

OSIsoft®

REGIONAL SEMINAR

The **Power** of **Data**

**THRIVING
IN A
WORLD OF
CHANGE**



The Power of a Data Infrastructure: The PI System[®] Explained

Presented by **Ales Soudek**, Center of Excellence Engineer

Why a Data Infrastructure

Electrical Power



Water Systems



Transportation



Communication



Data



Sustainable

Reliable

Accessible

Enabling

Organized

Why Plan a Data Infrastructure?

Roads: Infrastructure takes you

Where you are

to Wherever you want to go

How is your data infrastructure organized?



Context

*"I am the **energy efficiency expert**. I need to **analyze and compare truck performance** for **different mining sites** located hundreds of miles from my office."*

"I need data to assess the situation but it is not readily available."

"An incident happened last night."

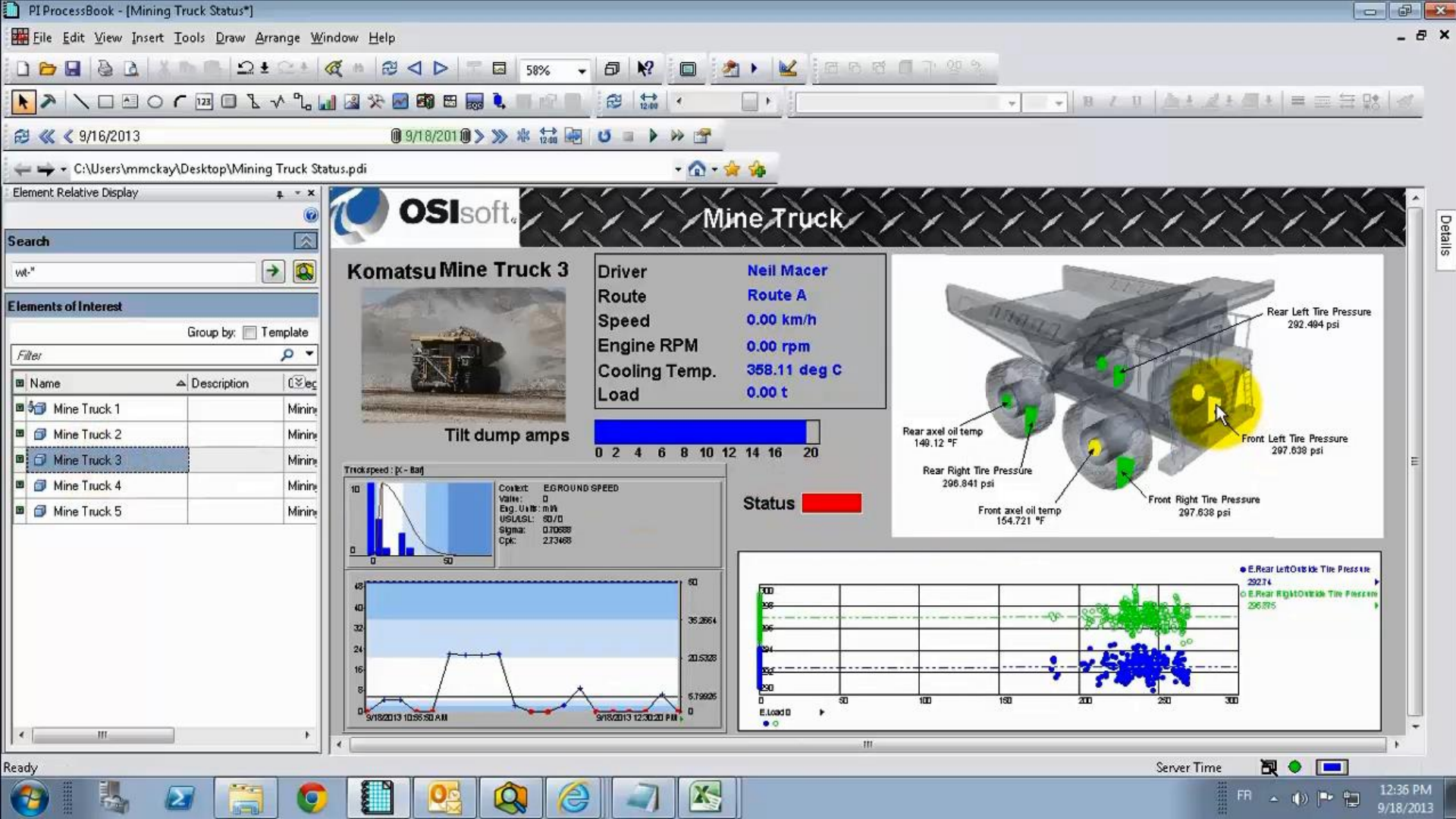


Chris

*Energy Efficiency
Expert*



DEMO



PI System Infrastructure



I need to be notified when this kind of events happen.



I need the big picture of my wind turbines to understand what is going on.



The pump is not working. What's the problem?



Information must be shared across the enterprise through different business systems.



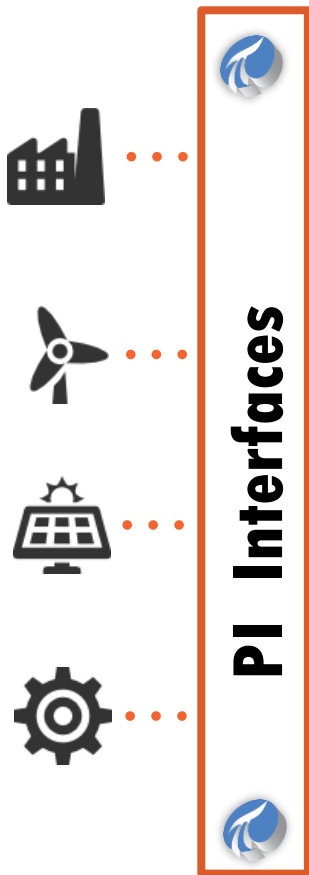
I need to analyze and compare turbines performance.



We all want to know how the plant is performing in real-time.



PI System Infrastructure



The pump is not working. What's the problem?



