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REGIONAL SEMINARS 2013

The Power of Data

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PI System Roadmap – Evolving the PI System

Presented by **Yung Wallace, Center of Excellence Engineer**

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Agenda and Expectations

- This talk assumes:
  - You know the PI System basics
  - You have heard about the PI System 2012 wave of products
  - You want to hear about what is coming to the PI System in the 6-18 month horizon
- Very few specific dates
- All information is subject to change
- We want your feedback and suggestions!

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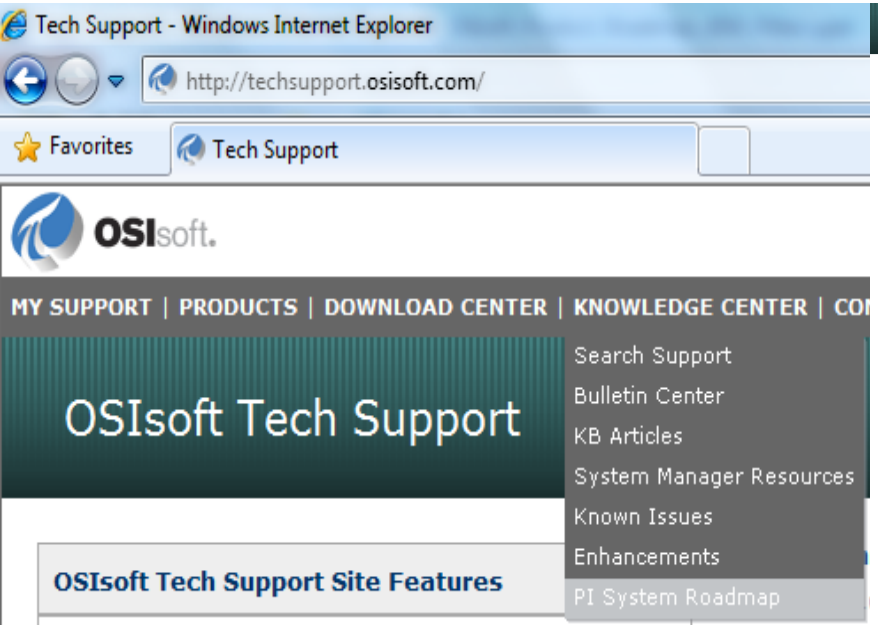
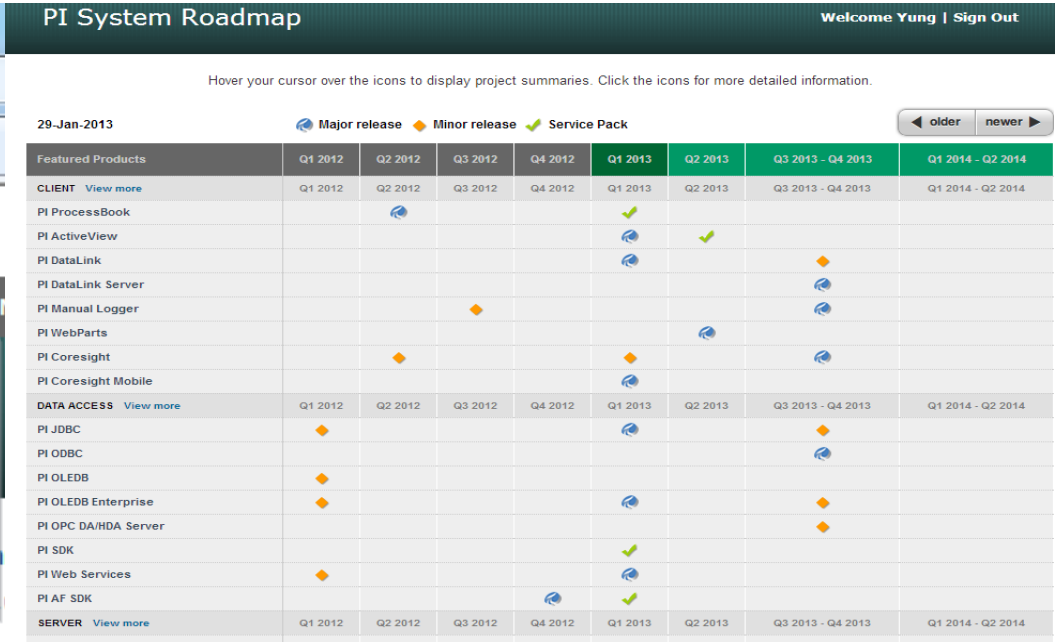
Stay Up-To-Date on the Web

- PI System Roadmap on OSIsoft Technical Support Site

http://techsupport.osisoft.com/techsupport/NonTemplates/roadmap.aspx





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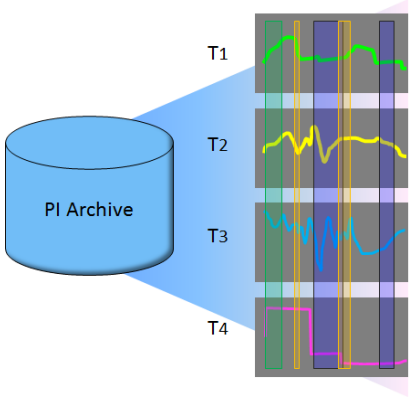
PI System Themes - Future

Asset-Centric PI

Manage data via Asset context – Reuse many times



Event Frames

Identify and use important events and related data

Mobile

Many Devices
Touch Centric
Role Focused

Cloud

More Data
Access Anywhere
Trans-Enterprise

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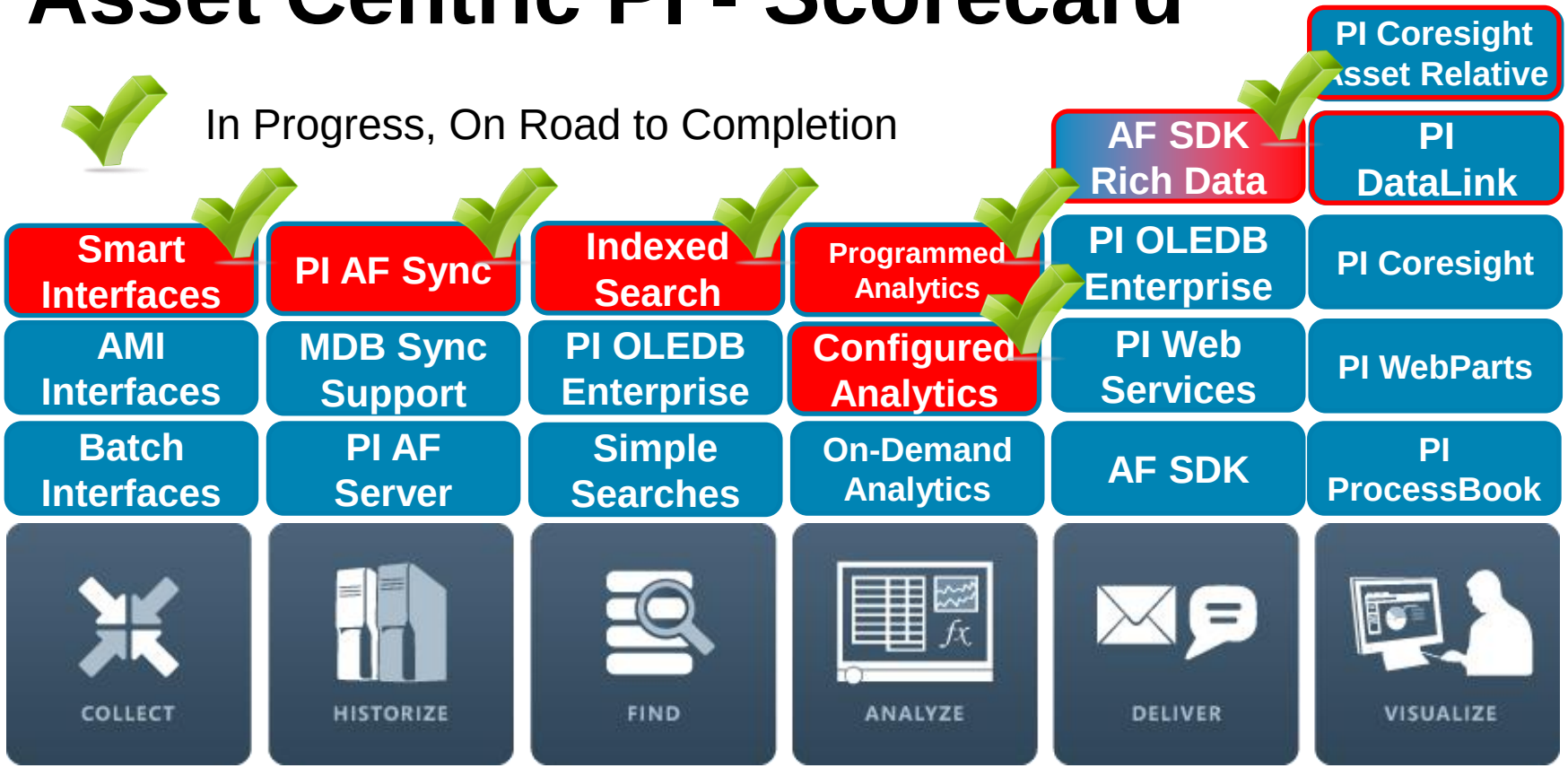
Asset Centric PI - Scorecard



