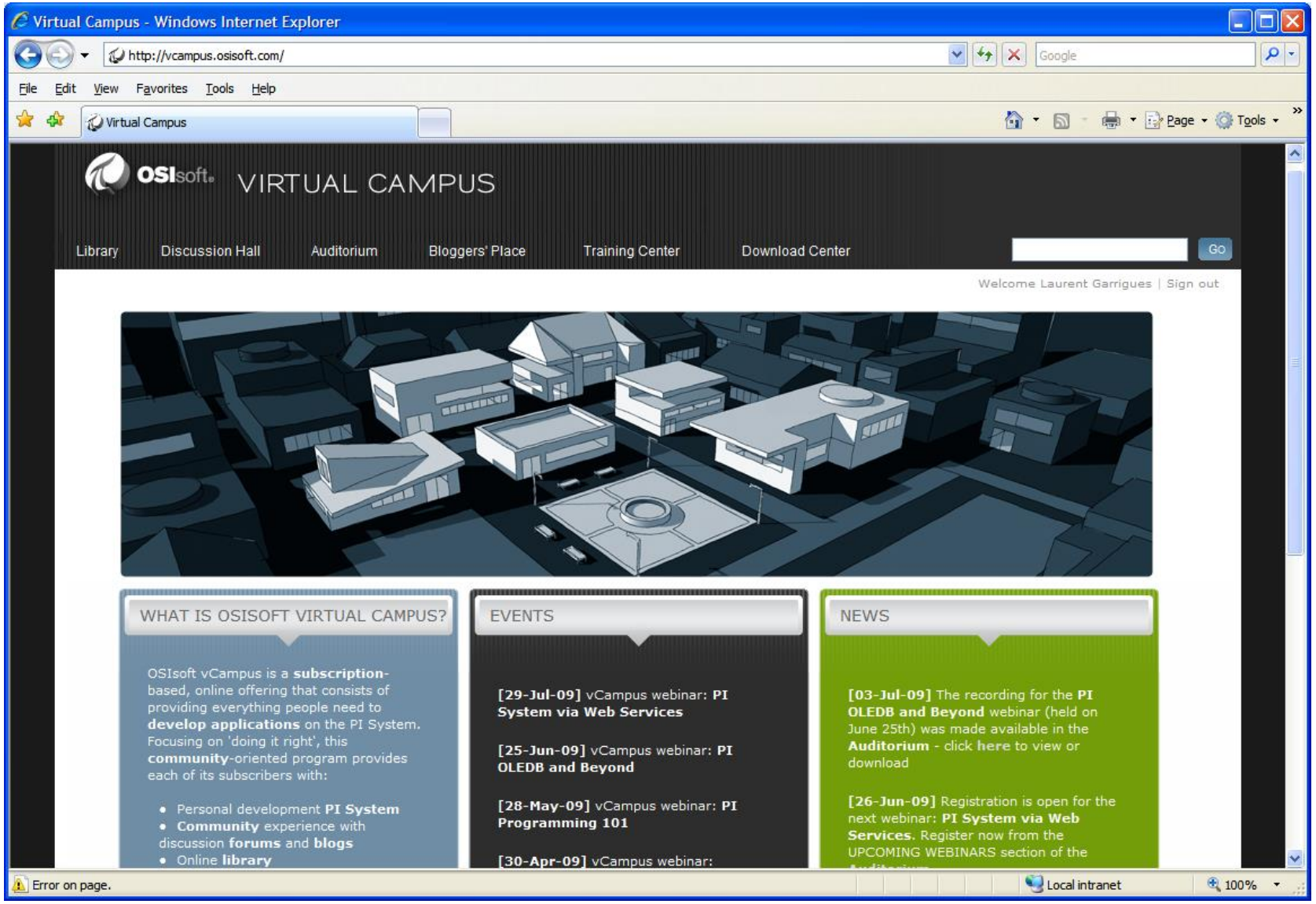
OSIsoft vCampus Website



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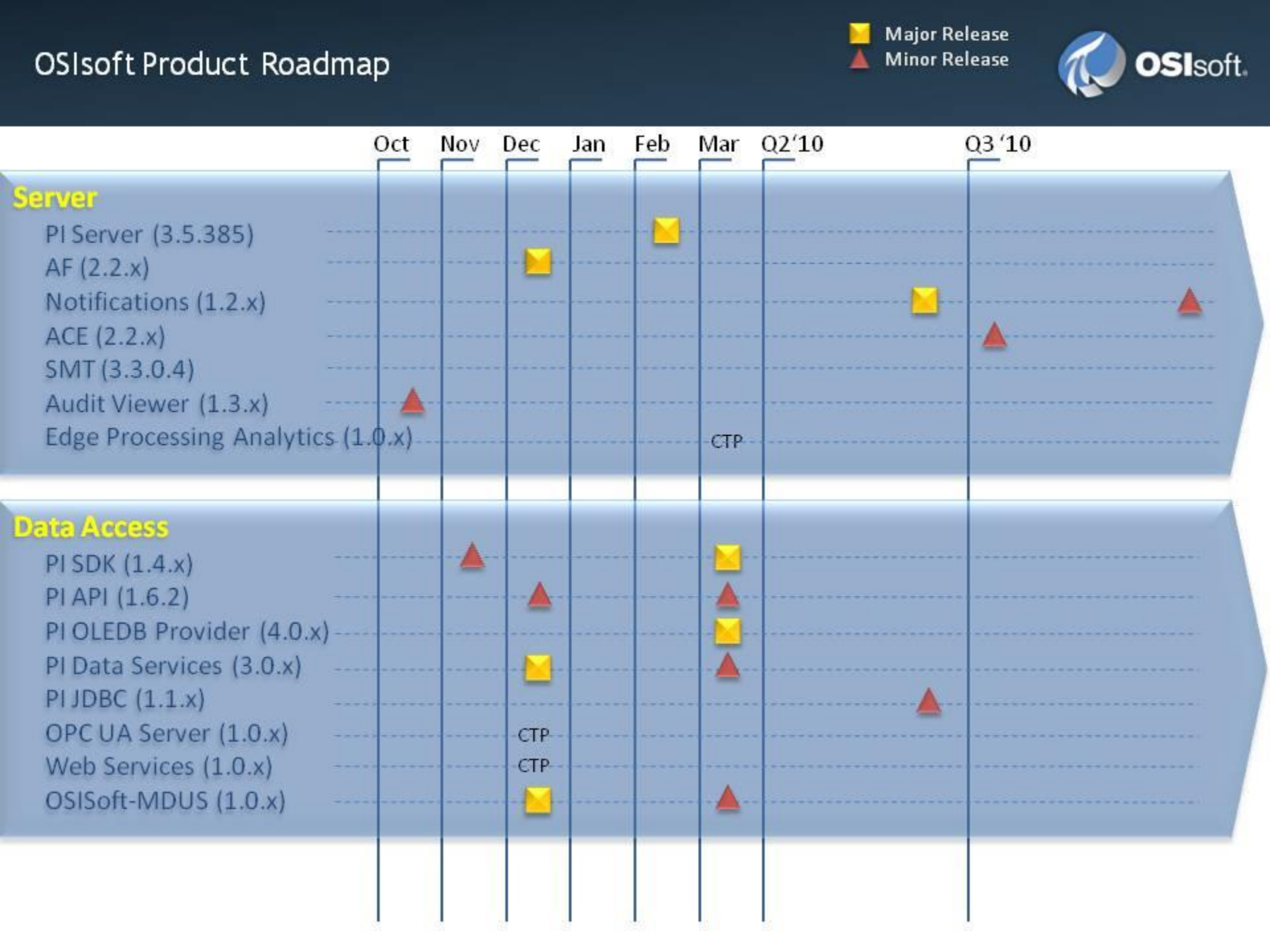
OSIsoft Product Roadmap



PI Interfaces

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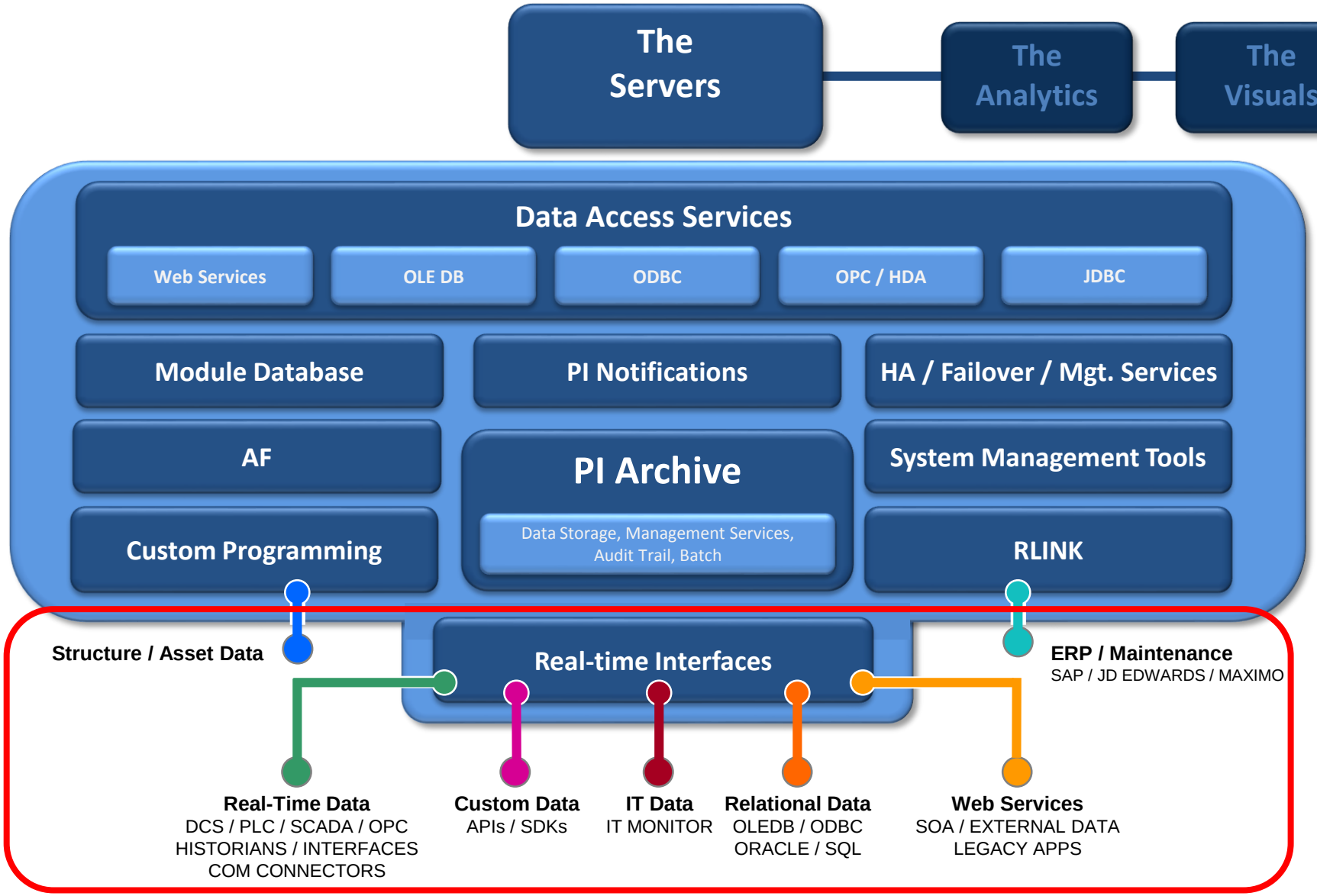
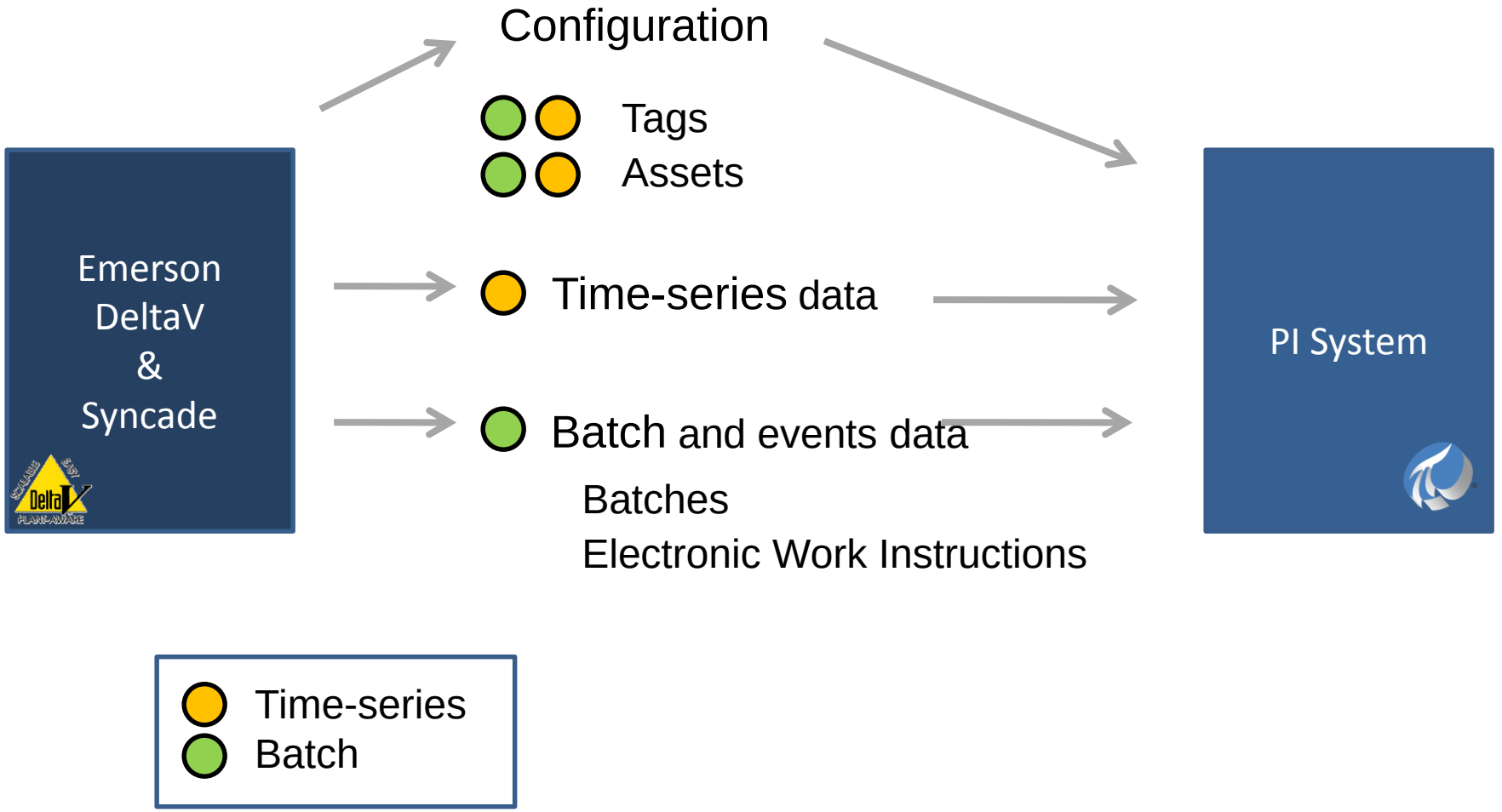
The PI Servers