PI Interfaces

- More than **450** interfaces
- Support multiple **protocols** and **data sources**
 - OPC, Modbus, SNMP, Text File, ODBC
- Robust and reliable



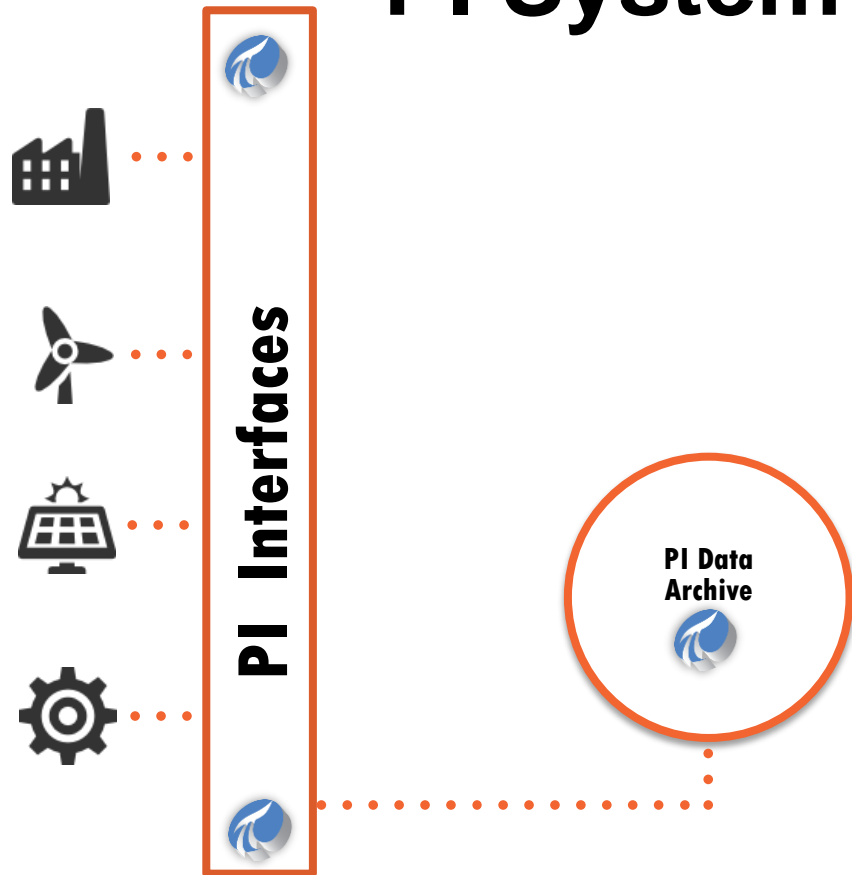
MY SUPPORT PRODUCTS DOWNLOAD CENTER KNOWLEDGE CENTER CONTACT US

PI Interfaces

Type a few keywords and hit "Enter" to find the right PI Interface for your system.
Hint: try the vendor name (for example: "Honeywell").

Interface	Platforms
PI COM Connector for OPC HDA Servers PI-CTR-OS-OPCHDA	Windows
PI Interface for OPC Alarms and Events OPCae, DeltaV, Delta V PI-IN-OS-OPCAE-NT	Windows
PI Interface for OPC DA OPCint, OPC Client, OPC DA PI-IN-OS-OPC-NTI	Windows
PI Interface for OPC HDA OPC HDA Client, OPCHDA PI-IN-OS-OPCHDA-NT	Windows
Emerson DeltaV Smart Connector	Windows

PI System Infrastructure



The pump is not working. What's the problem?



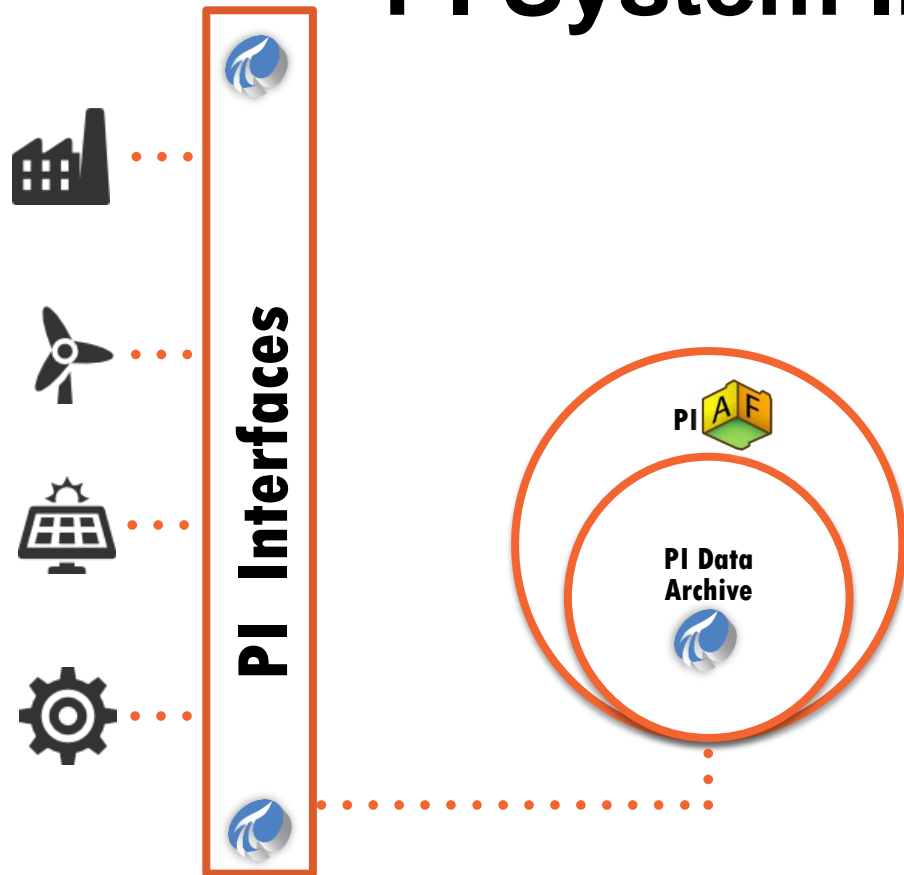
PI Data Archive

- Optimized for **real time** data **streams** - TAGS

TAG	TIME	VALUE	STATUS
TIC1001.PV	23-MAY-08 11:01:02	12.3	GOOD
LIC30211.PV	23-MAY-08 11:01:03	198.4	GOOD
...

- Designed to archive data for **millions** of tags and **tens** of years

PI System Infrastructure

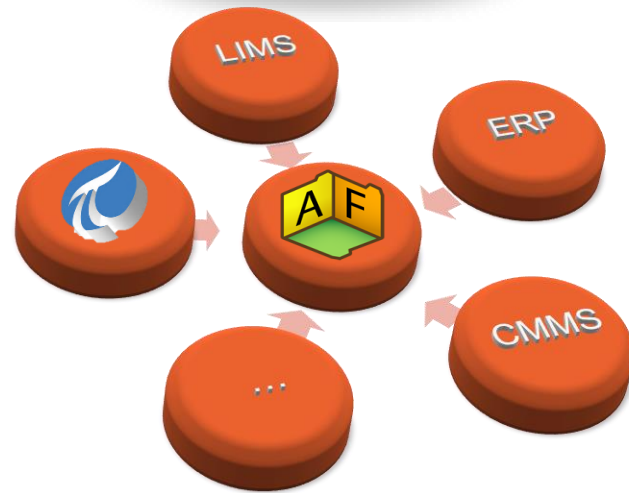
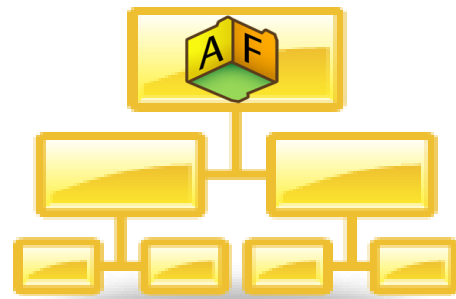


The pump is not working. What's the problem?