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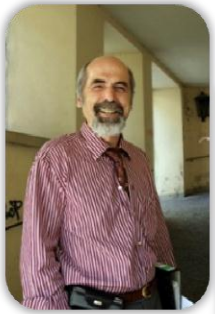
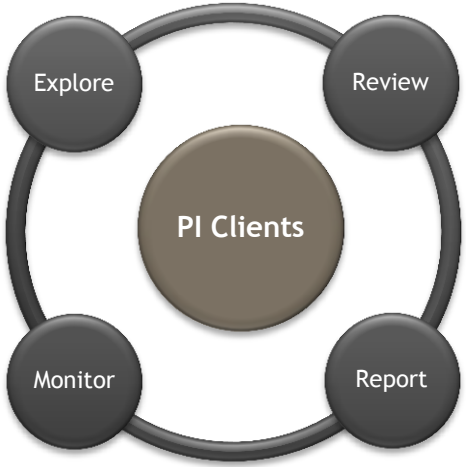
Visualization Landscape

PI Coresight:
Ad Hoc Analysis & Collaboration

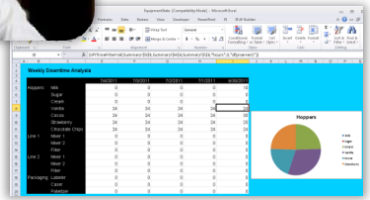




PI WebParts: Composite Apps, Shared broadly

PI ProcessBook:
Display authoring and Process monitoring

PI DataLink:
Reporting and table based analytics in Microsoft Excel



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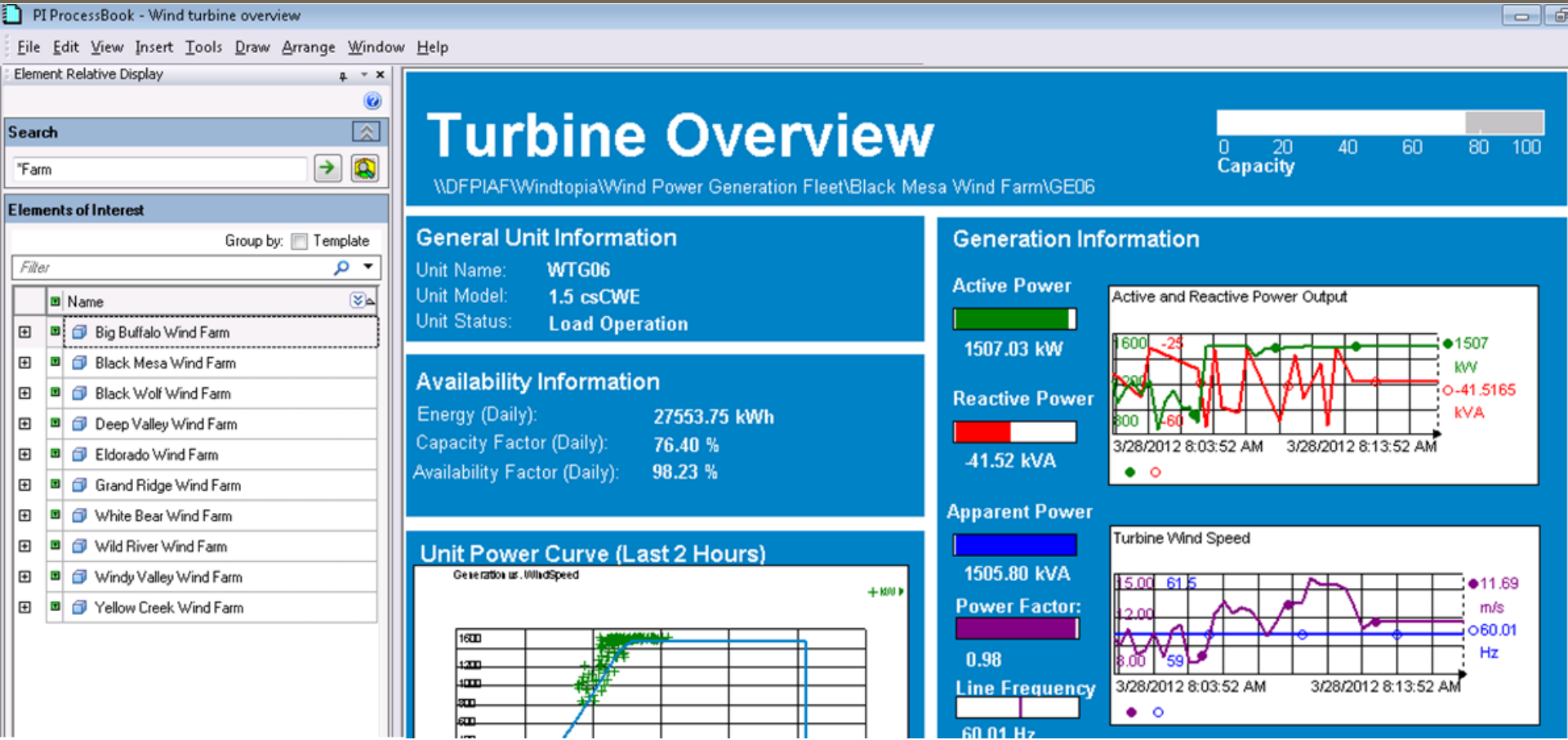
Asset-centric displays in PI ProcessBook 2012



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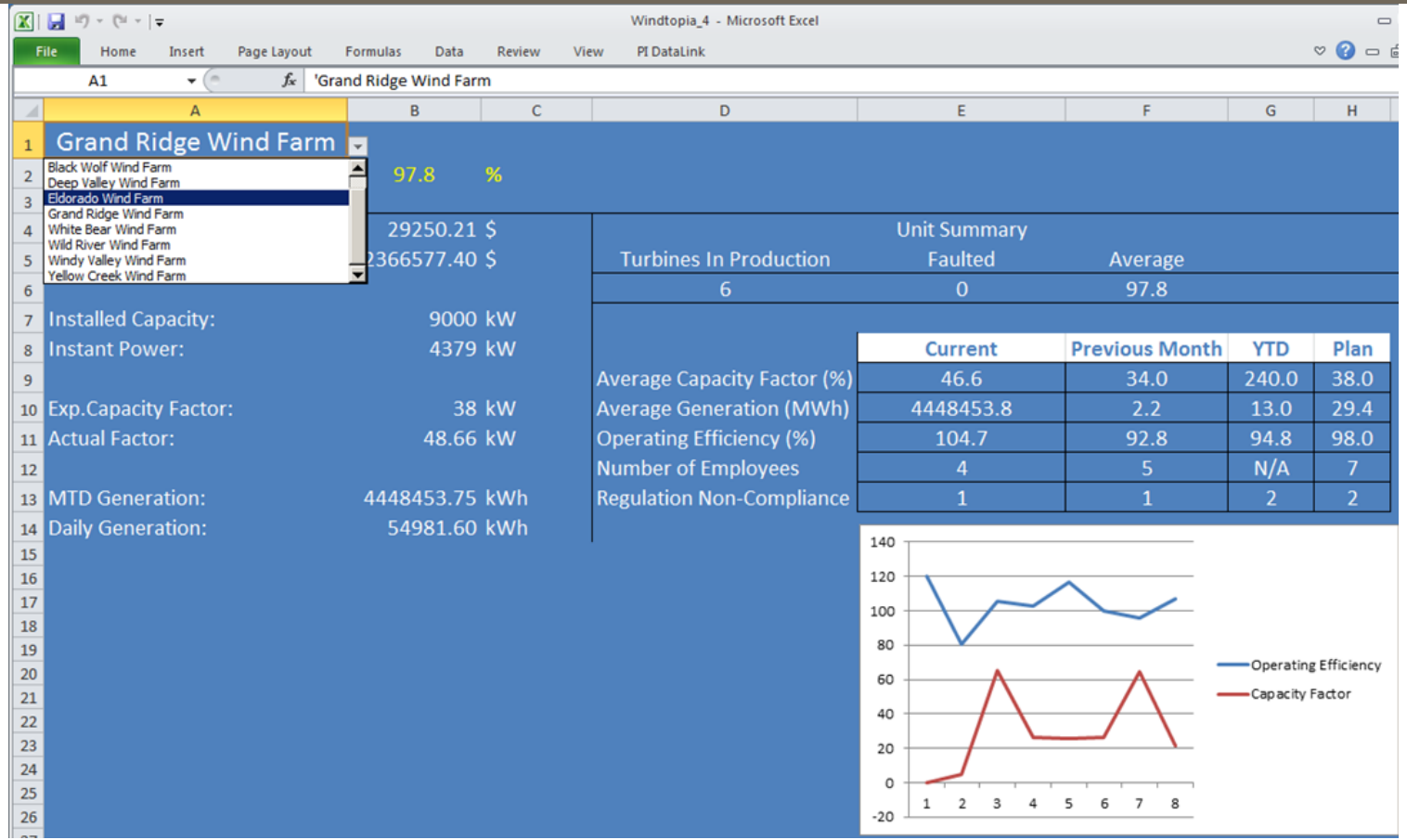
Asset-relative reports in PI DataLink 2013