Emerson DeltaV Advanced Interface



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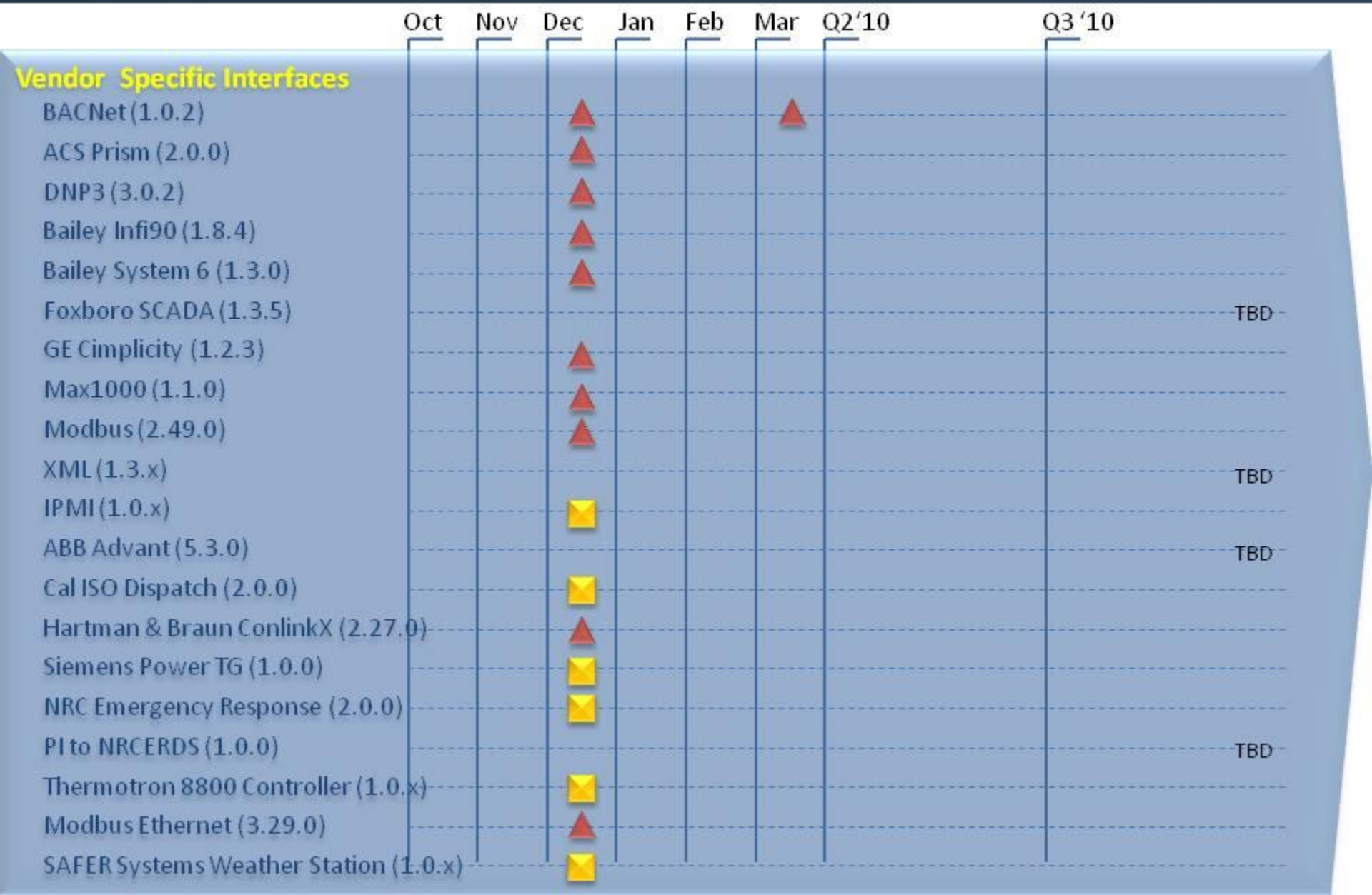
OSIsoft Product Roadmap - Interfaces

OSIsoft Product Roadmap - Vendor Specific Interfaces



PI Analytics

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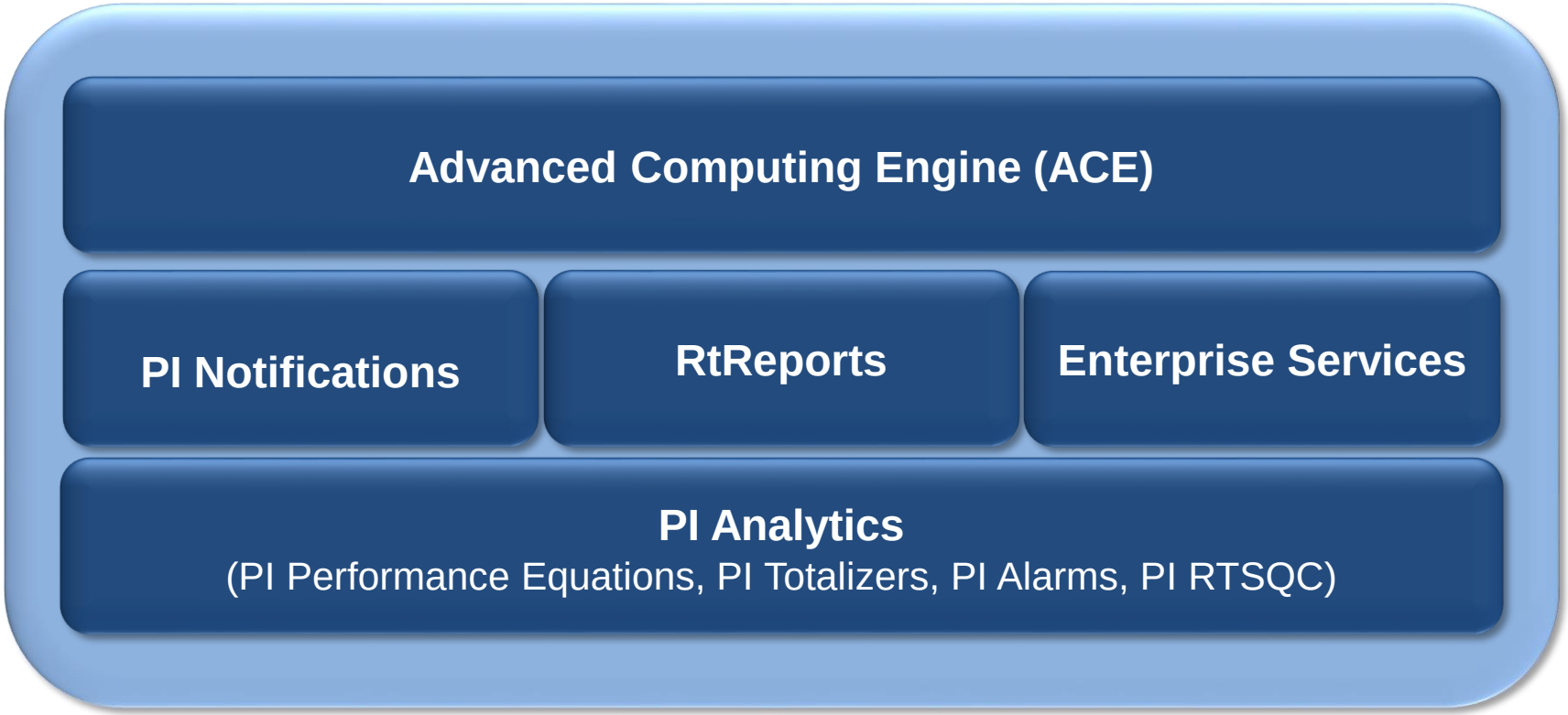
The Analytics within the PI System

The Server

The Analytics

The Visuals



PI Notifications 1.1

Technical Overview and

Value proposition

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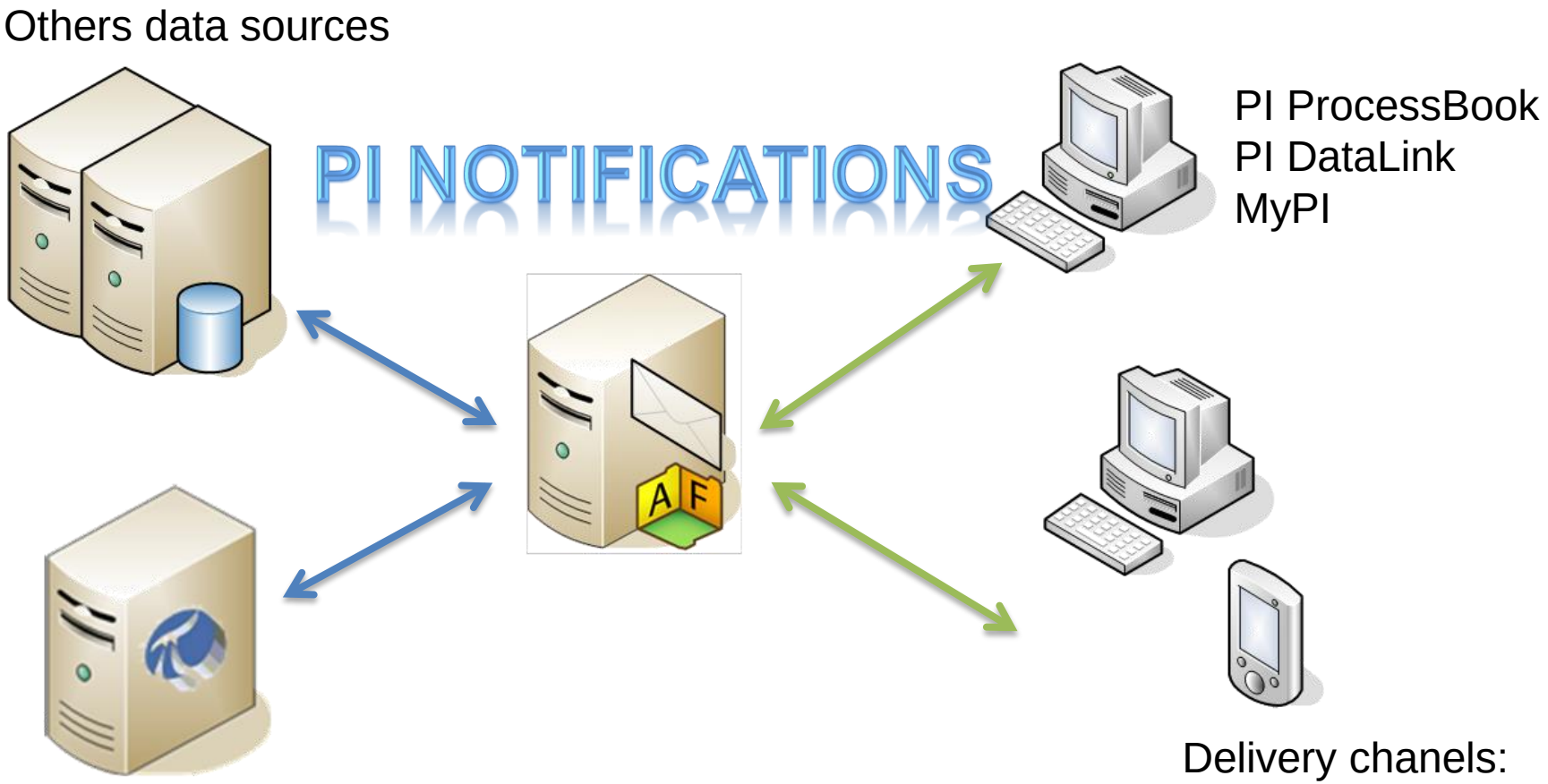
PI Notifications Architecture reminder