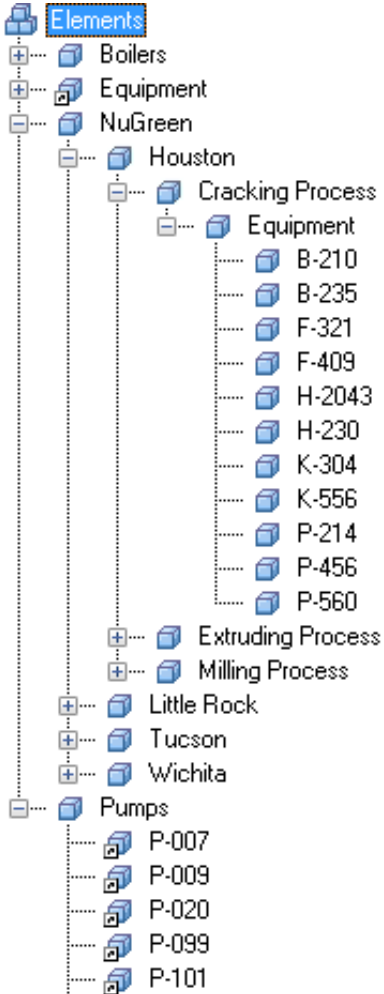


PI Asset Framework (PI AF)

- Organize your assets data in a **hierarchical**, **scalable**, **secure**, and **extensible** database
- Model data from **different PI Servers**
- Relate **non time-series** data sources
- Integrate with **analyses** and **notifications** tools



The Big Picture



Analyses

- Efficiency analysis
- Key Performance Indicators (KPI)

Events

- Downtime
- Startup
- Failure

Notifications

- High speed
- Rotor failure
- Low pressure

Time-series

- In-Flow
- Pressure
- Vibration data

Asset details

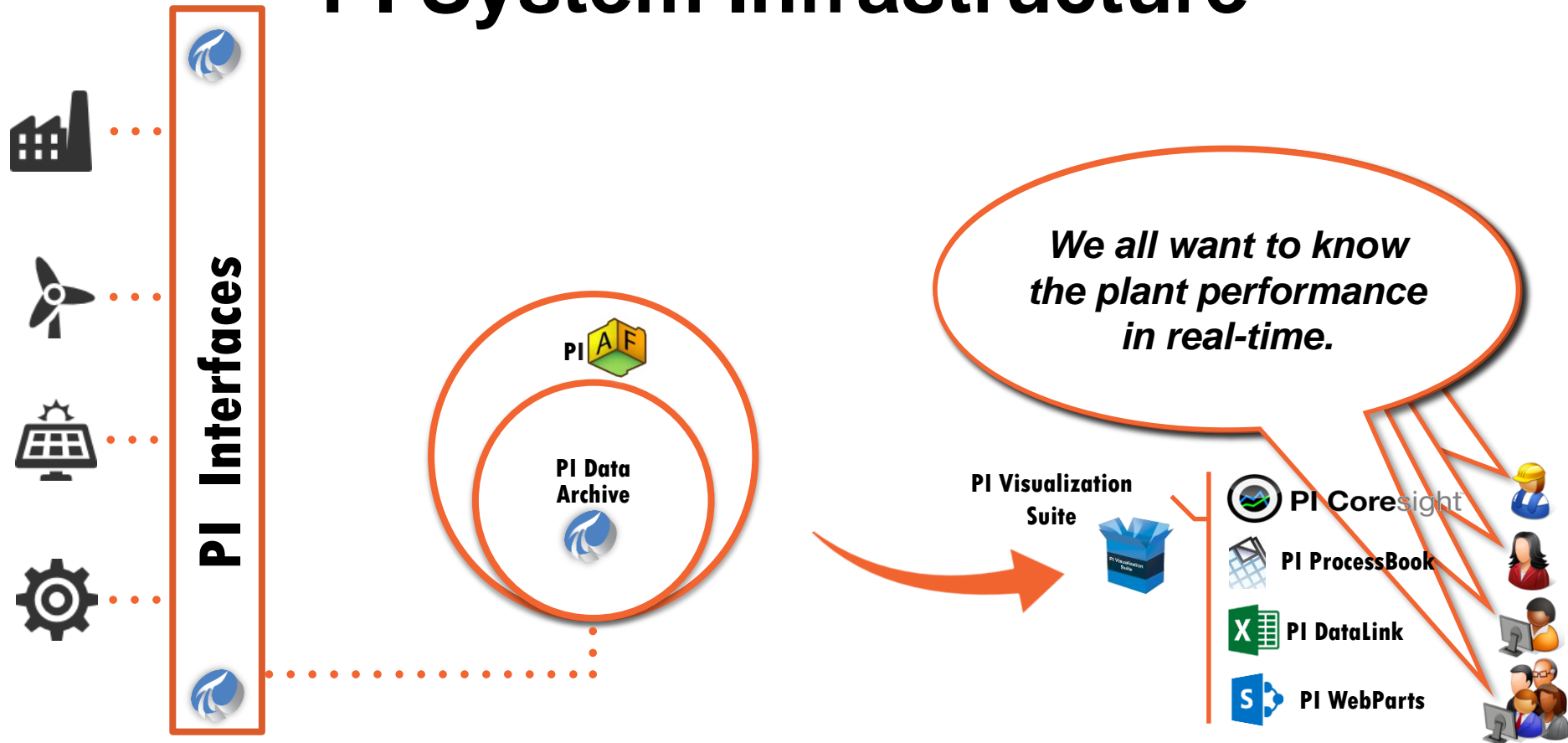
- Name
- Model
- Manufacturer

External data

- Performance curves
- Last maintenance date
- Design documents
- Best operating procedures