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Consolidate and share with PI WebParts

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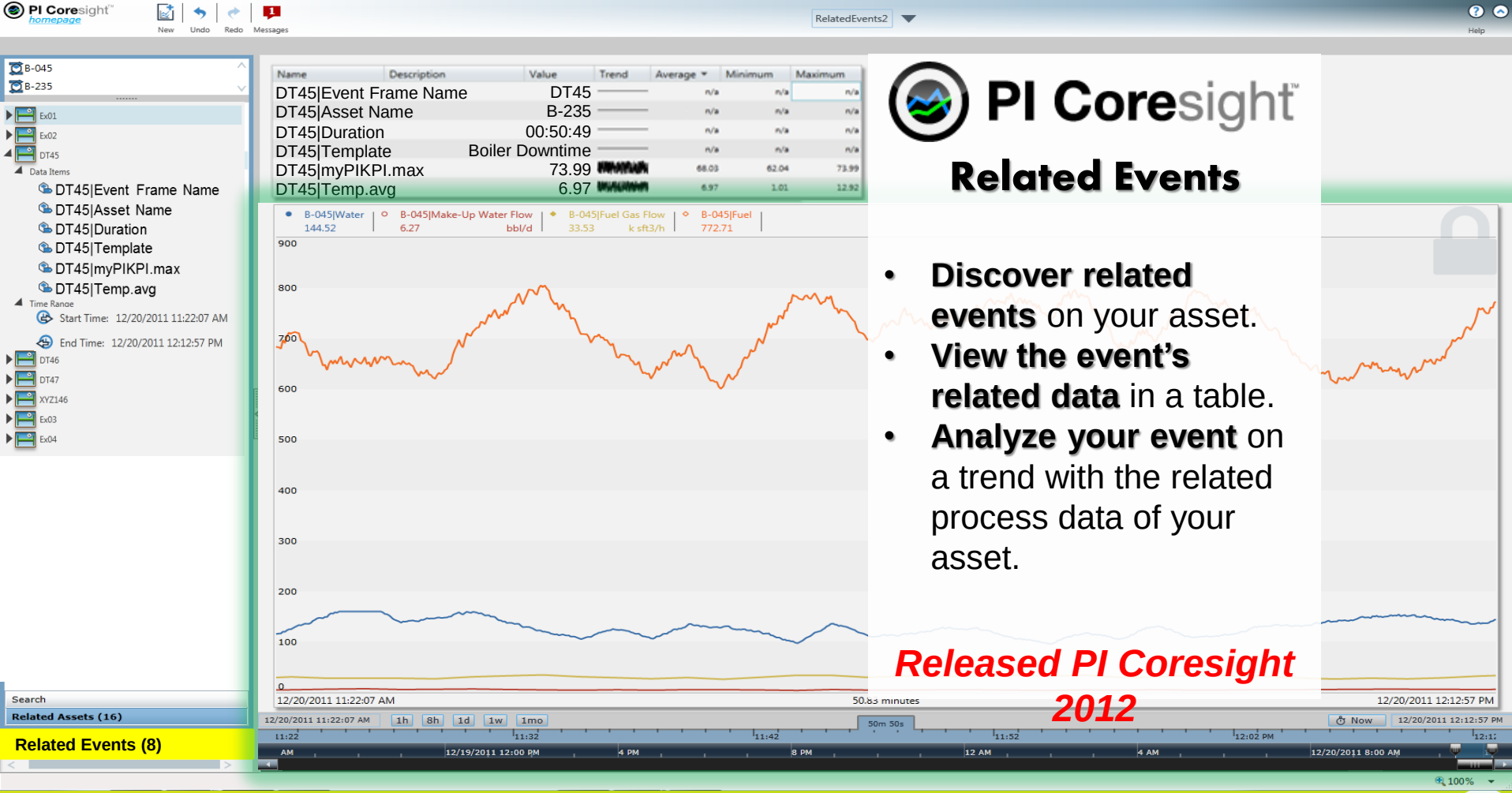

PI Coresight

Related Events

- **Discover related events** on your asset.
- **View the event's related data** in a table.
- **Analyze your event** on a trend with the related process data of your asset.

Released PI Coresight 2012

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AF to AF Scenarios

- Implement corporate standards
- Ensure commonality across enterprise
- Configuration changes, updates
- Event Frames and data to support analysis and KPIs

Templates

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Project Abacus

Configured and Programmed Calculations for PI AF

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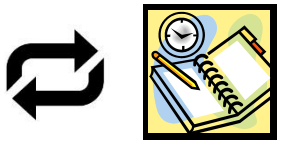
Project Abacus Use Case

Extruding Process

Boiler Efficiency = AVG(B1..Bn)

Boiler1

- Flow Out
- Fuel Flow Rate
- Efficiency = (Flow Out / Fuel Flow Rate * 3.14)



Boiler Template

Or myProgrammedCalc (Flow Out, Fuel Flow Rate)

Boiler2

- Flow Out
- Fuel Flow Rate
- Efficiency

Boiler3

- Flow Out
- Fuel Flow Rate
- Efficiency

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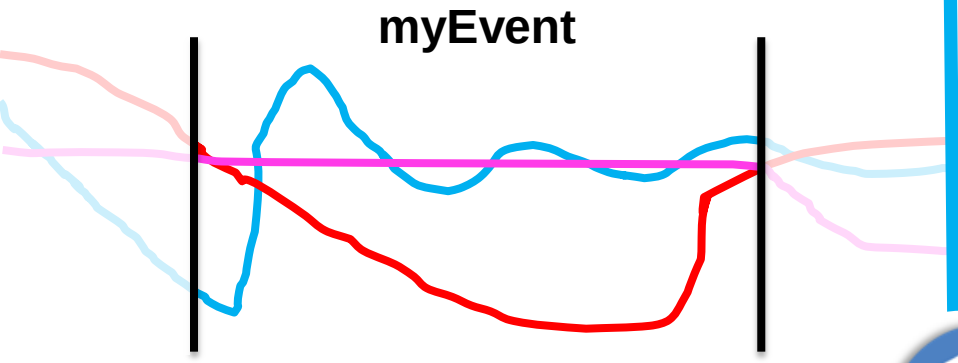
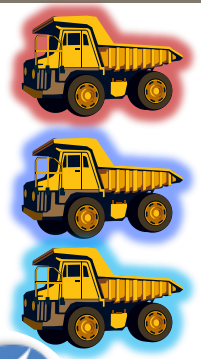
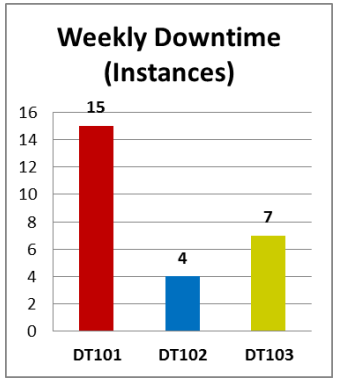
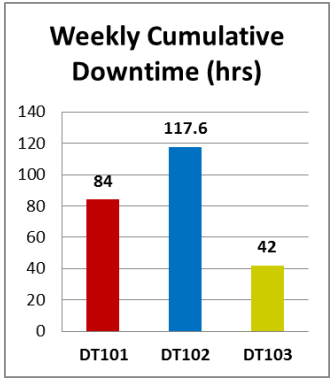
Simplify Data Analysis



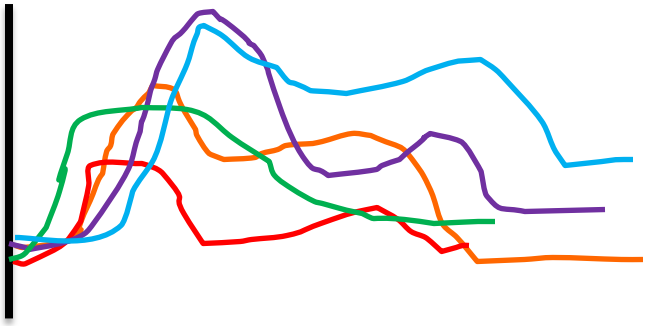
Perform Asset Comparisons







Event Overlay Trend (Temp)