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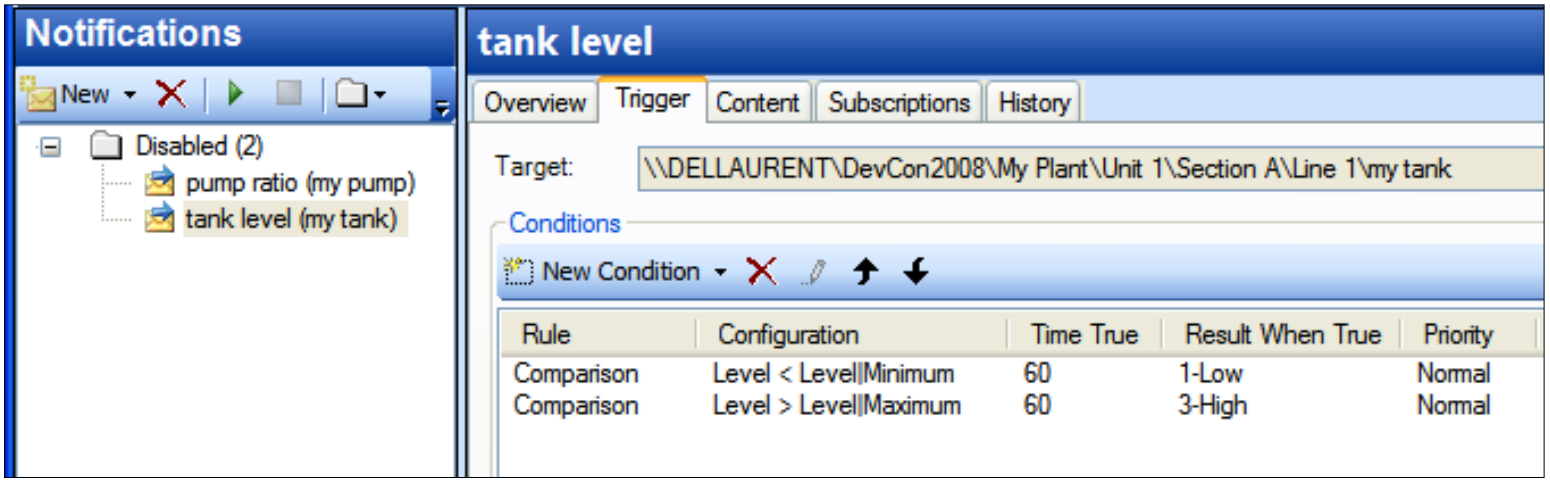
New with the PI Notifications 1.1 release

Performance improvements

- Can support up to 10k Notifications with multiples rules per Notifications server



- Can process up to 60k events/minute

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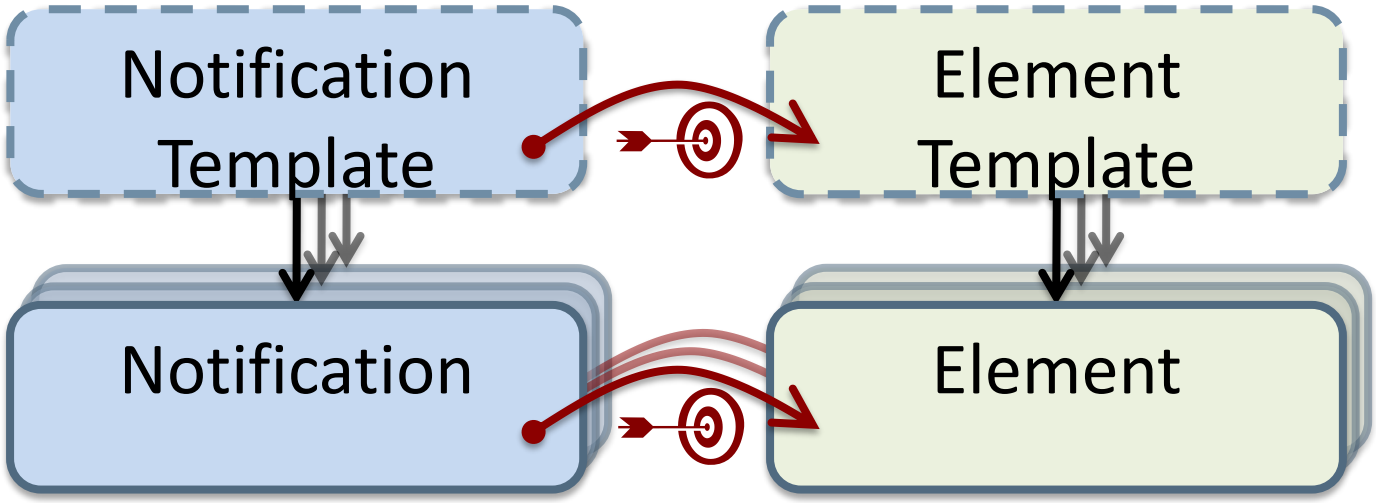
PI AF support for PI Notifications 1.1

- Performance Improvements (start-up and retrieval)
- Notification Templates enable rapid and automatic creation of maintainable notifications



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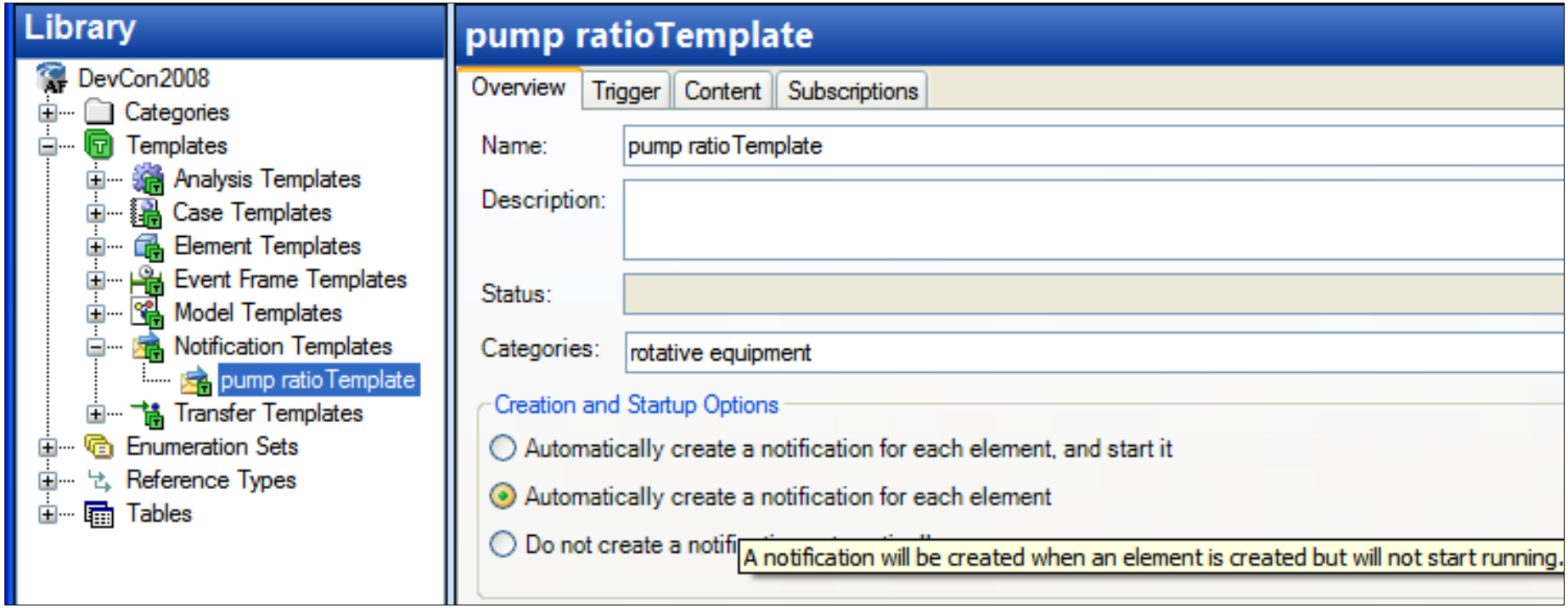
New with the PI Notifications 1.1 release

- Notification templates
  - Automate the creation and maintenance process



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New with the PI Notifications 1.1 release

- Native Office Communication Server 2007 R2(OCS)delivery channel
  - v1.0 (*Released*)
  - 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
- Can use Email service to send an SMS message (offered by most wireless providers)

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The Visuals

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The Visuals within the PI System

The Server | The Analytics | **The Visuals**

Local Computer

Mobile Device or Browser

	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

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Requests Addressed in PB 3.1 (*Released*)

- 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

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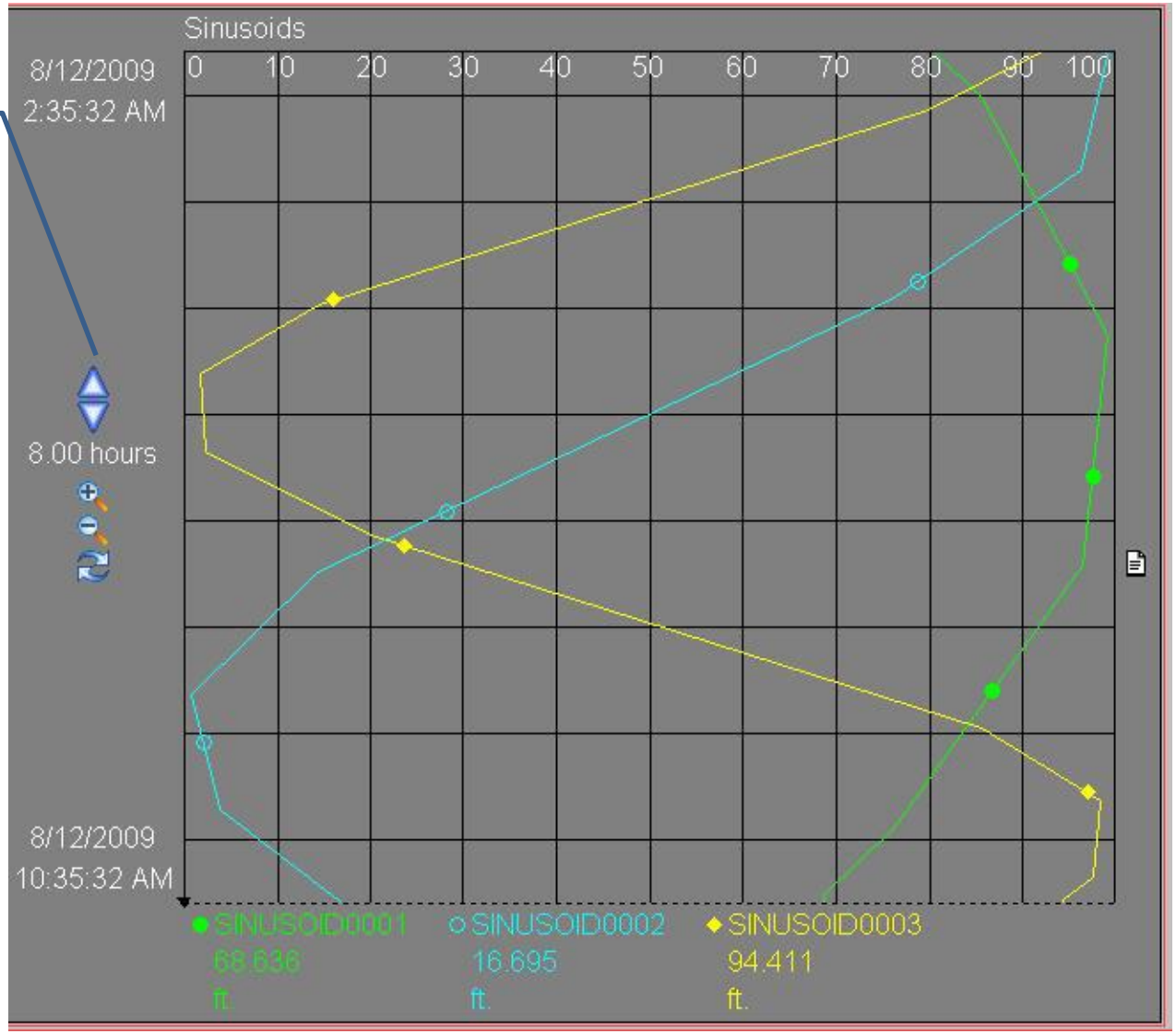
Trend Formatting