PI System Infrastructure



Visualization Landscape

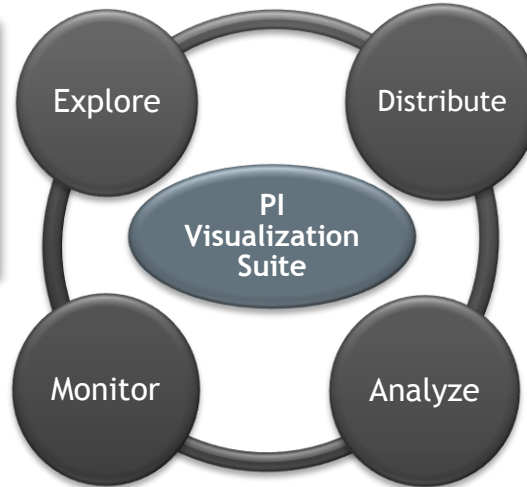
PI Coresight

Collaboration and ad hoc analysis



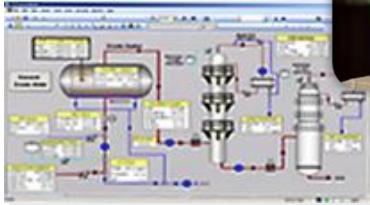
PI WebParts

Composite web applications

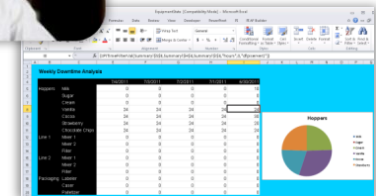


PI ProcessBook

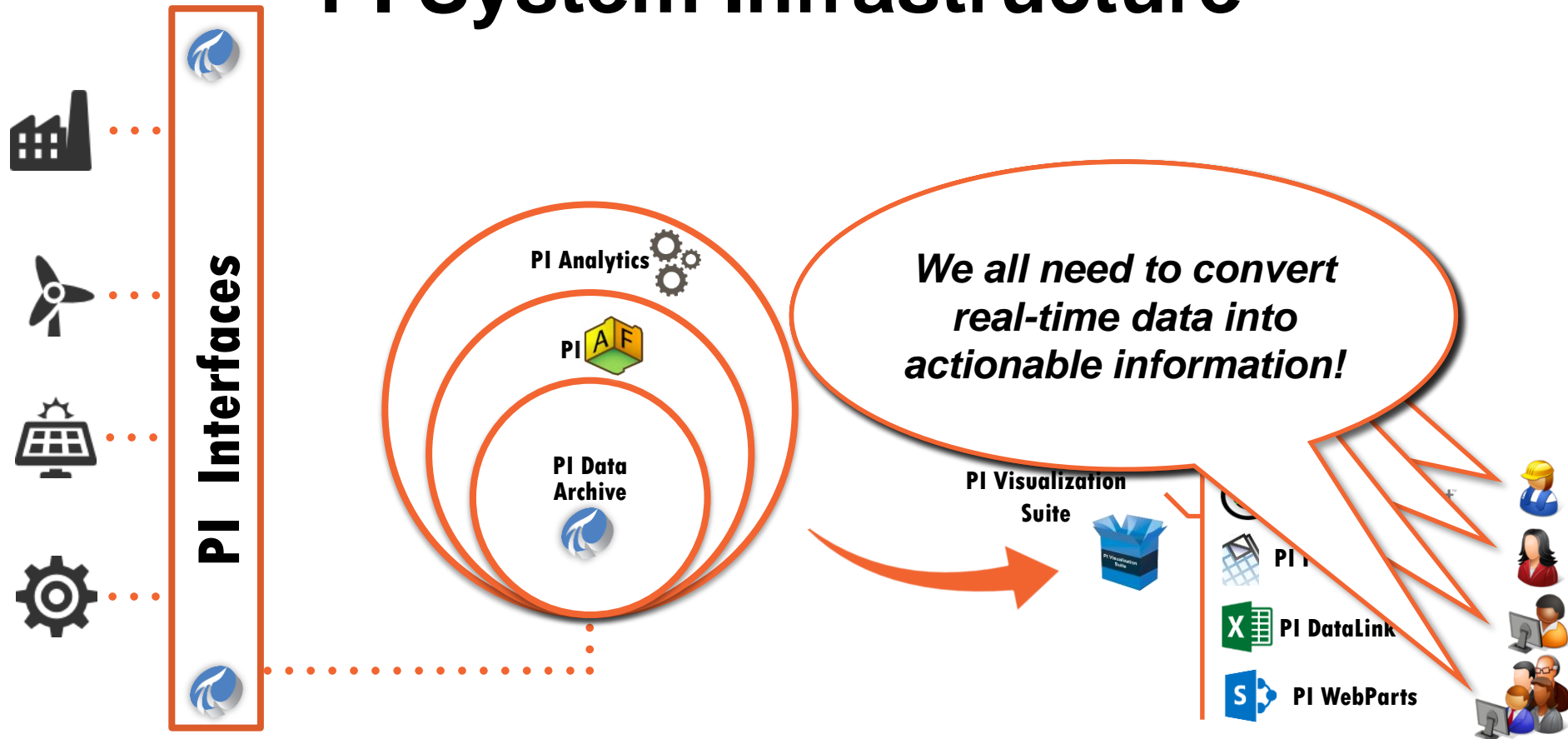
Authoring tool for process displays and trends