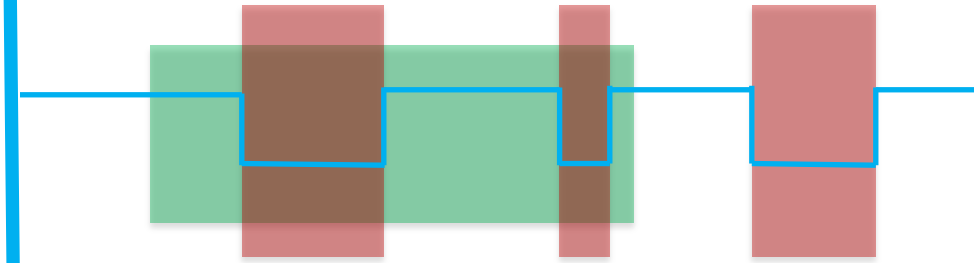


Name	Temp.Max
EF1	122.47
EF2	109.34
EF3	112.73
EF4	98.61
EF5	125.24

Downtime Events for Product XYZ

Product XYZ (1)

Downtime (2)



Perform Event Comparisons

Discover Event Interrelationships

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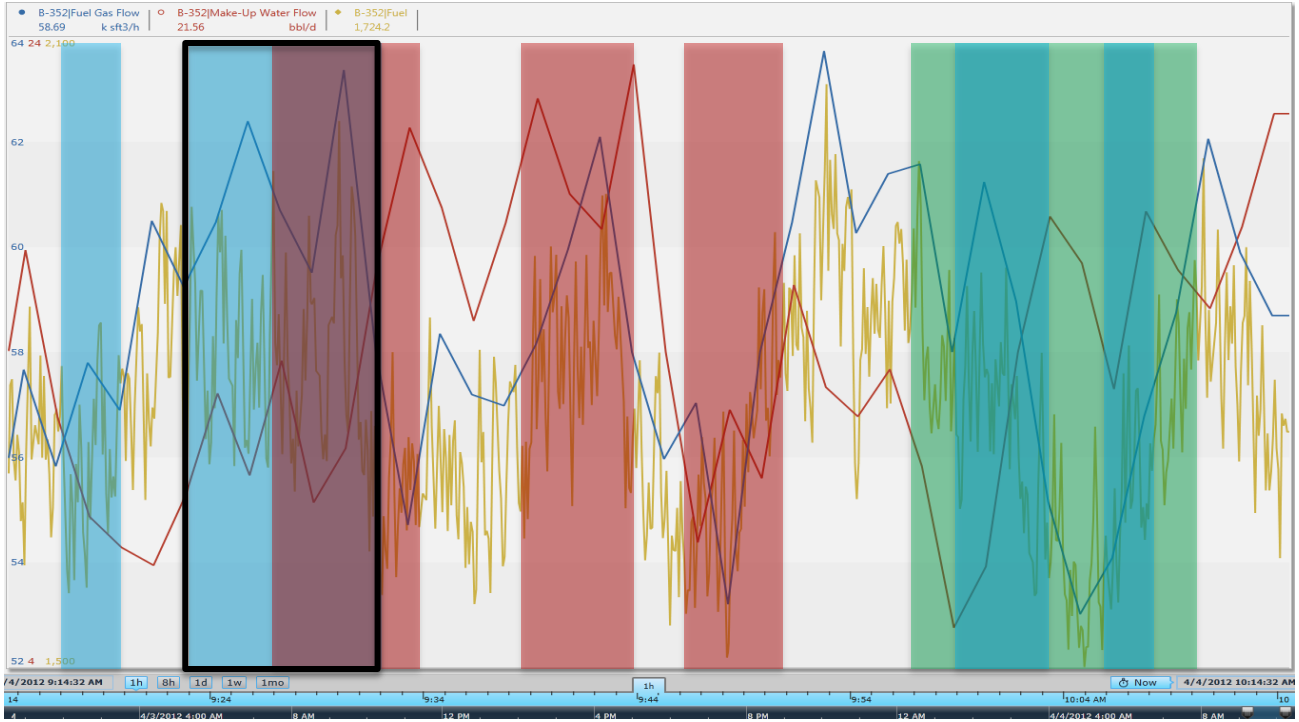
PI Event Frames is a core capability of the PI System to record important process or business *events* and help you find the *related data*.

Excursions (4) Downtime (3) Product XYZ (1)



Event Attribute	Value
Name	Ex 20121215-0002
Start	15-Dec-2012 10:35:02
End	15-Dec-2012 10:47:26
Duration	12 min, 24 sec
Asset	Boiler-459
Excursion Type	High Violation
Fuel Gas Flow.Avg	37.12 k sft3/h
Fuel.Start	823.48 k sft3/ton
myPIKPI.Max	47.19 bbl/d

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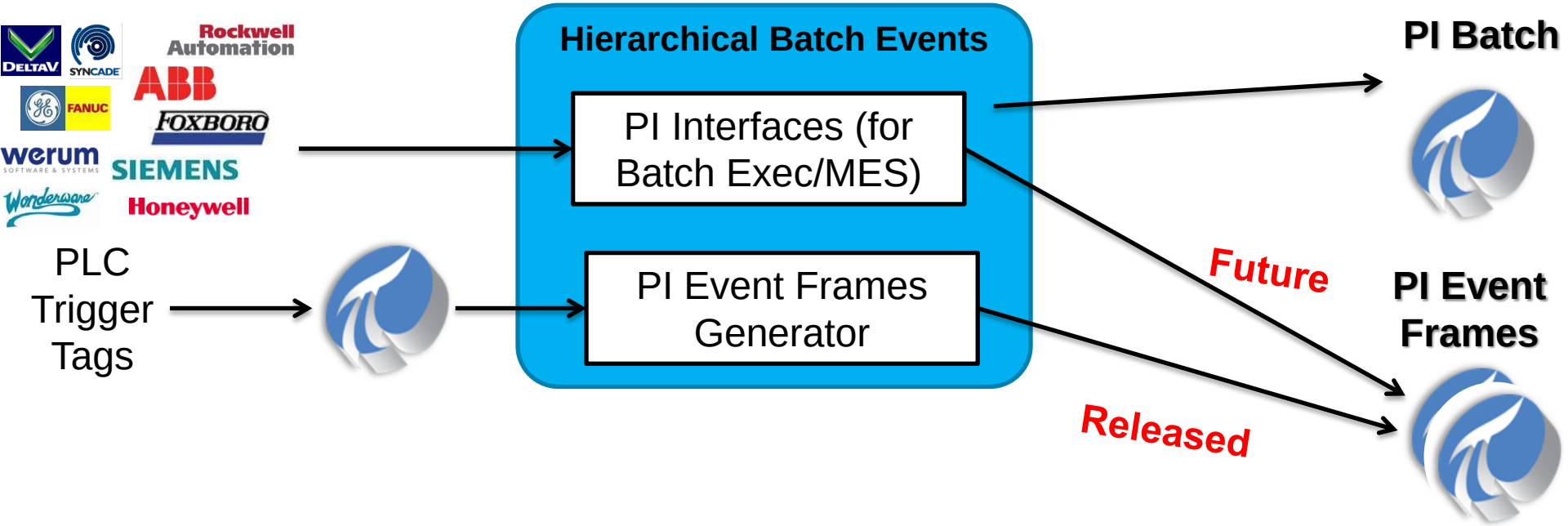
Event Generation – What will I use?



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Event Generation in Abacus

|Efficiency
|Fuel Flow Rate
|Flow Out

myEF
|Efficiency

Efficiency = (**Flow Out** / **Fuel Flow Rate** * 3.14)

myEF.Start = (**Efficiency** > LIMIT)
myEF.End = (**Efficiency** < LIMIT) AND (**Fuel Flow Rate** > 80)

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EVENT FILTERS

Duration

Longer Than — Shorter Than

0 m — 200 m

Category

All | None

- ✓ Excursions (4)
- ✓ Downtime (3)
- ✓ Product XYZ (1)

Template

All | None

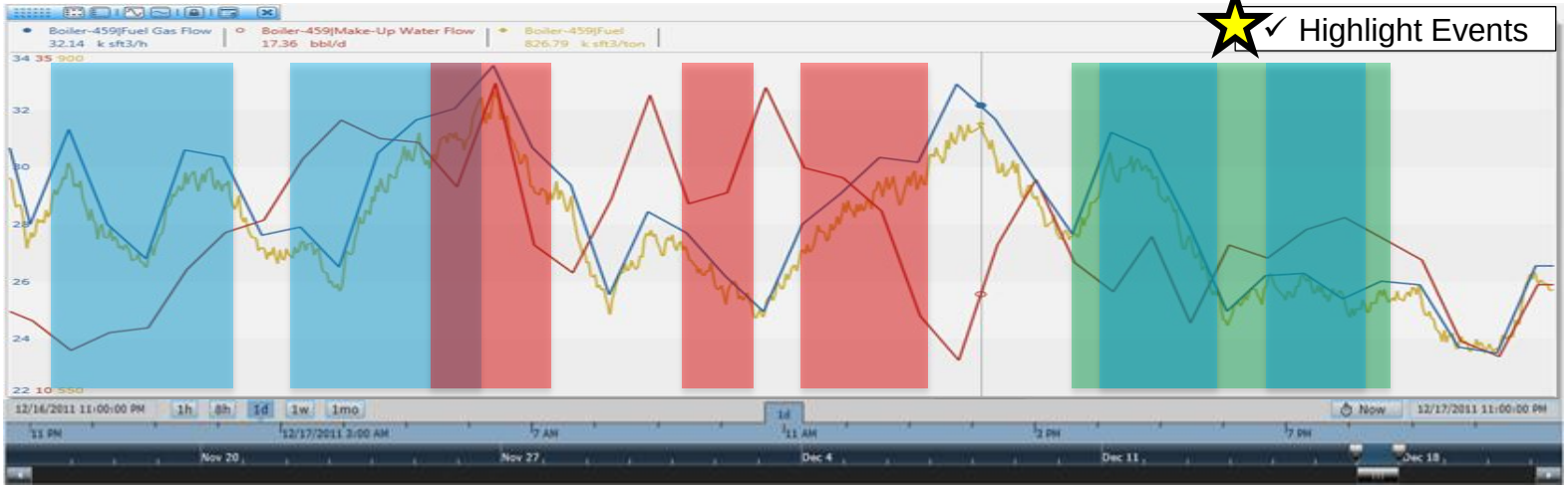
- ✓ Boiler Downtime (3)
- ✓ Boiler KPI Excursion (4)
- ✓ PIUnitBatch (1)