Scroll
Zoom
Revert



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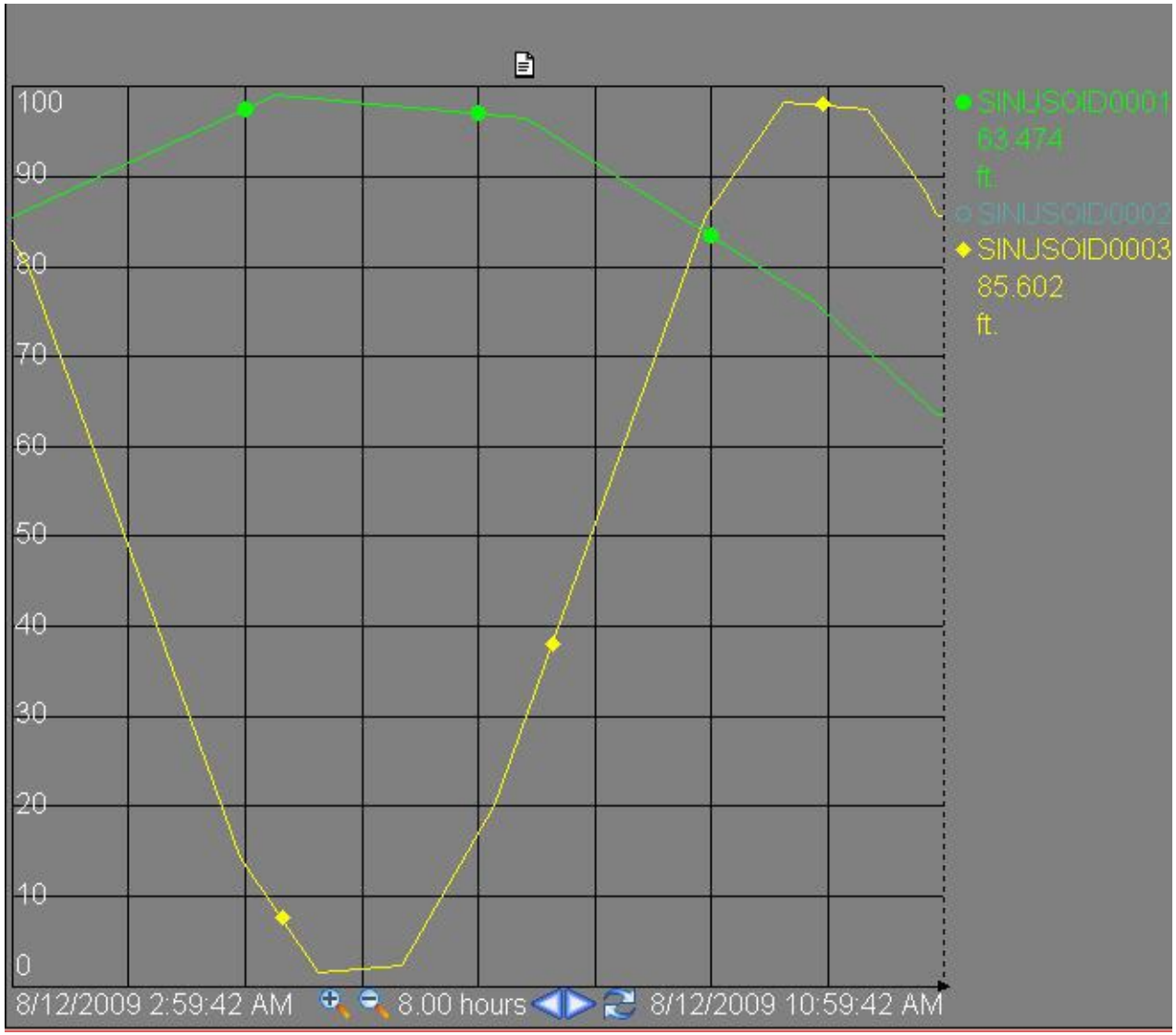
Hide/Show Individual Traces



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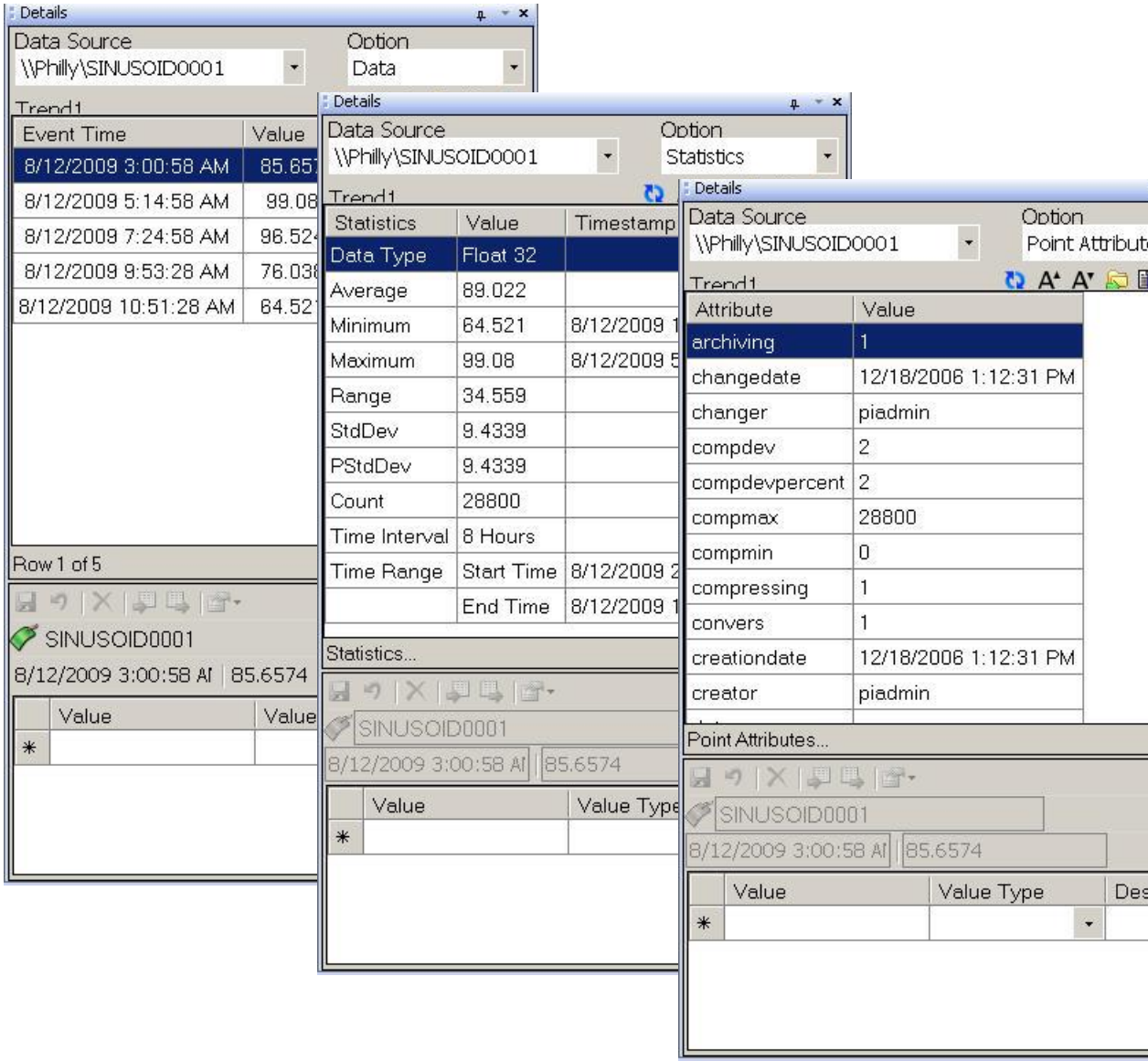
Details Pane

- Data
- Statistics
- Point Attributes



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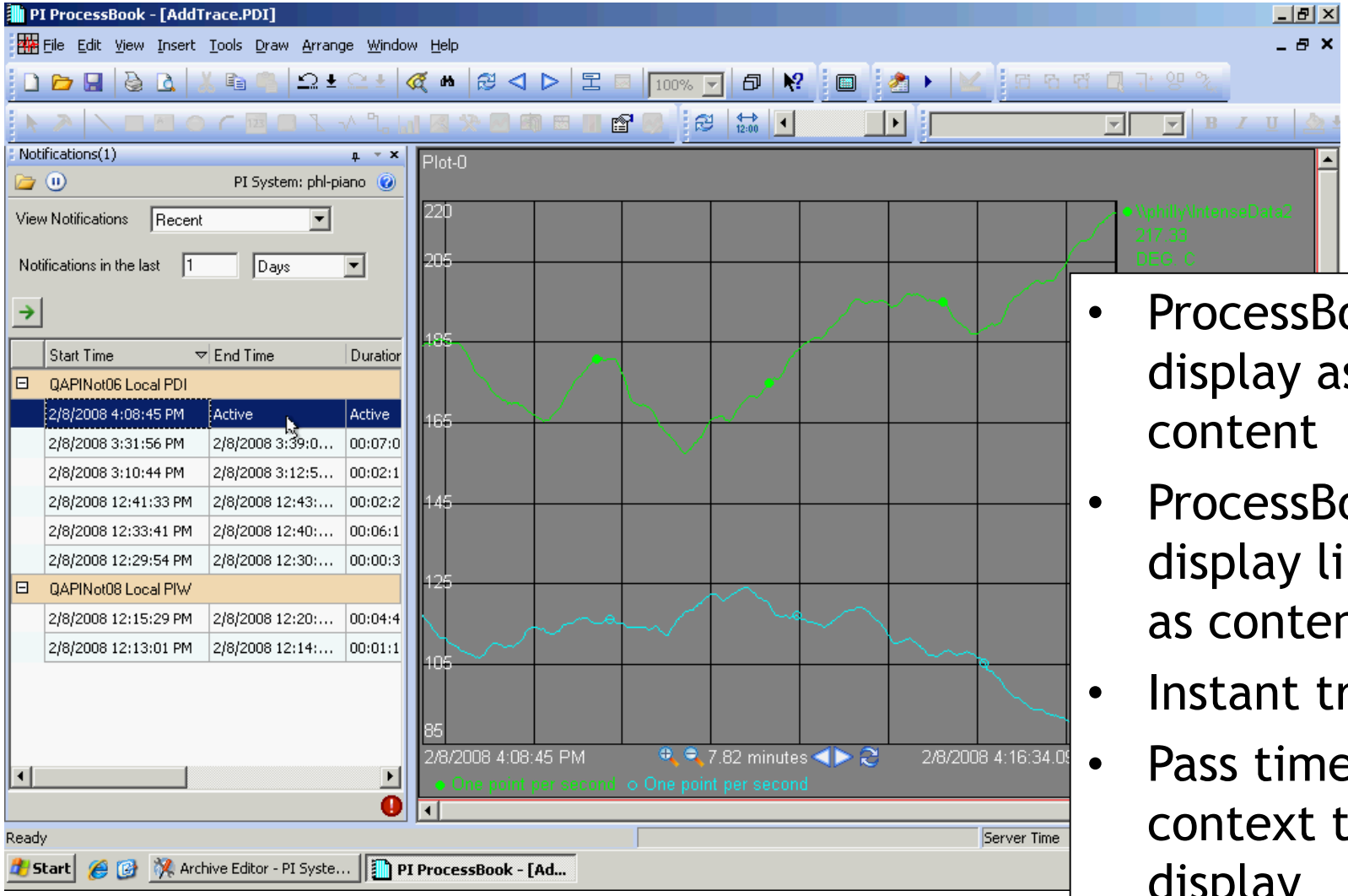
PI Notifications