PI DataLink
Reports and data analysis

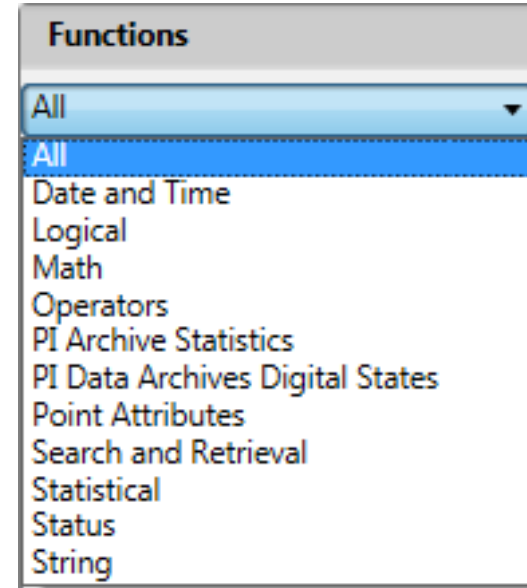


PI System Infrastructure

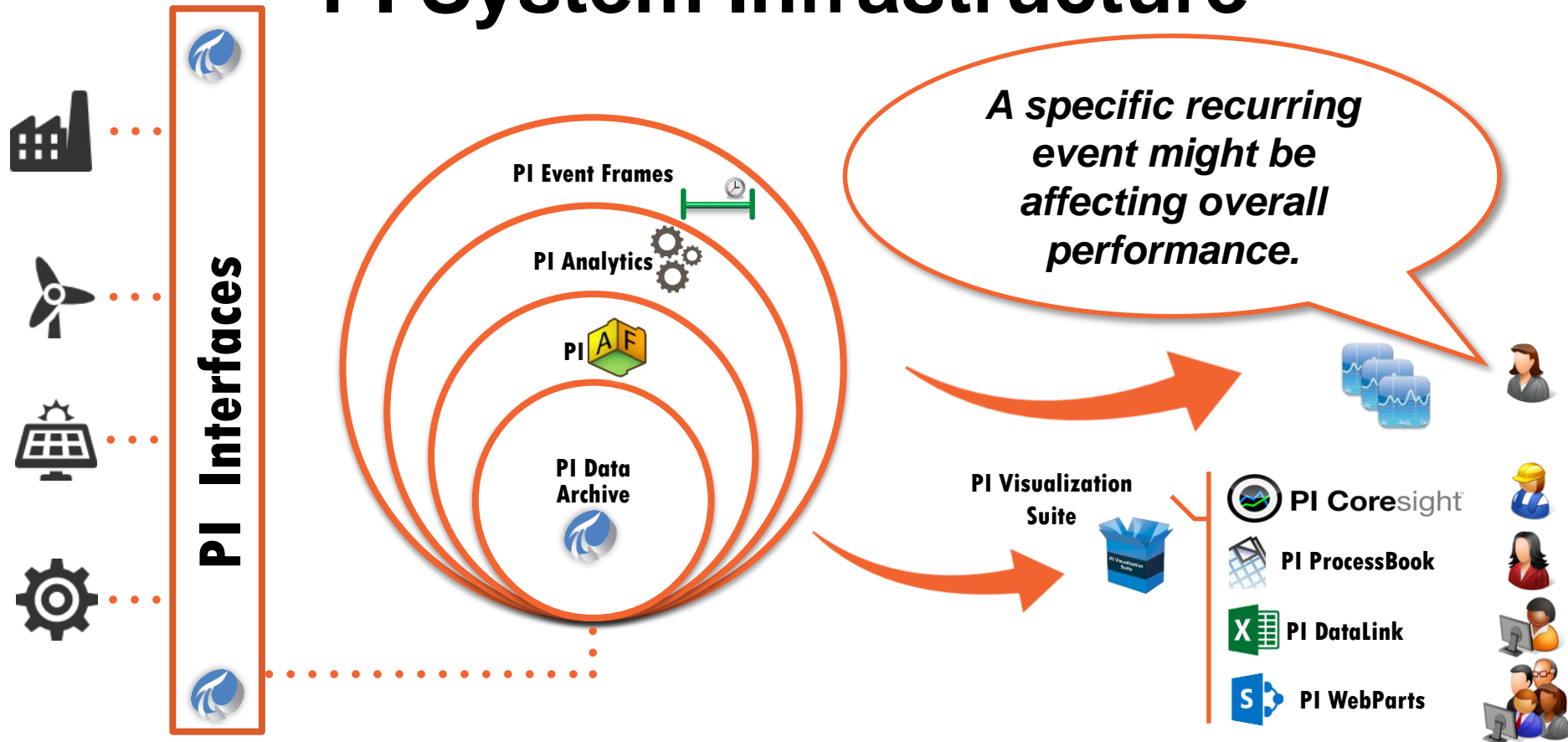


PI Analytics

- Transforms operational data into **actionable information**
- The analyses are:
 - Created by configuration or programming
 - Triggered periodically or on events
 - Consulted on-demand or historized



PI System Infrastructure



Bookmarks for your Real-Time Data

PI Event Frames

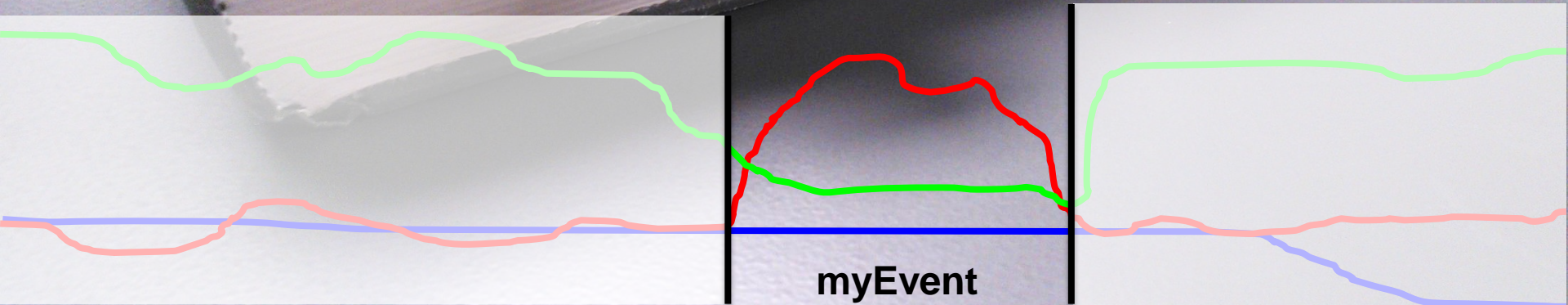


Info

End

Start

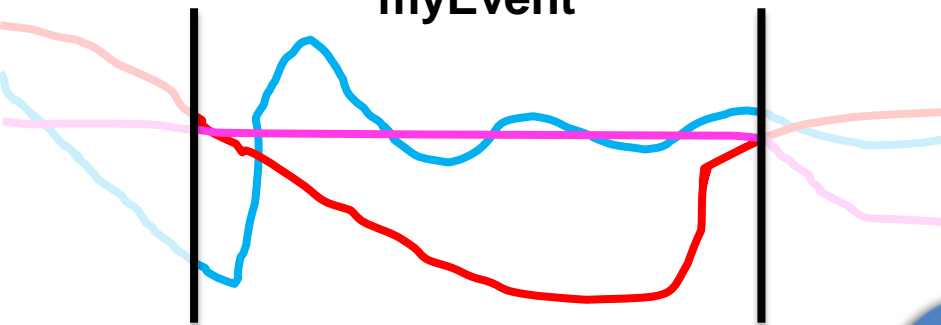
Your
Data



myEvent

Simplify Data Analysis

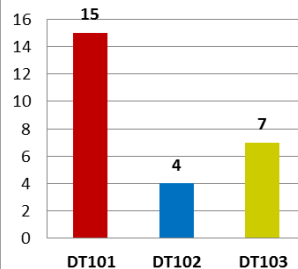
myEvent



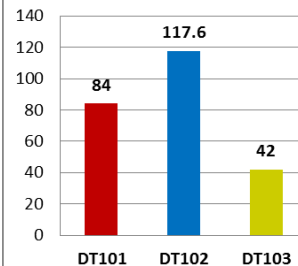
Perform Asset Comparisons



Weekly Downtime
(Instances)



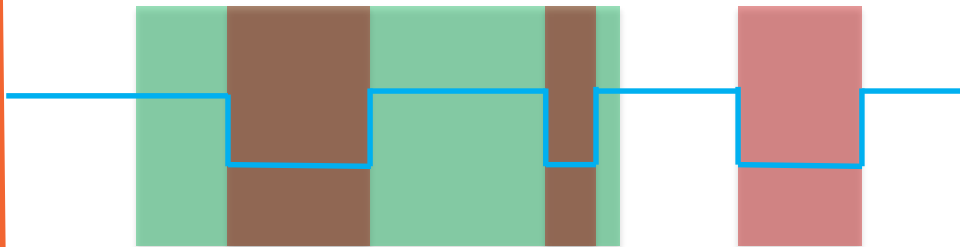
Weekly Cumulative
Downtime (hrs)