Temp.Max

Greater Than — Less Than

0 C — 100 C

Name	Start	End	Duration	Element	Category	Template	Reason Code	Temp.Max
Ex01	16-Dec-2011 23:05:48	17-Dec-2011 00:25:24	01:19:36	B-459	Excursions	Boiler KPI Excursion	High Temp	91.2
Ex02	17-Dec-2011 02:37:19	17-Dec-2011 04:12:07	01:34:48	B-459	Excursions	Boiler KPI Excursion	Low Pressure	54.1
DT45	17-Dec-2011 04:31:22	17-Dec-2011 05:20:34	00:49:12	B-459	Downtime	Boiler Downtime	Broken Thermo	32.4
DT46	17-Dec-2011 07:56:58	17-Dec-2011 08:19:46	00:22:48	B-459	Downtime	Boiler Downtime	Broken Thermo	31.7
DT47	17-Dec-2011 09:41:22	17-Dec-2011 10:52:58	01:11:36	B-459	Downtime	Boiler Downtime	Safety Shutdown	87.2
XYZ146	17-Dec-2011 13:12:34	17-Dec-2011 16:29:22	03:16:48	B-459	Product XYZ	PIUnitBatch	n/a	48.9
Ex03	17-Dec-2011 19:28:58	17-Dec-2011 20:41:22	01:12:24	B-459	Excursions	Boiler KPI Excursion	High Temp	95.3
Ex04	17-Dec-2011 21:44:58	17-Dec-2011 22:45:46	01:00:48	B-459	Excursions	Boiler KPI Excursion	Low Temp	20.4



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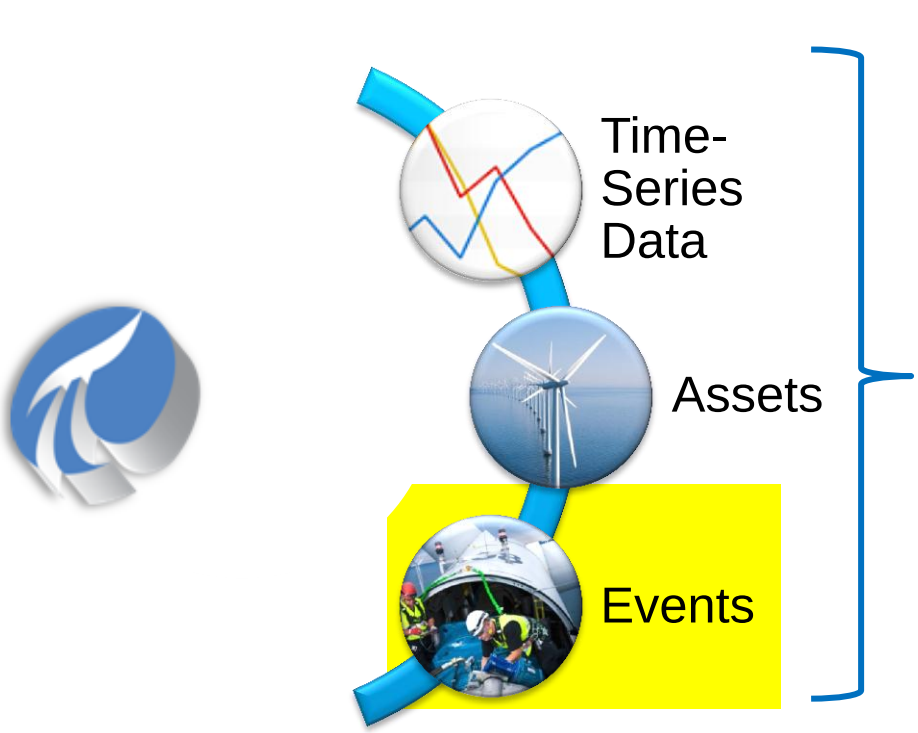
Event Integration with PI Data Access 2012



PI Data Access 2012

- **PI OLEDB Enterprise**
- **PI JDBC Driver**
- **PI Web Services**

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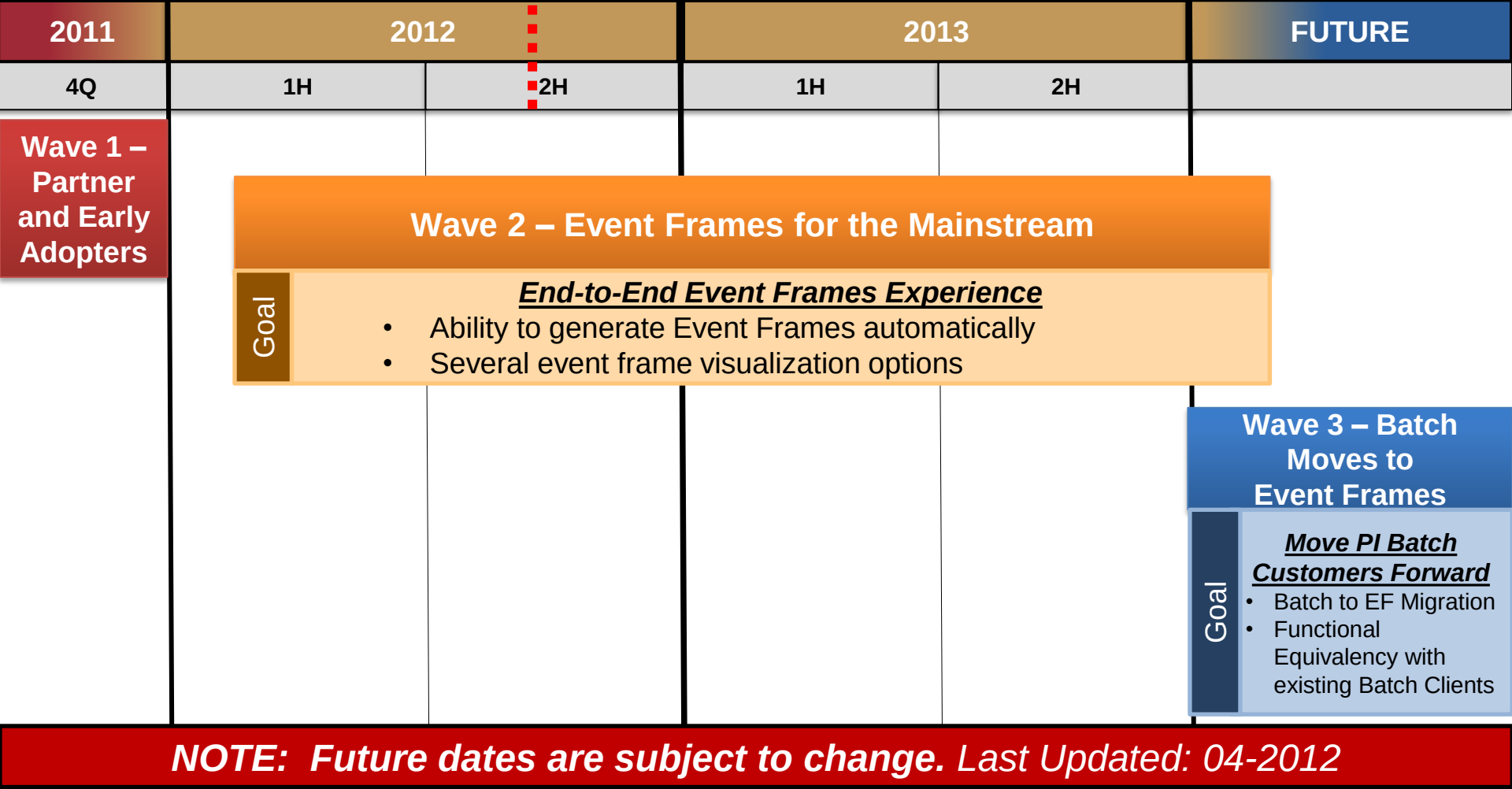

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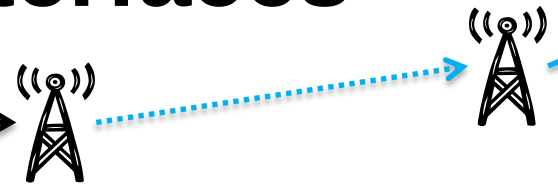
Smart Interfaces

PI Interface



PI System

Tags

Assets

Data

Events

Automatically
discover your data,
send it to your PI System, and
keep it in sync.