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

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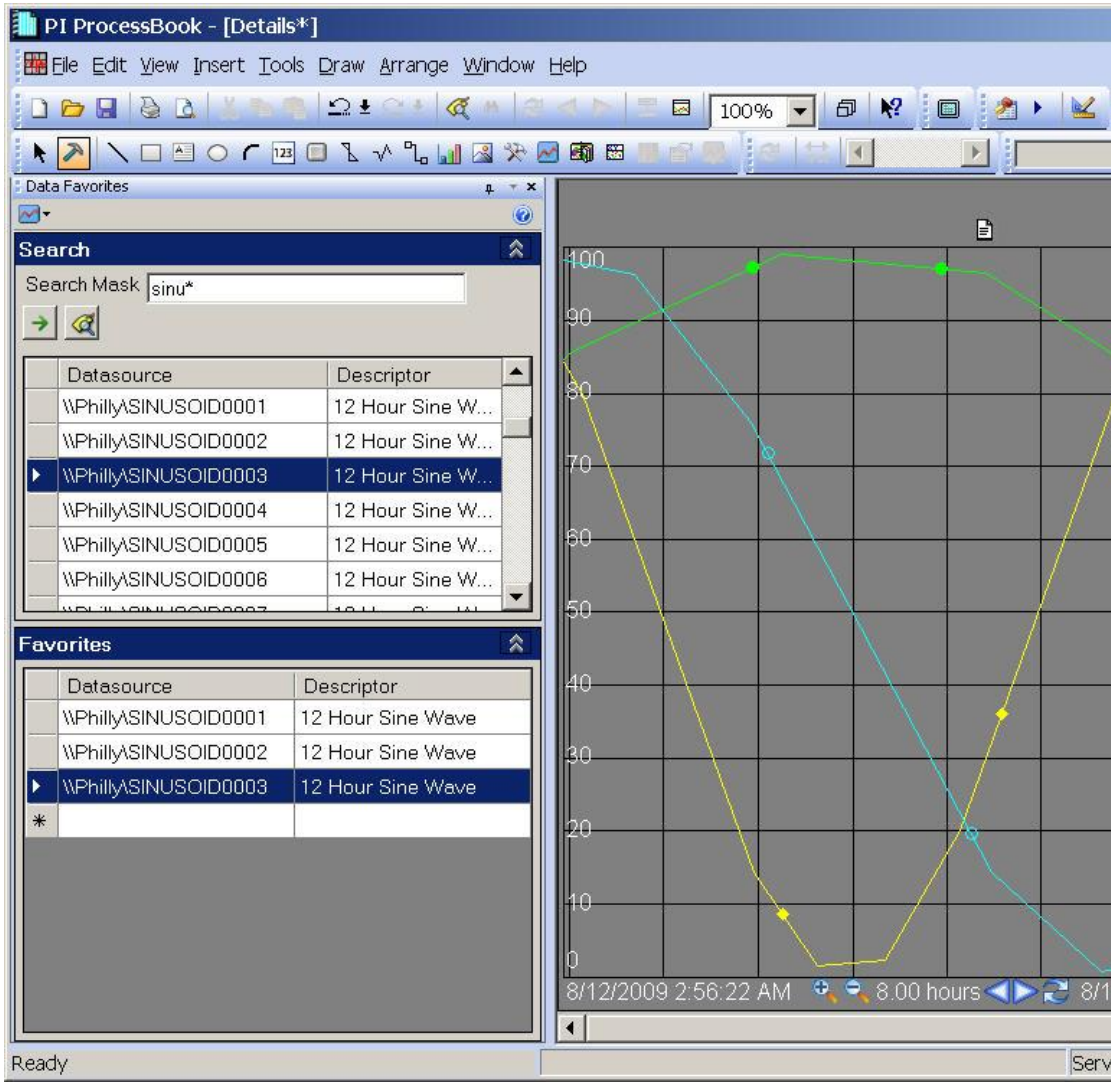
Data Favorites

- Search
- Create new Symbols
- Drag and Drop
  - To Display Elements
  - From Search
  - From Favorites
  - To Other applications (Microsoft Excel)
- Favorites



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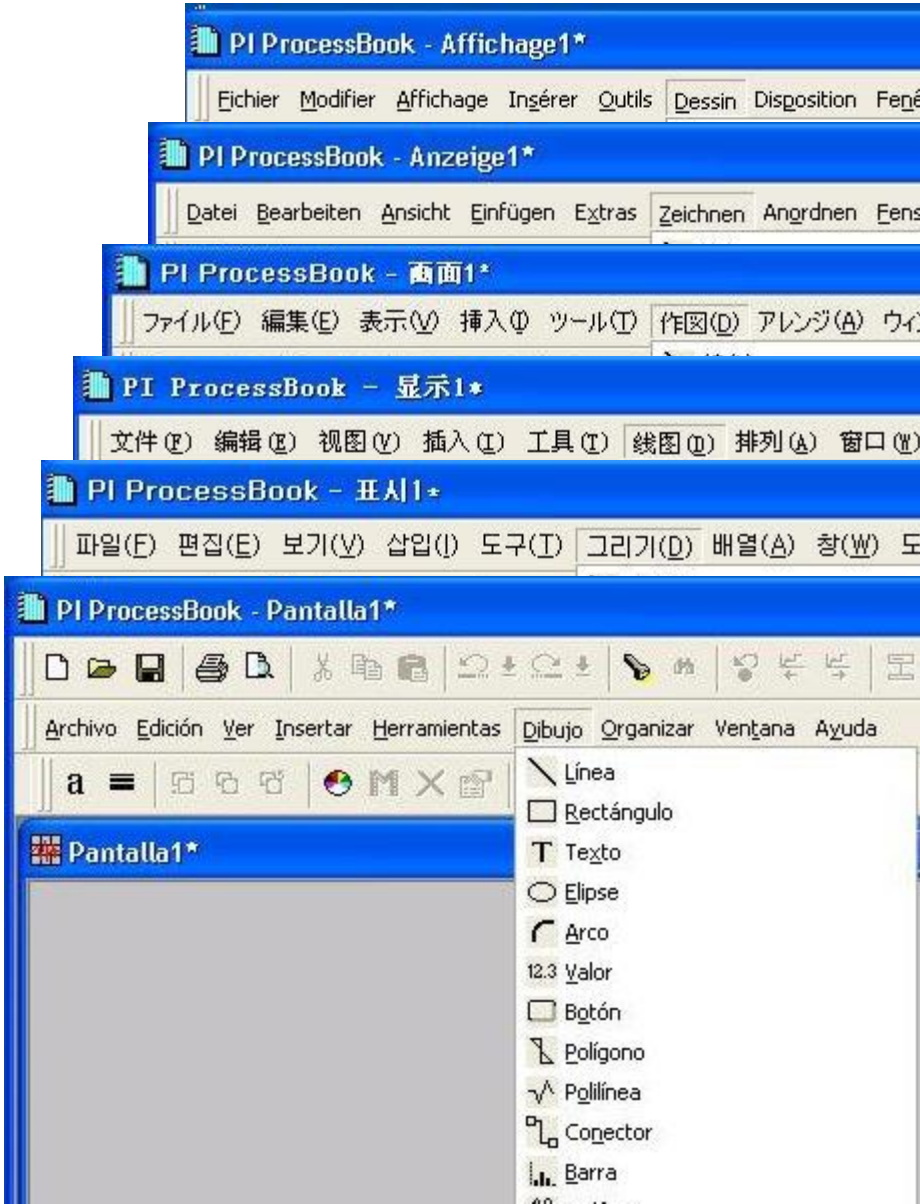
Localization

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



- BatchView
  - Japanese

PI ProcessBook Roadmap

- ProcessBook 3.1 (*Released – Oct 2008*)
  - Windows security integration
  - PI Notifications integration
  - Trending enhancements

- ProcessBook 3.2 (*Released*)
  - AF Element Relative Displays
  - Display Playback
  - Display Browsing and Bookmarking
  - Office Communicator collaboration integration
  - Statistical Quality Control (SQC) symbol now included

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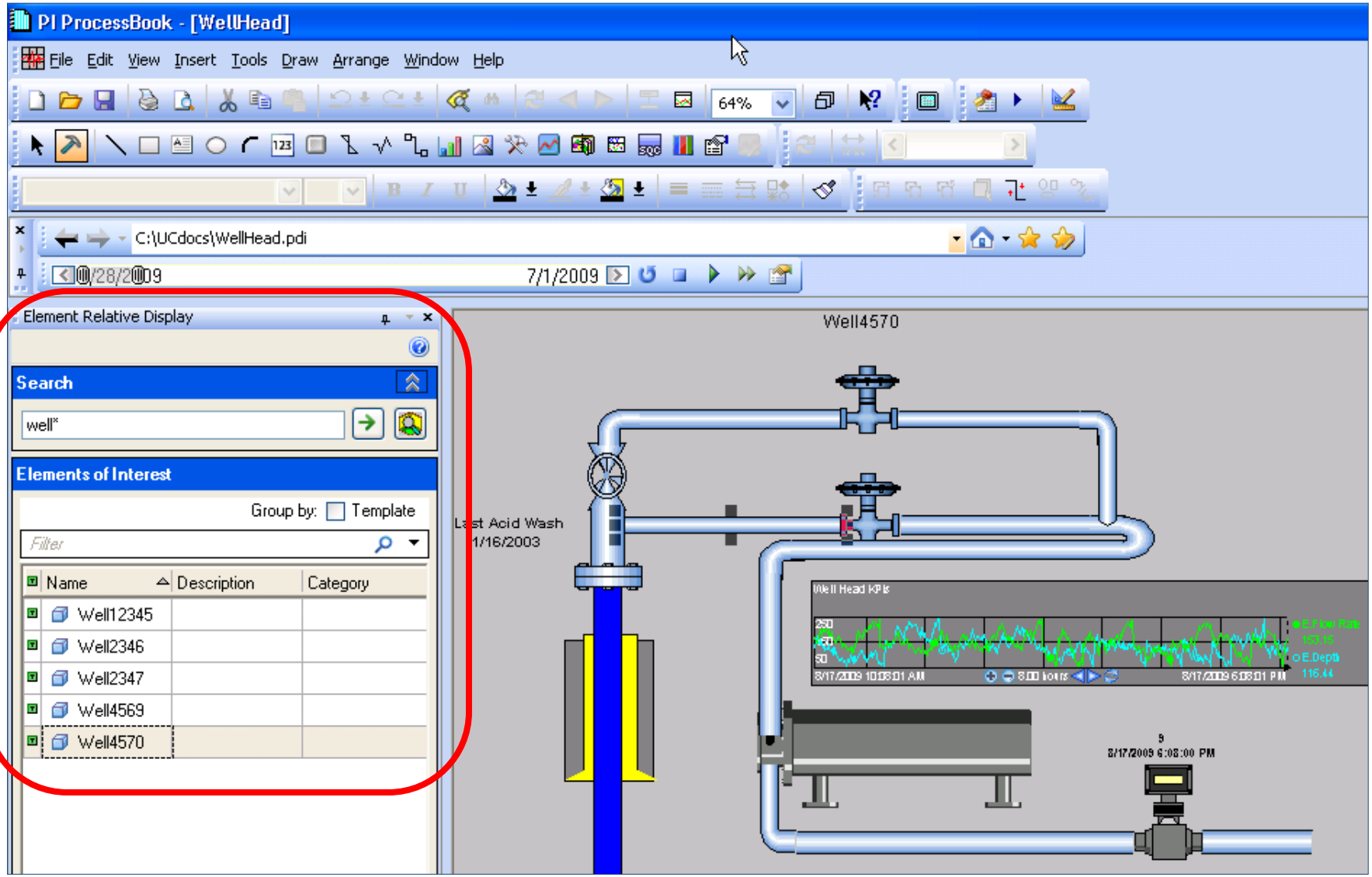
PB 3.2 - AF Element Relative Displays



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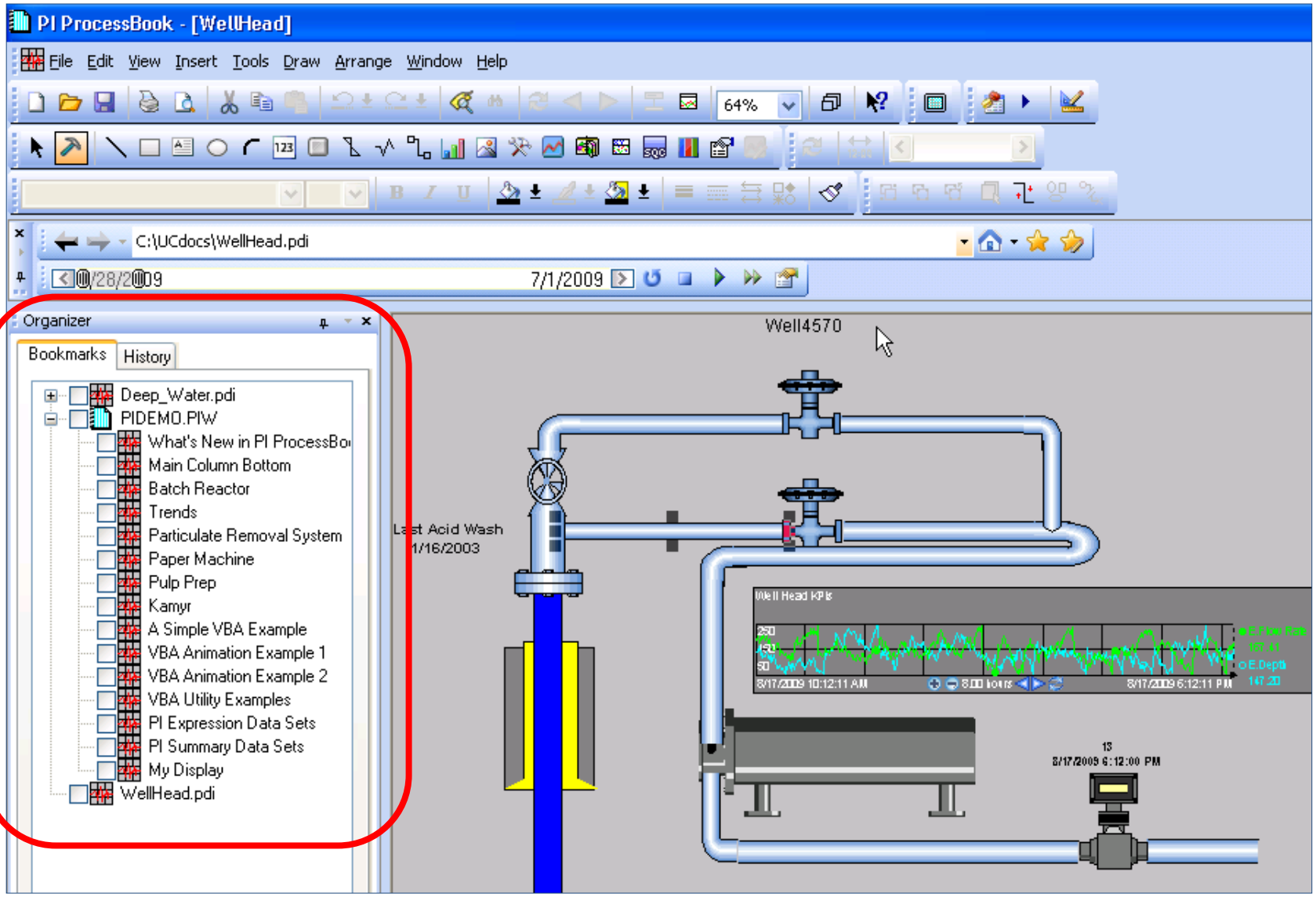
PB 3.2 - Display Browsing and Bookmarking