Downtime Events for Product XYZ

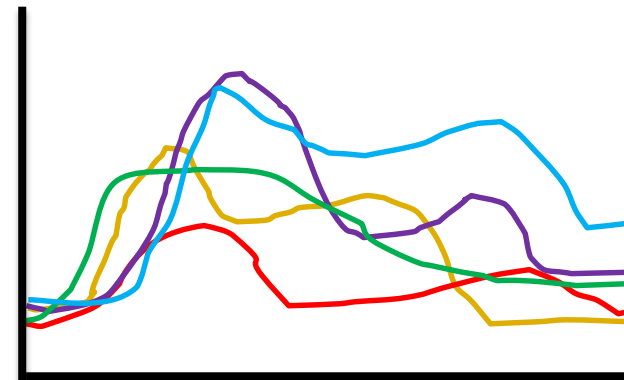
Product XYZ (1)

Downtime (2)



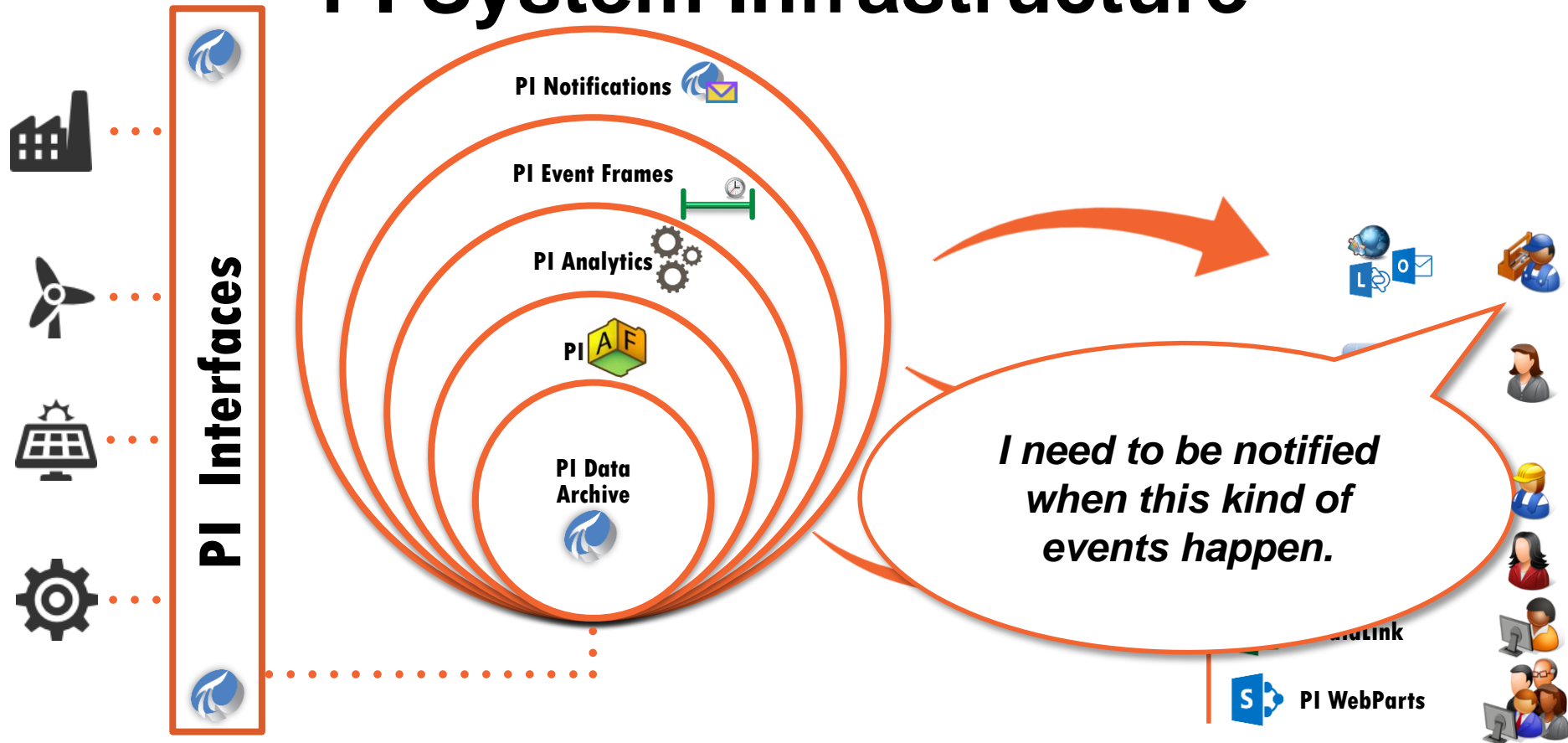
Perform Event Comparisons

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



Discover Event Interrelationships

PI System Infrastructure



PI Notifications



DELIVER



From: ☐ PINotAdmin
To: ☒ Mariana Sandin
Cc:
Subject: Transformer TR0842 Load is in hi

[Instant PI WebParts Trend](#)
[Acknowledge With Comment](#)
[Acknowledge](#)

Name:	Transformer Load - F
State:	High
Trigger Time:	7/29/2012 9:07:01 A
Start Time:	7/29/2012 9:07:01 A
End Time:	1/1/1970 12:00:00 AM
Triggering Condition:	Load > 22
Target:	TR0842

Wind Farm availability is under 70%

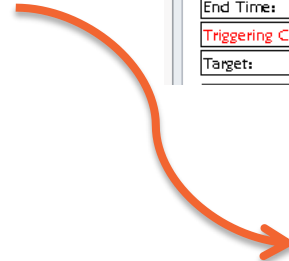
DF PI Notifications - Offline

pinotifications@osidf.test.int 2:45 PM

Wind Farm availability is under 70%

Name: Wild River Wind Farm
Server: DFPIAF
Database: Windtopia
Start Time: 8/1/2012 2:30:00 PM Pacific Daylight Time (GMT-07:00:00)
Trigger Time: 8/1/2012 2:45:00 PM Pacific Daylight Time (GMT-07:00:00)
Target: Wind Power Generation Fleet(Wild River Wind Farm)
State: OutsideControl
Priority: Normal
Link: [Wind Farm Overview](#)
Actions: [Acknowledge](#)
Last message received