PI Interface

Events

Events

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More to search than ever…

Visualization	• Displays, captions, text • PI Points, AF Elements & Attributes
Data Access	• Frequently accessed Data Streams • Related Data Streams • Workstation data sources
Analysis	• Performance Equations / Totalizers / Alarms • ACE Calculations / Notifications / Event Frames
Directory	• AF Element Attributes / AF Elements • AF Element Templates
Server	• Data Streams, PI Properties, By Value (> 75)
Interfaces	• Data sources • Non-PI data

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Find - PI System Search

- Optimized Search Engine for the whole PI System
- Indexed for scale and high performance
- Can crawl many PI Servers*
- Ranked and Related Results
- Includes client artifacts:
  - PI ProcessBook Displays, PI Coresight Displays
- Shared User Experience

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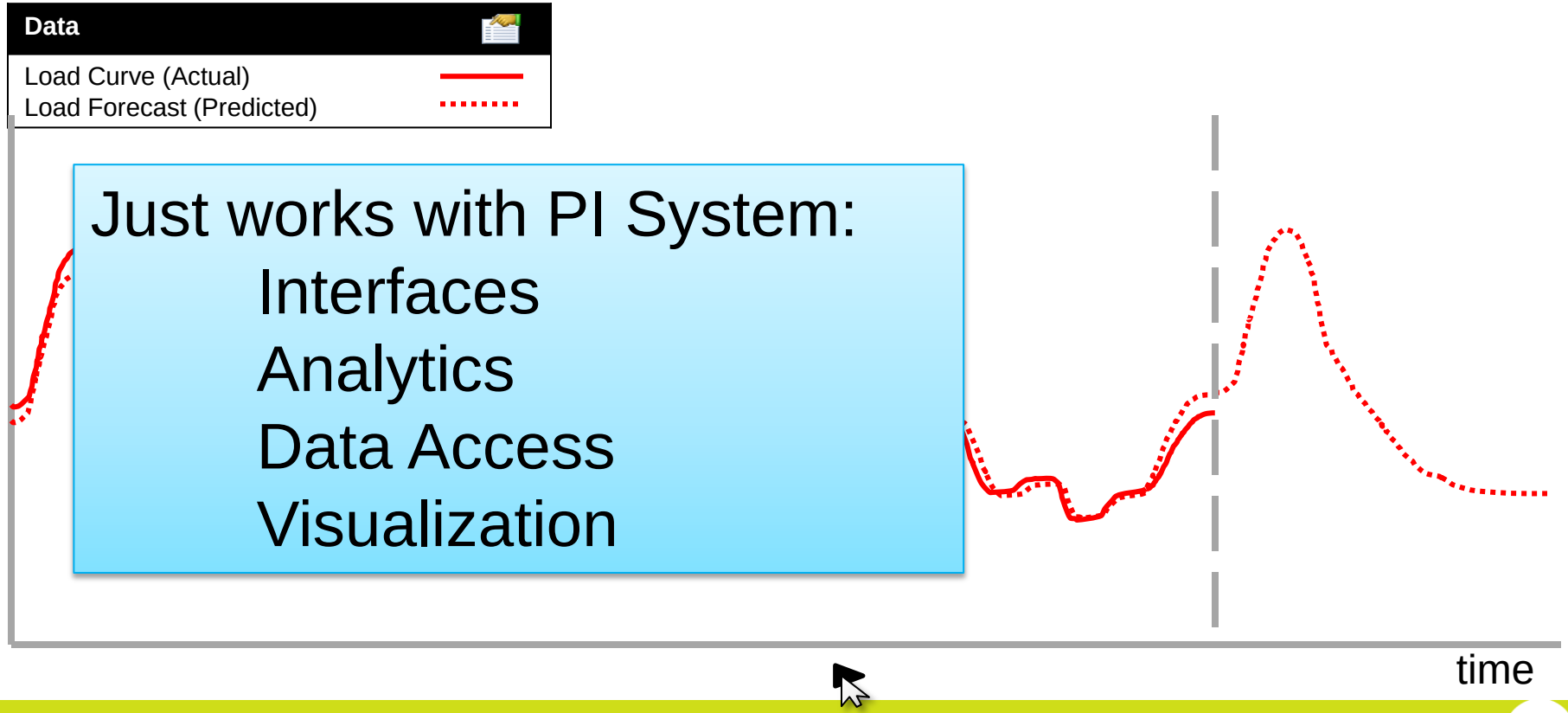
Future Data Coming – Next PI Server



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PI Data Access, longer-term

PI System SDK	A single high performance SDK that allows you to access all PI System data
RESTful Web Services	Emerging web service standard, ideally suited for mobile and cloud
Integration Services	Makes business system integration easy, not just possible (ERP, BI)

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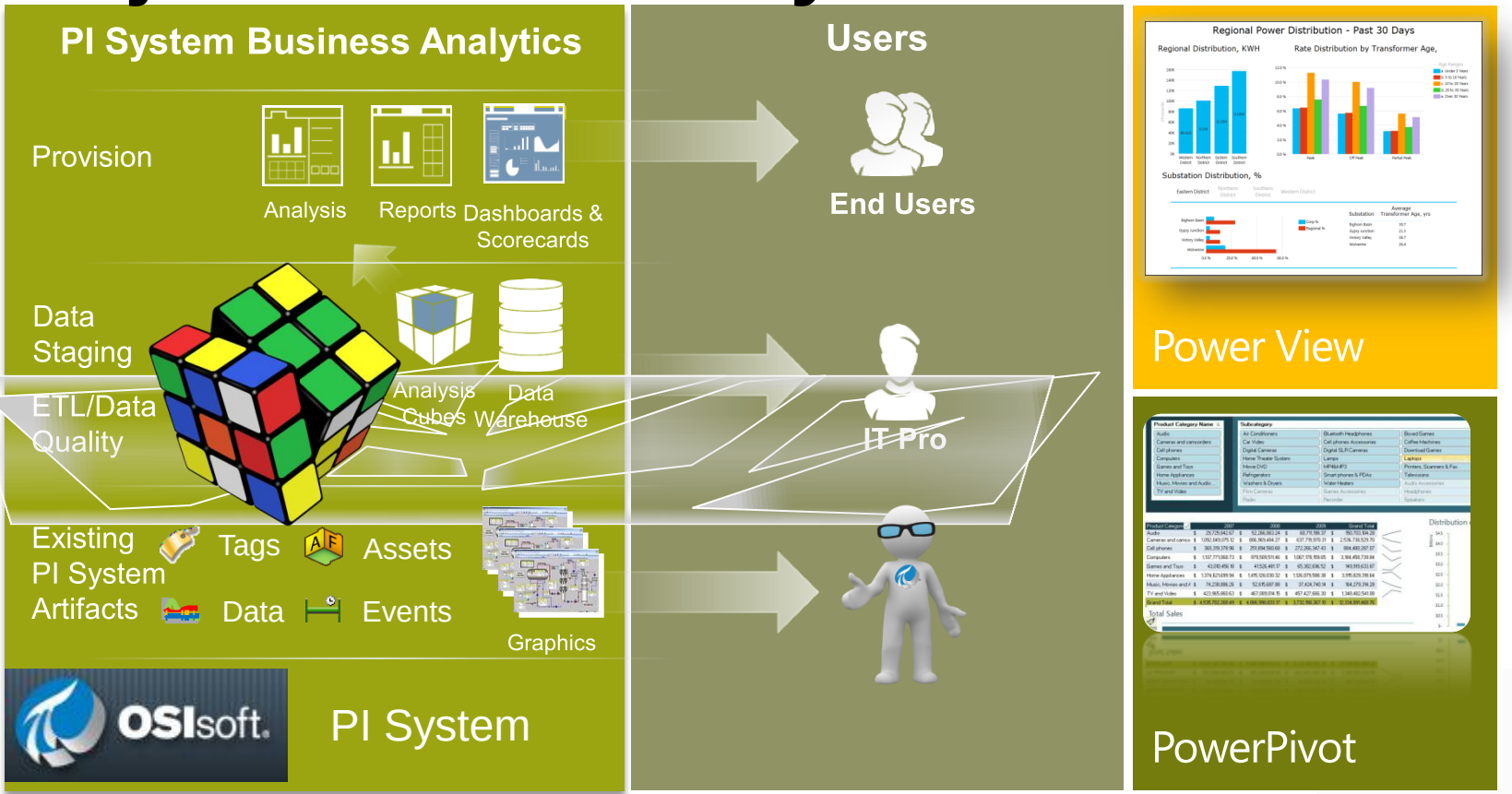
Project Rubik – Why?