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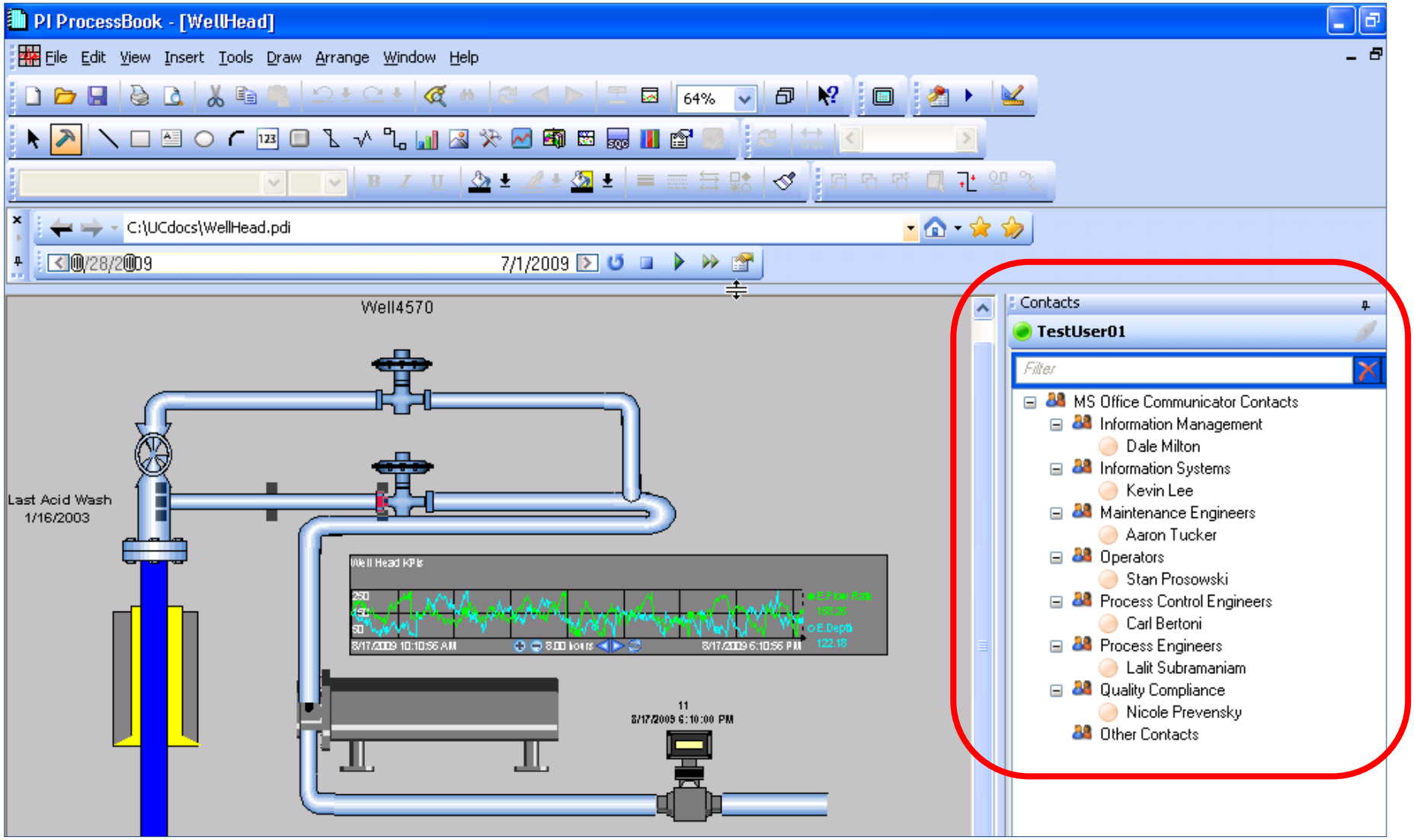
PB 3.2 - Office Communicator Integration



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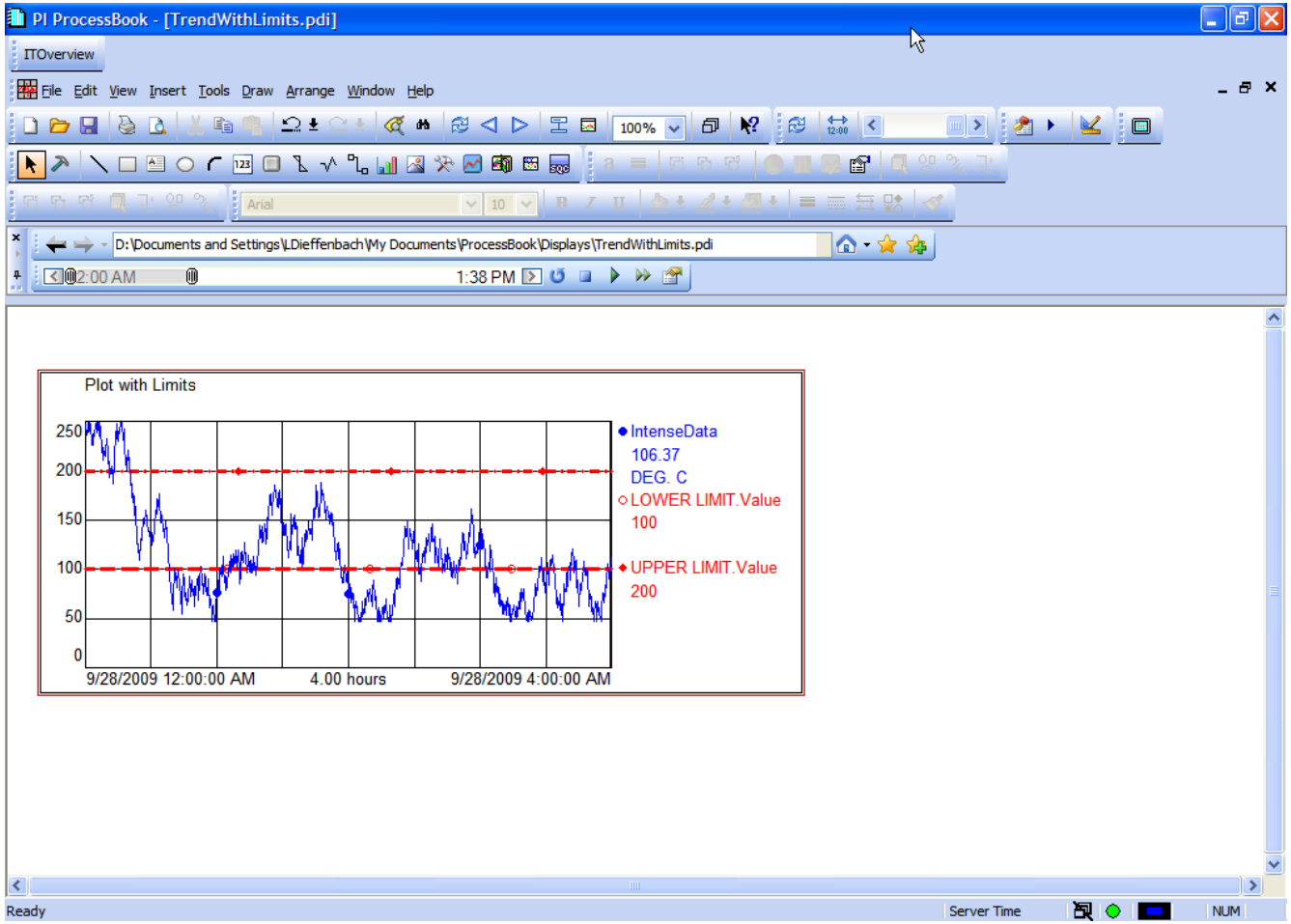
ProcessBook Playback Feature



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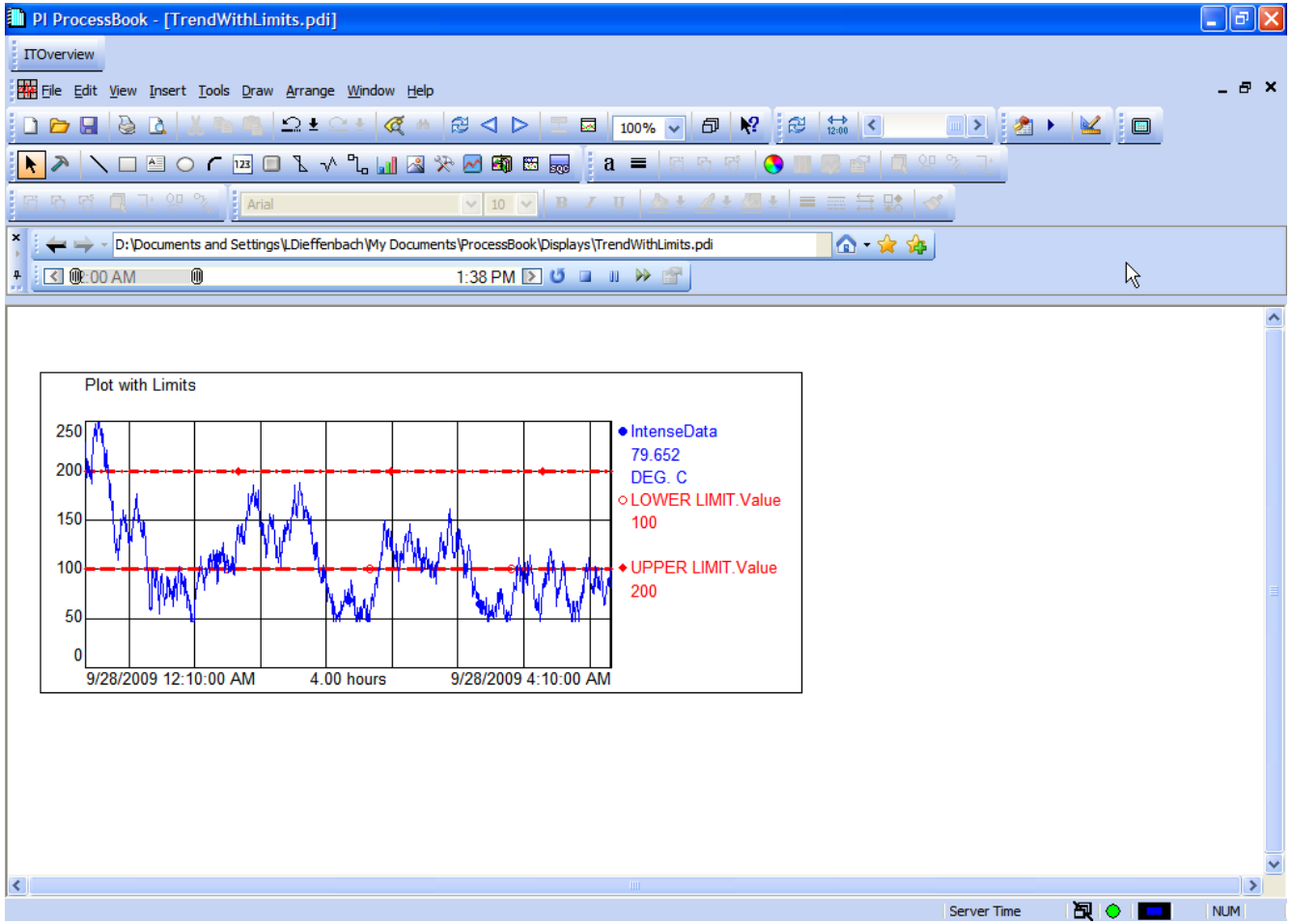
ProcessBook Playback Feature