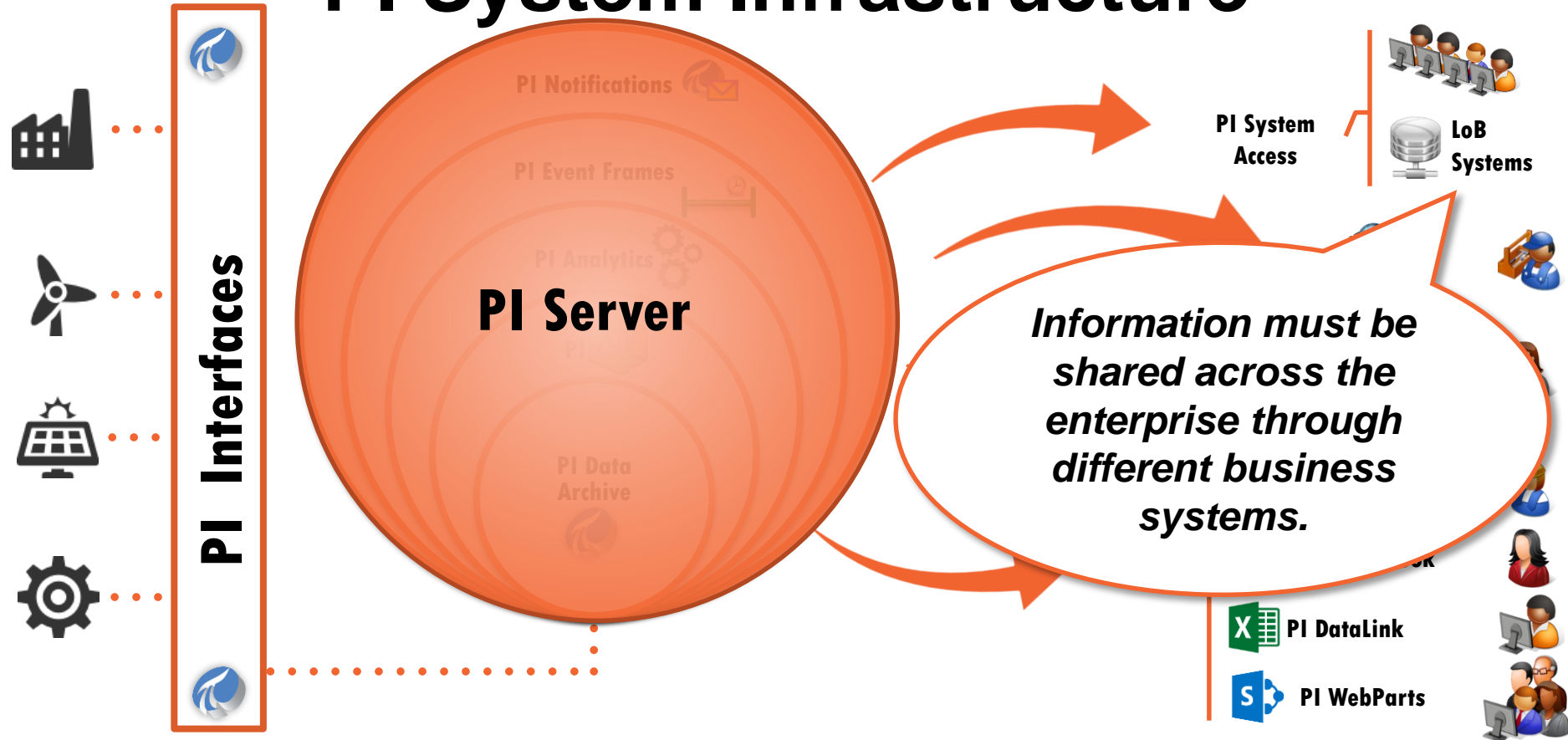
Redirect Ignore

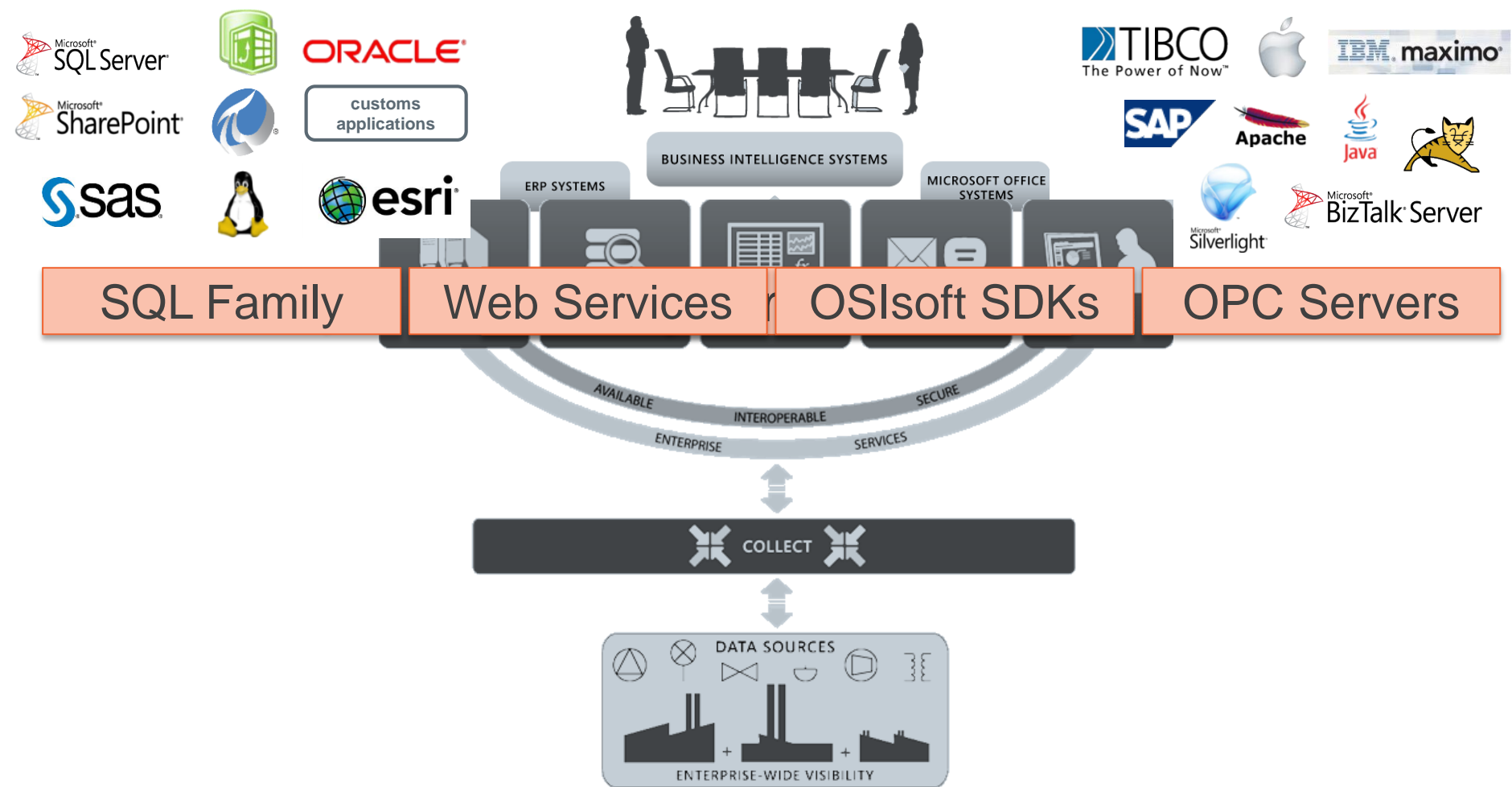


Web Service



PI System Infrastructure





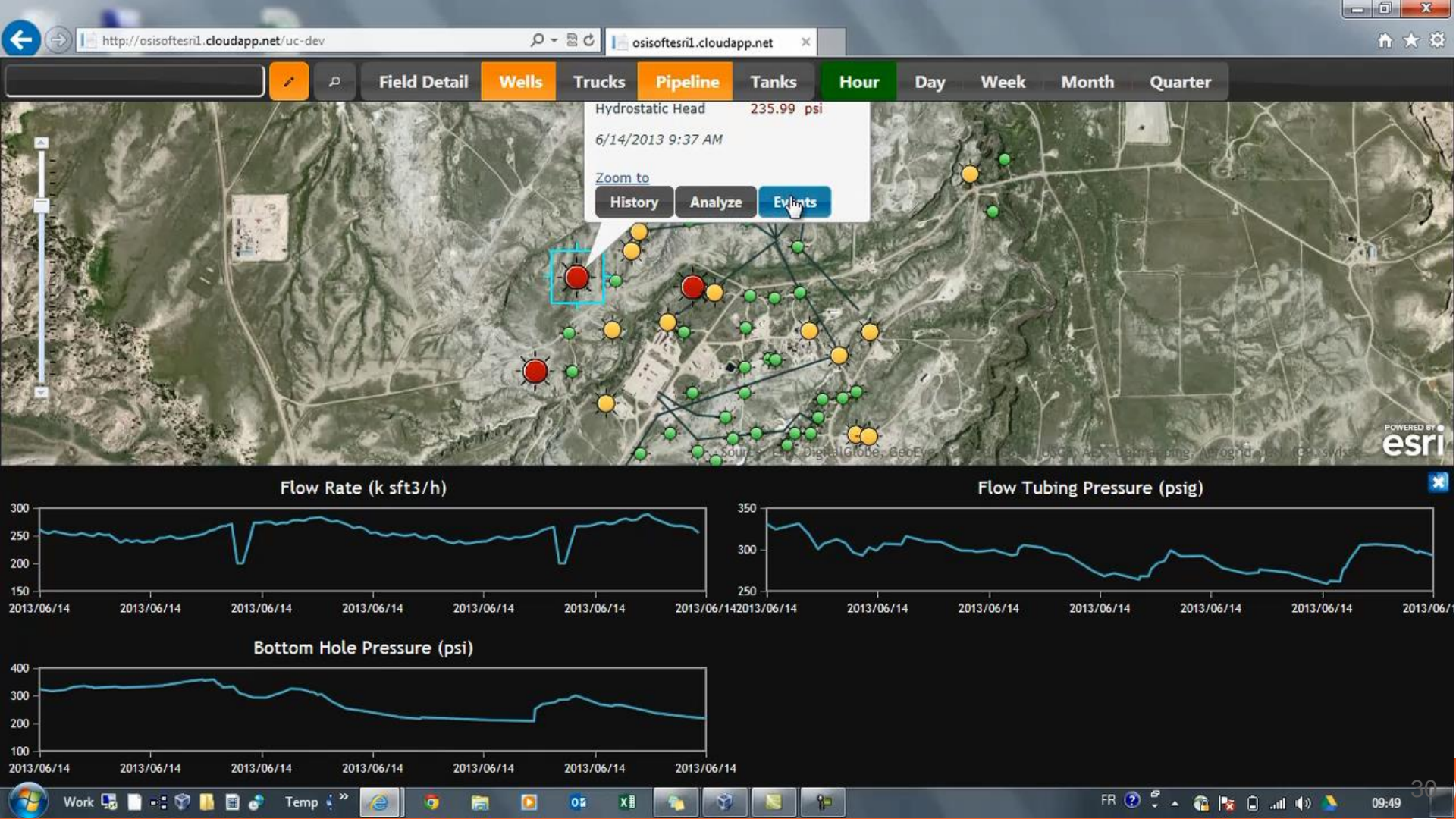


Partners



- ESRI is the maker of **ArcGIS**, the leading product of Geographical Information Systems **(GIS)**.
- Rely on the PI System infrastructure to **combine GIS** data with **real-time** information





Find Out More About Our Partners

- Partner Solution Showcase
- Partner List

The screenshot shows the OSIssoft Partner Solution Showcase homepage. The header includes the OSIssoft logo, a search bar, and links for Sign In and Register. The main navigation bar contains links for Home, Browse All Solutions, Solution Directory, News & Announcements, and FAQ. The main content area features a welcome message, a video of Tom Gilson (Director, Partner Programs, OSIssoft), and a list of news and announcements including a 2013 Partner Solution Showcase Webinar, a Process Plugins Webinar, a CompressionInsight Webinar, and a Waterfall for the OSIssoft PI System Webinar. There are also links for Partner List and Solution List, and a button for Browse All Solutions. The footer section highlights Top Rated Partner Solutions and New Partner Showcase Solutions, featuring E-Notification Engineering Consultants Group, Inc. and Amitec SMS Notification for PI AF®.

OSIssoft. partner solution showcase

Sign In | Register

Home Browse All Solutions Solution Directory News & Announcements FAQ