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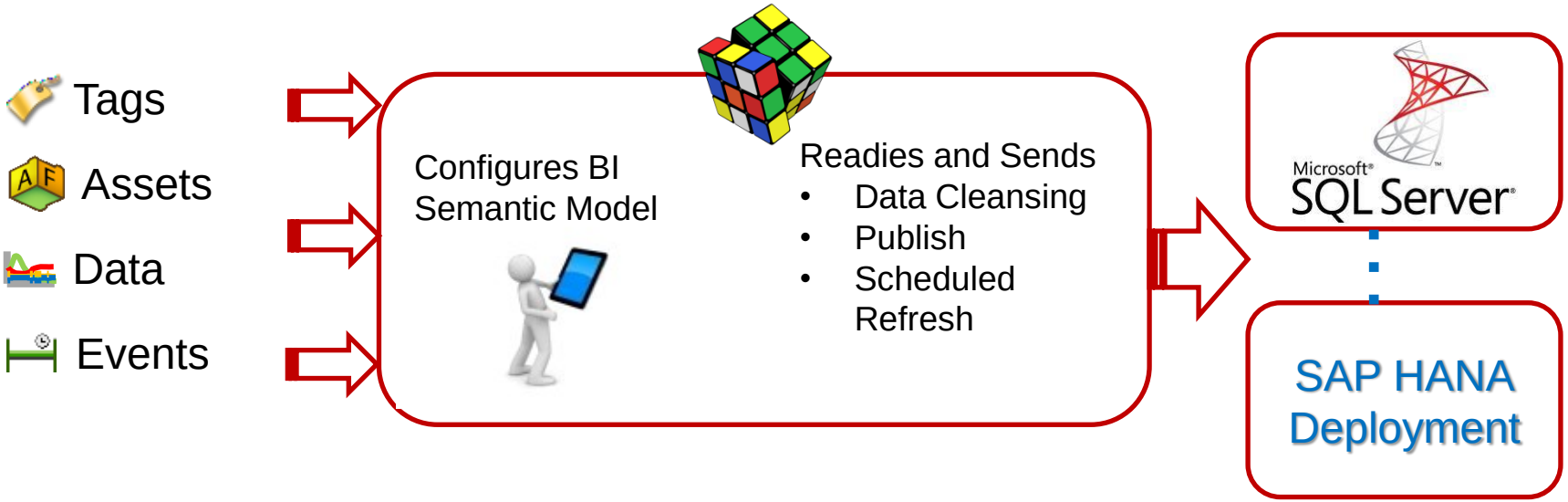
Project Rubik

- Bridge the gap between PI System experts and BI Users
- Allow PI System expert to select the data
- Leverage BI Visualization Tools from Microsoft, SAP (and others)



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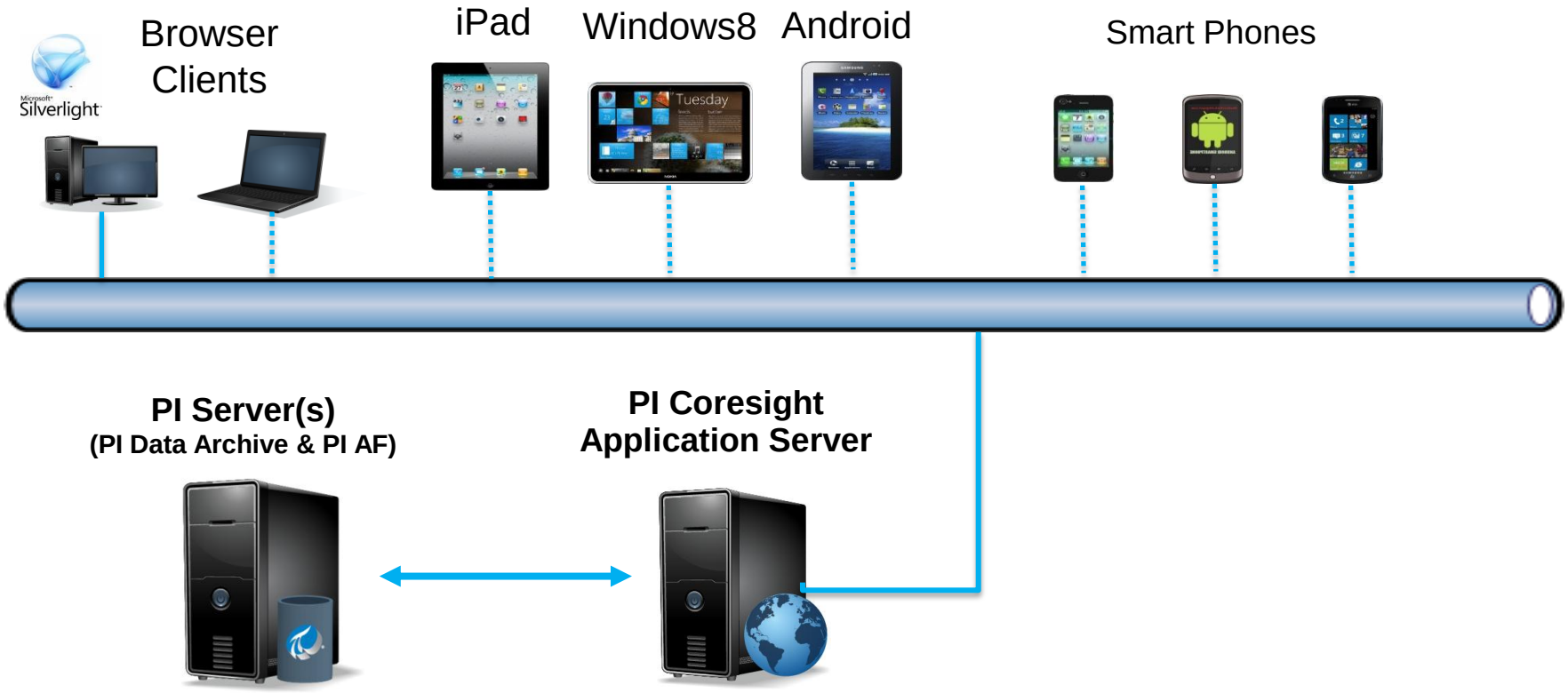
PI Coresight with Mobile Clients



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PI Coresight Phone Edition – Target Audience

- Check in with Plant from Home / Road
- Tell me if something is wrong!
- Focus on Notifications, Acknowledge, Dispatch, and Escalation
- Give me some basic data related to notification
- Outside of plant - 3G, 4G, or public WiFi
- Personalization

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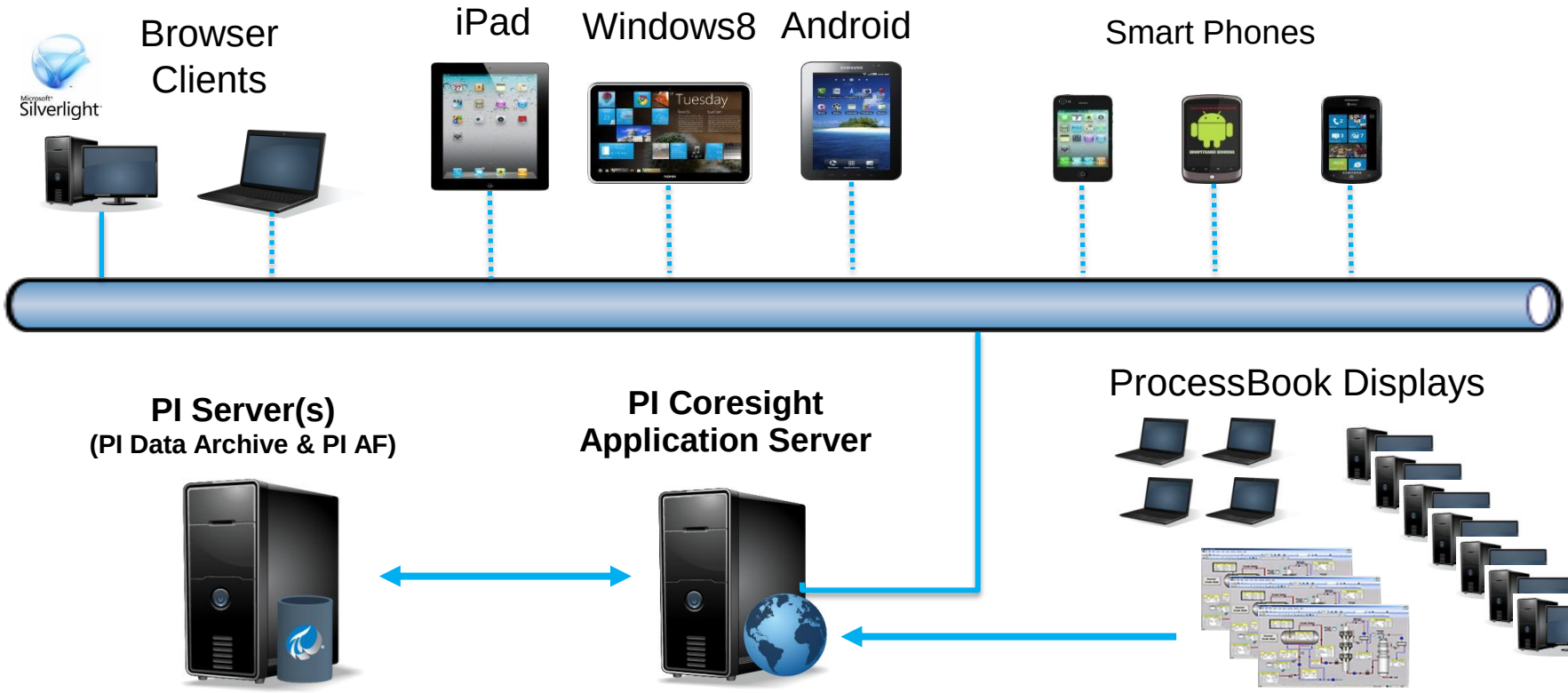
PI Coresight – ProcessBook Display Viewer