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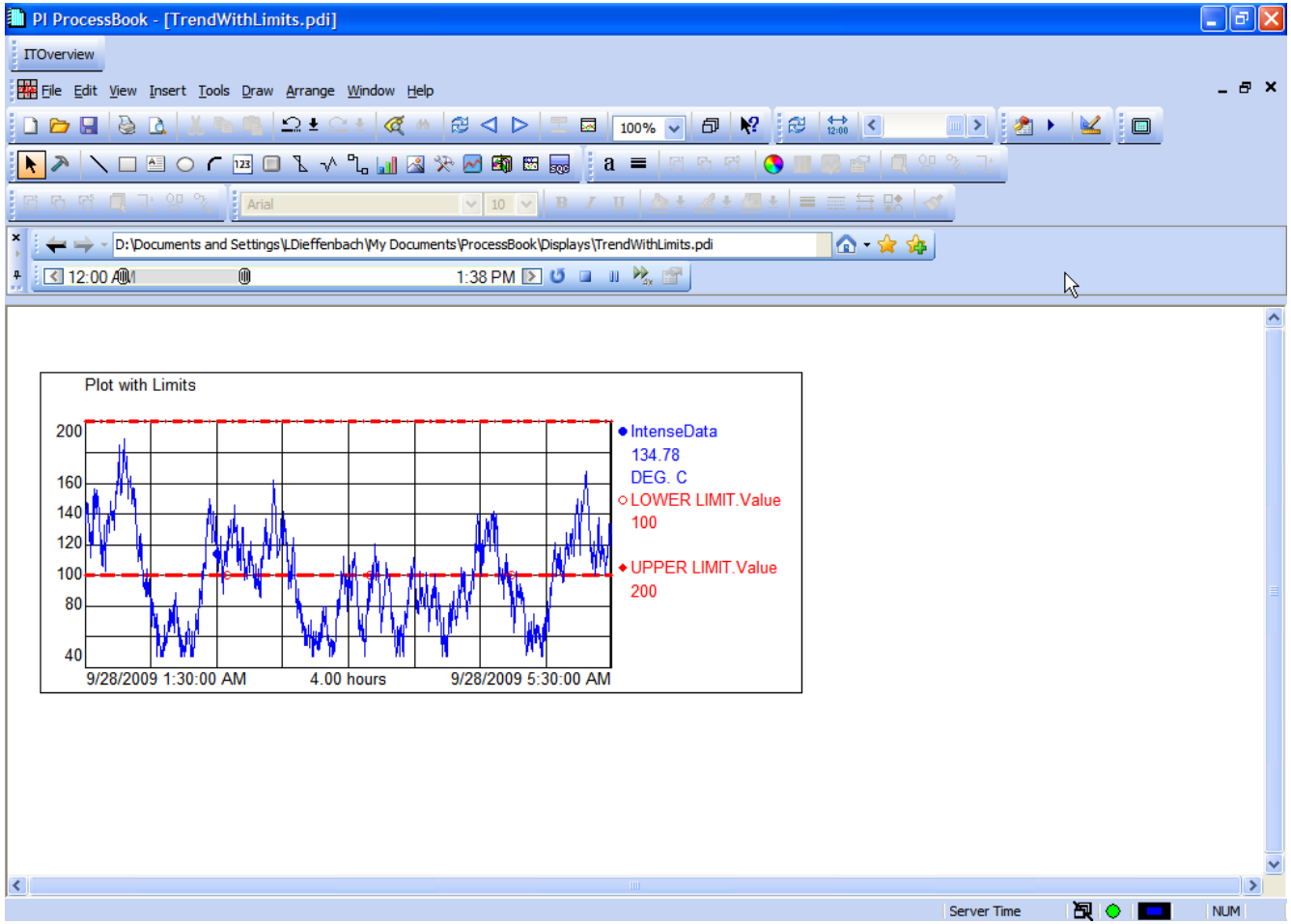
ProcessBook Playback Feature



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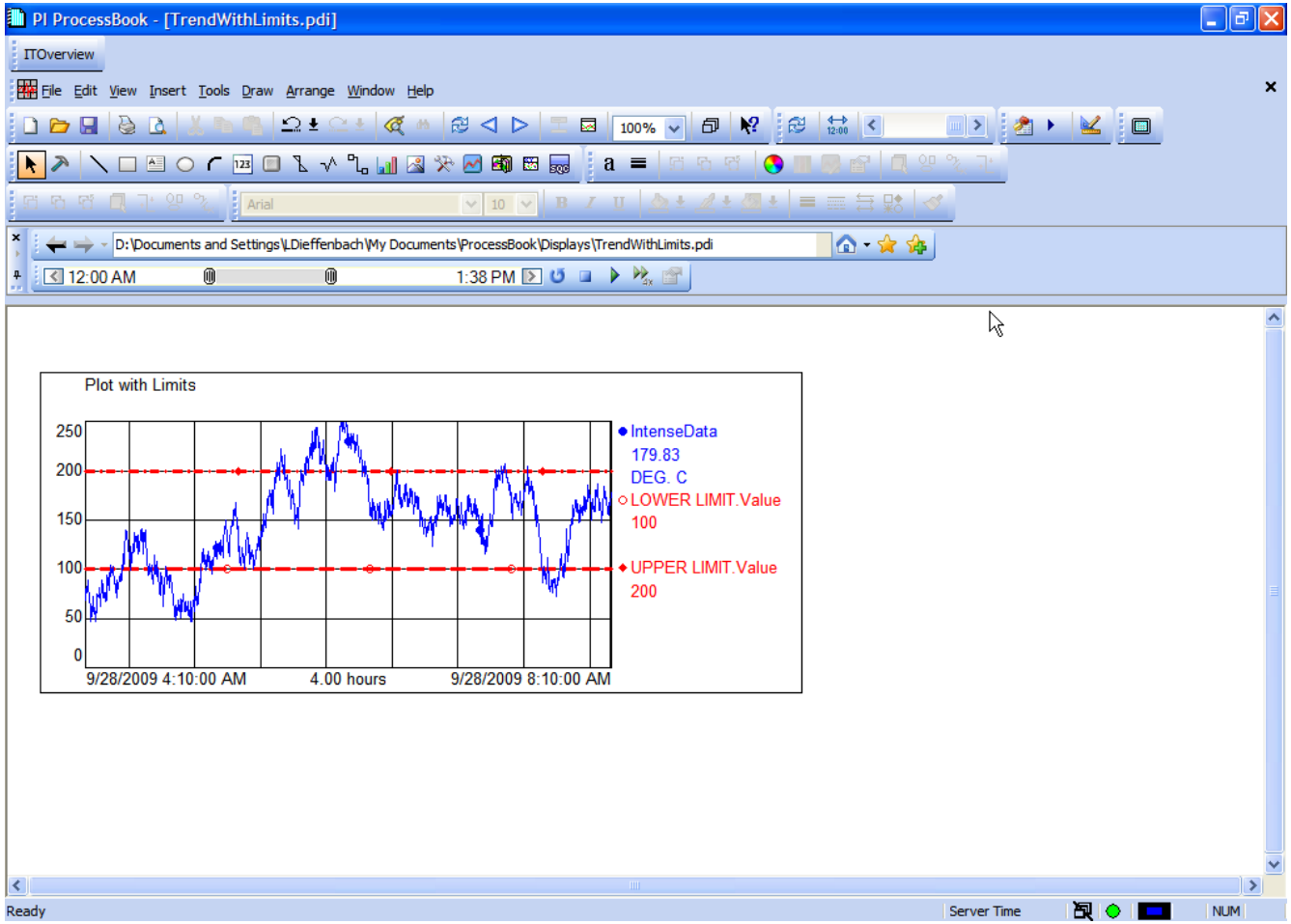
ProcessBook Playback Feature



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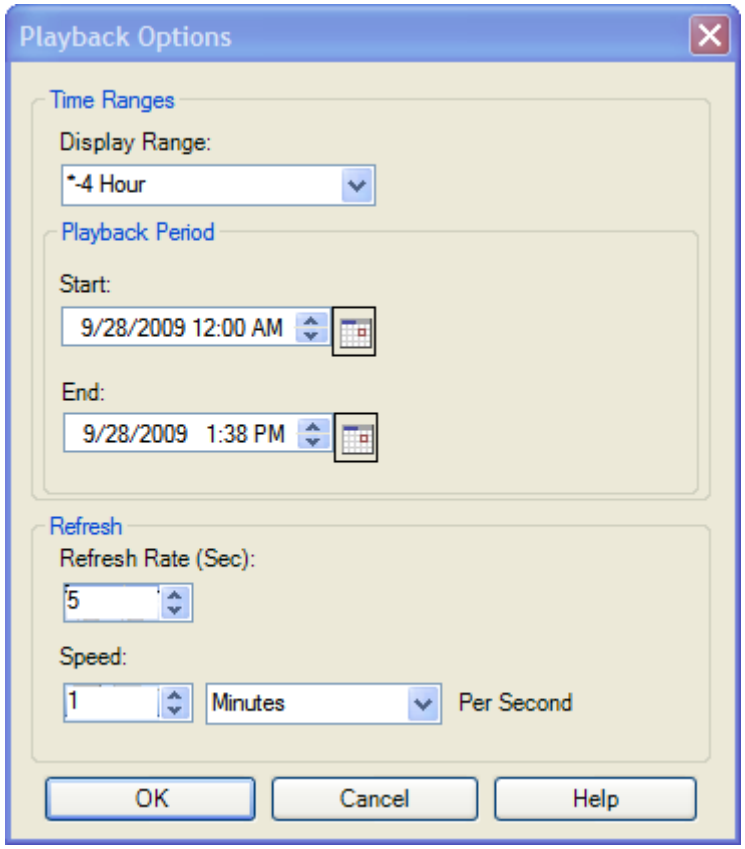
ProcessBook Playback Options



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DataLink

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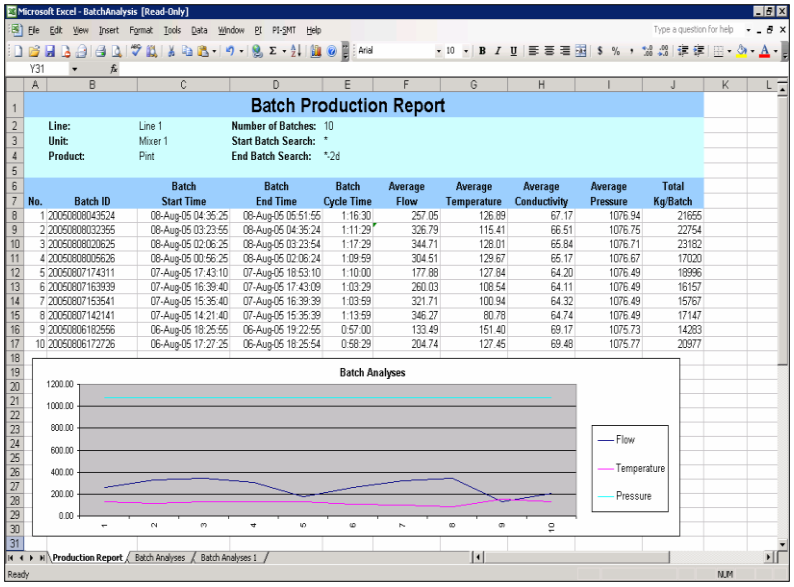
DataLink and DataLink for Excel Services

PI DataLink:

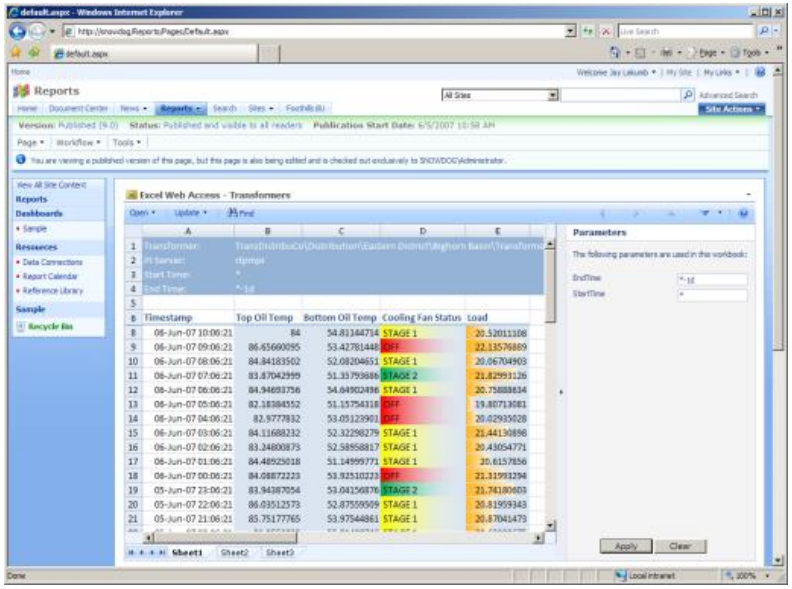
- Excel add-in for access to real-time and historical PI data