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PI WebParts 2013

Support for SharePoint 2010 and SharePoint 2013
Become a better SharePoint corporate citizen
Become a more “IT” friendly product
Replace obsolete technology
Set the stage for OS and Browser independence, Mobile

Remote Data Services
WSP Installs
Can leverage Adobe SVG Viewer if needed
Support for IE 8 and Firefox
Support for IE9/10 with Master Page Edit

Remote Data Services
WSP Installs
Visualization using Web Standards
Support for IE9, IE10, Firefox, and Chrome
Mobile Device Support – Ios, Android, WP

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PI Cloud Initiatives

Add to existing PI Systems

- PI System Management
- PI Data Exchange
- PI Coresight Service
- Data, Visualization and other services for Partner and Custom Apps

Full PI Deployment in the Cloud

- Simplified Deployment and Management
- Take advantage of Azure Platform (PaaS)
- Functionality you know in PI today plus much more
- Highly efficient and elastic

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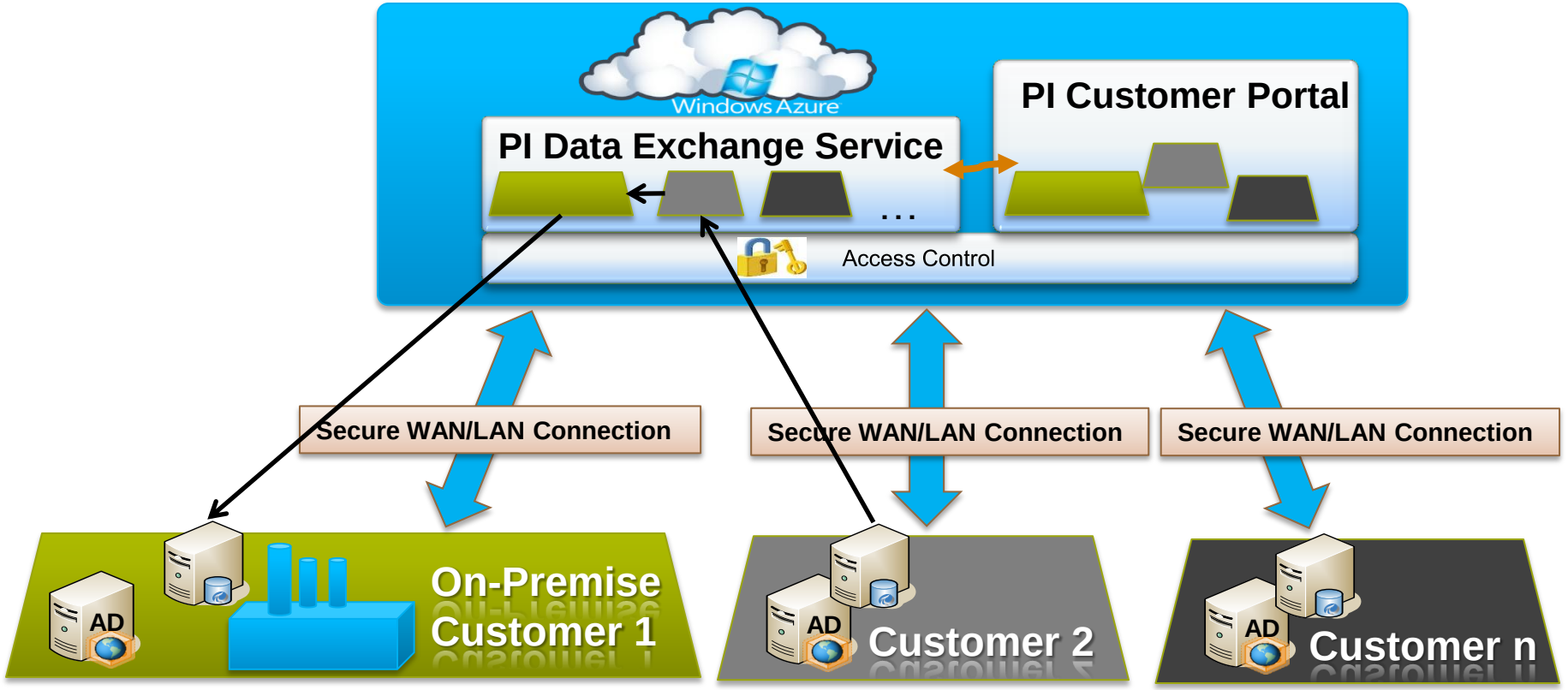
PI Data Exchange Service



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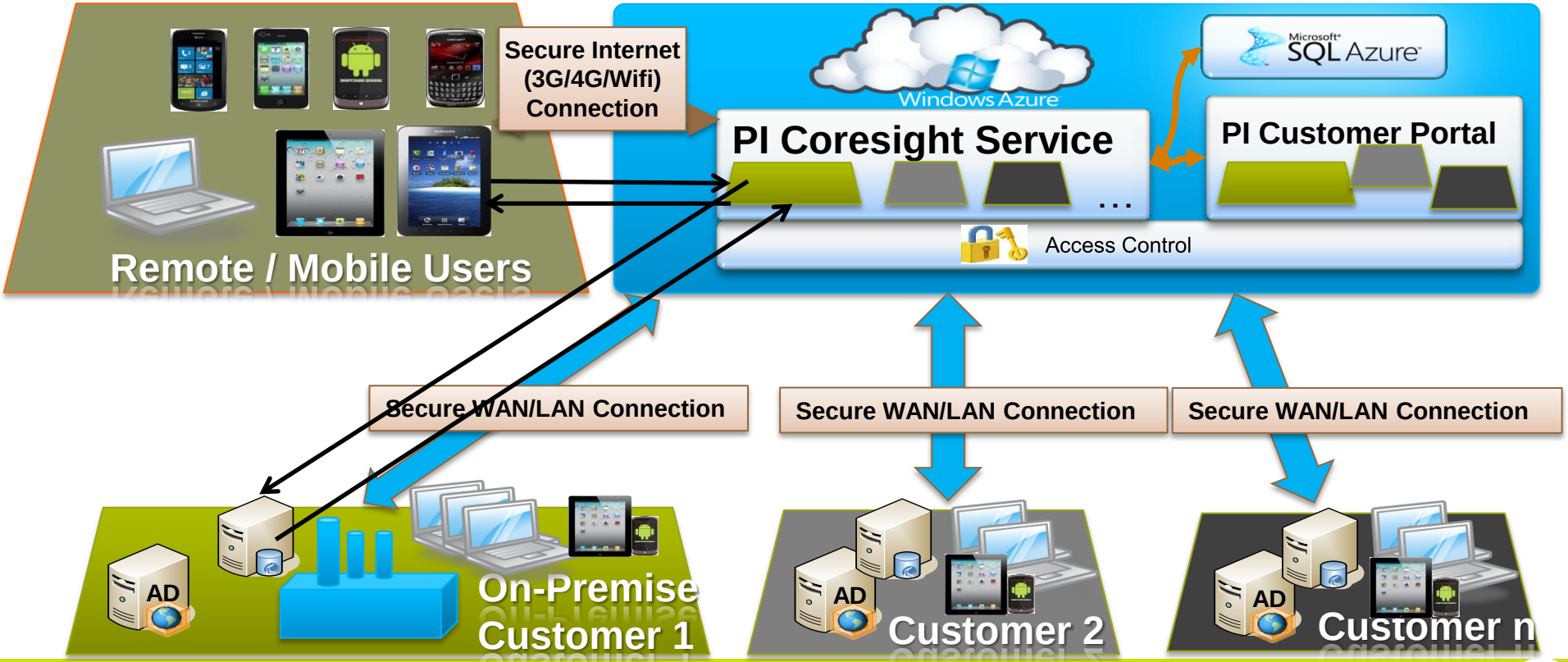
PI Coresight Service with Mobility



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Center of Excellence Engineer

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