PI DataLink for Excel Services (DLES):

- DataLink spreadsheets on the Web



DataLink



DataLink for Excel Services

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DataLink and DLES Roadmap

- 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
  - Better Business Intelligence Support
  - Pivot Tables / Slicers

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PI WebParts / iViews

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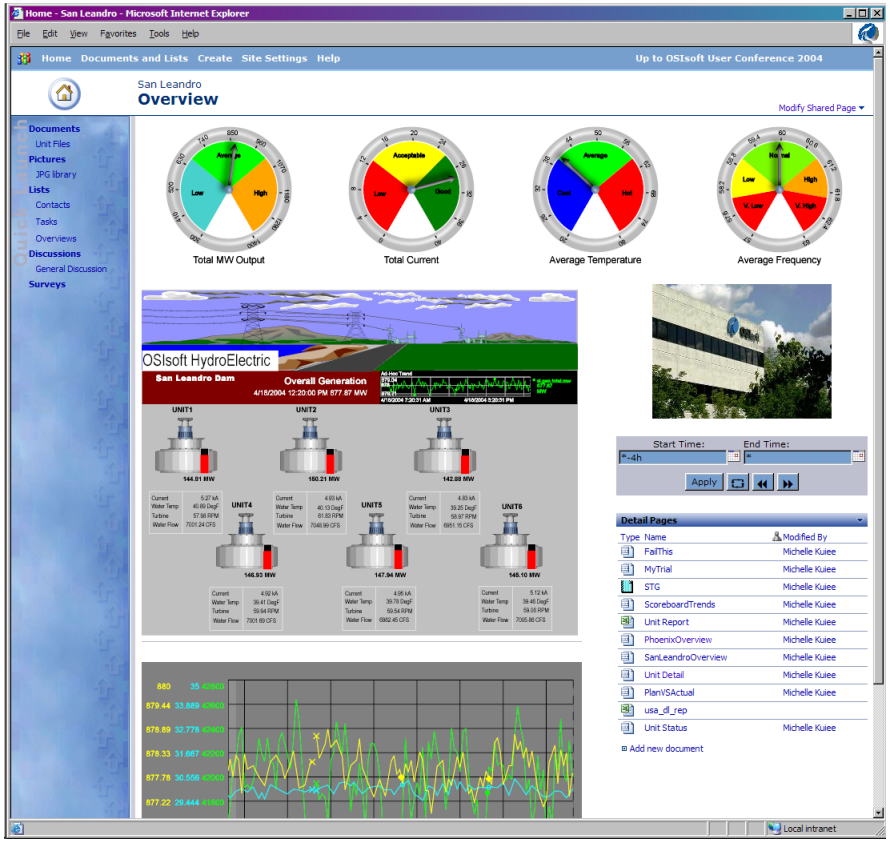
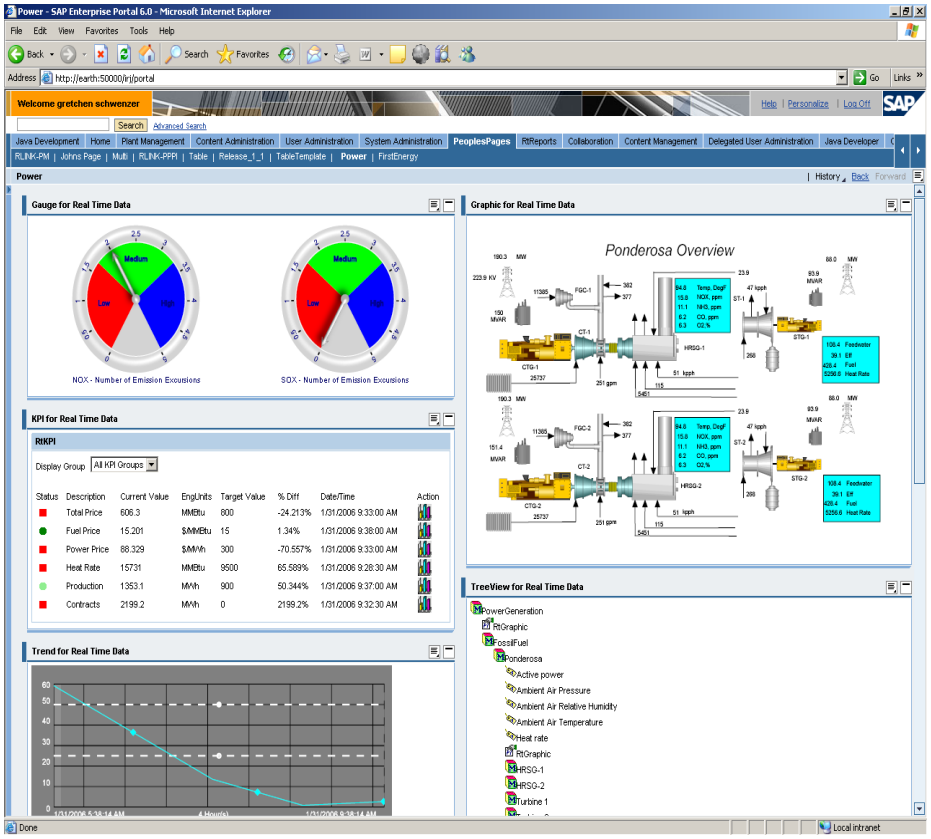
Typical Uses

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

PI WebParts example



iViews example



iViews example

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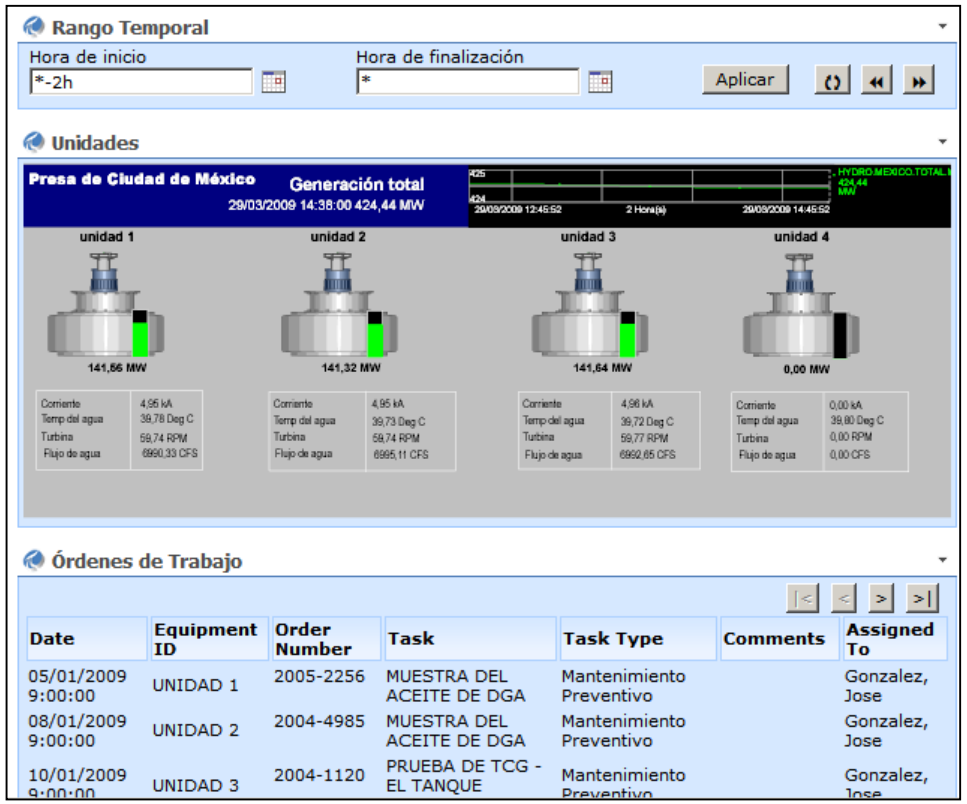
RtWebParts today …

- RtWebParts 2.2 *(Released Sept 2008)*

- 8 Language Packs *(Released Mar 2009)*
  - Japanese
  - Simplified Chinese
  - Korean
  - French
  - Brazilian Portuguese
  - German
  - Spanish
  - Russian



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PI WebParts Roadmap

- 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 (2H 2010)
  - Support for Office 2010
  - Enhanced AF Support
  - Support for Microsoft Silverlight

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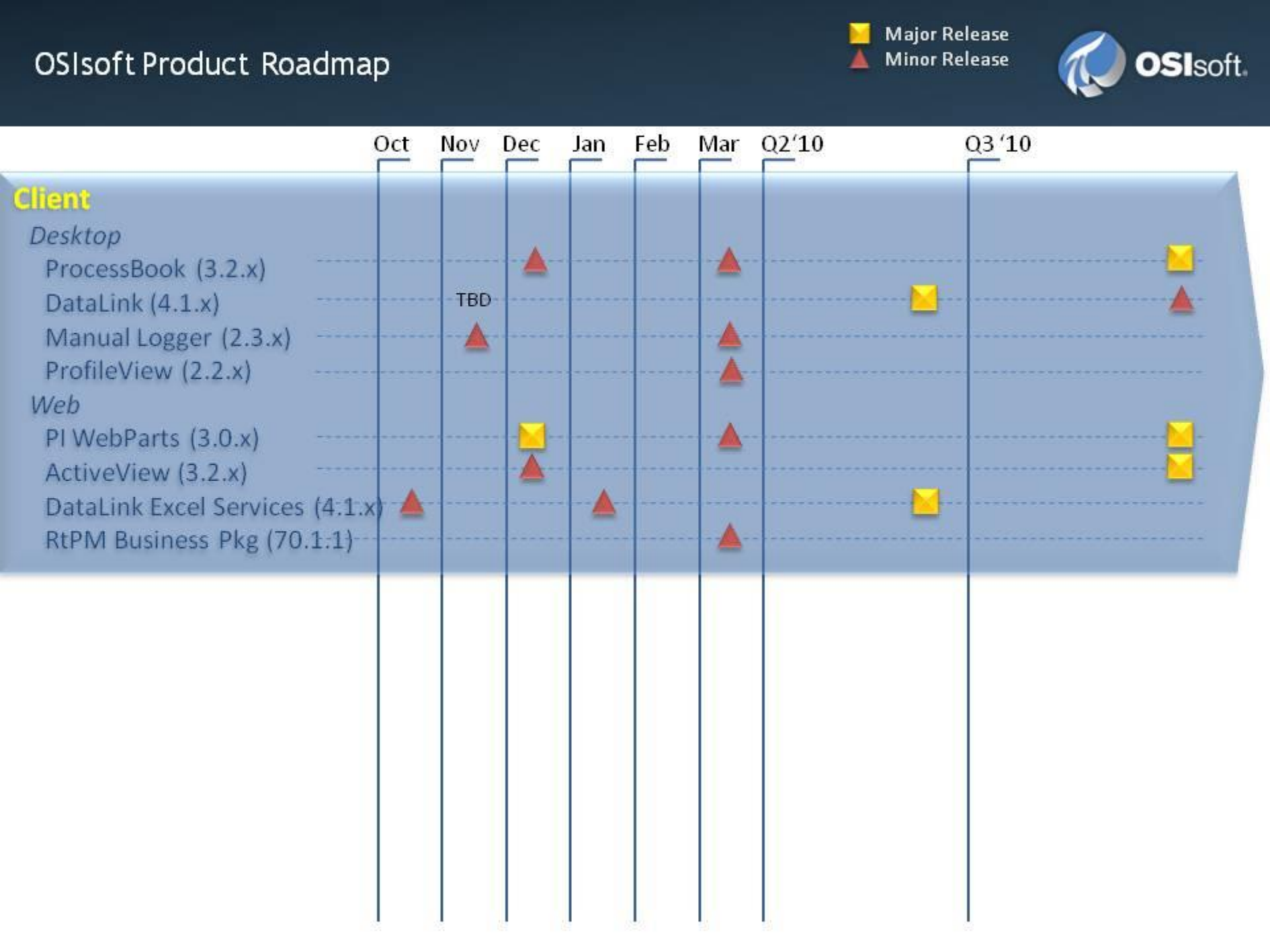
OSIsoft Product Roadmap



PI Roadmap – Important Releases

Server:

- PI Server 3.4.380 – *Released* September 2009 (Security)
- PI AF 2.1 – (64-bit, HA) *Released* August 2009
- PI Notifications 1.1 – (OCS, Templates) *Released* Sept 09
- PI Data and Web Services – December 2009 (64-bit)
- PI Server 3.5 – 1Q 2010 (MDB to AF)

Clients:

- PI ProcessBook 3.2 – *Released* September 2009 (AF relative displays, Usability)
- PI WebParts 3.0 – 4Q 2009 (64-bit, AF Support)
- PI DataLink 4.1 for Excel Services (64-bit)

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Thank you

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