Welcome to OSIssoft Partner Solution Showcase where you can find software solutions from OSIssoft partners with specific industry and domain expertise.

Partner List Solution List

Browse All Solutions

Top Rated Partner Solutions

New Partner Showcase Solutions

Amitec SMS Notification for PI AF®

Amitec AS

04/30/2013

Latest Reviews

Used for real QbD a... by Markus Jetzer

SIMCA-online

10/17/2012

★★★★★

The screenshot shows the OSIssoft Partner List page. The header includes the OSIssoft logo, a search bar, and links for Worldwide Locations, Community, Tech Support, Learning, and OSIssoft vCampus. The main navigation bar contains links for Software & Support, PI System Value, Partnering, Events, Resources, Company, and Regional. The main content area features a search bar and a table of partner information. The table has columns for Company, Home Office Location, and Phone. The first row lists ADM Systems Engineering Ltd. with its location in Saint John, New Brunswick, and a phone number. The second row lists BBA Inc. with its location in Mont-Saint-Hilaire, Quebec, and a phone number. The footer section provides a brief description of ADM and BBA.

OSIssoft.

Worldwide Locations | Community Tech Support | Learning | OSIssoft vCampus

Software & Support PI System Value Partnering Events Resources Company Regional

Search Go

CONTACT US PRINT EMAIL FEEDBACK

OSIssoft Partners

The OSIssoft Partners listed below combine industry expertise, OSIssoft product knowledge and their individual unique skills to enhance the value of the PI System through the services they deliver.

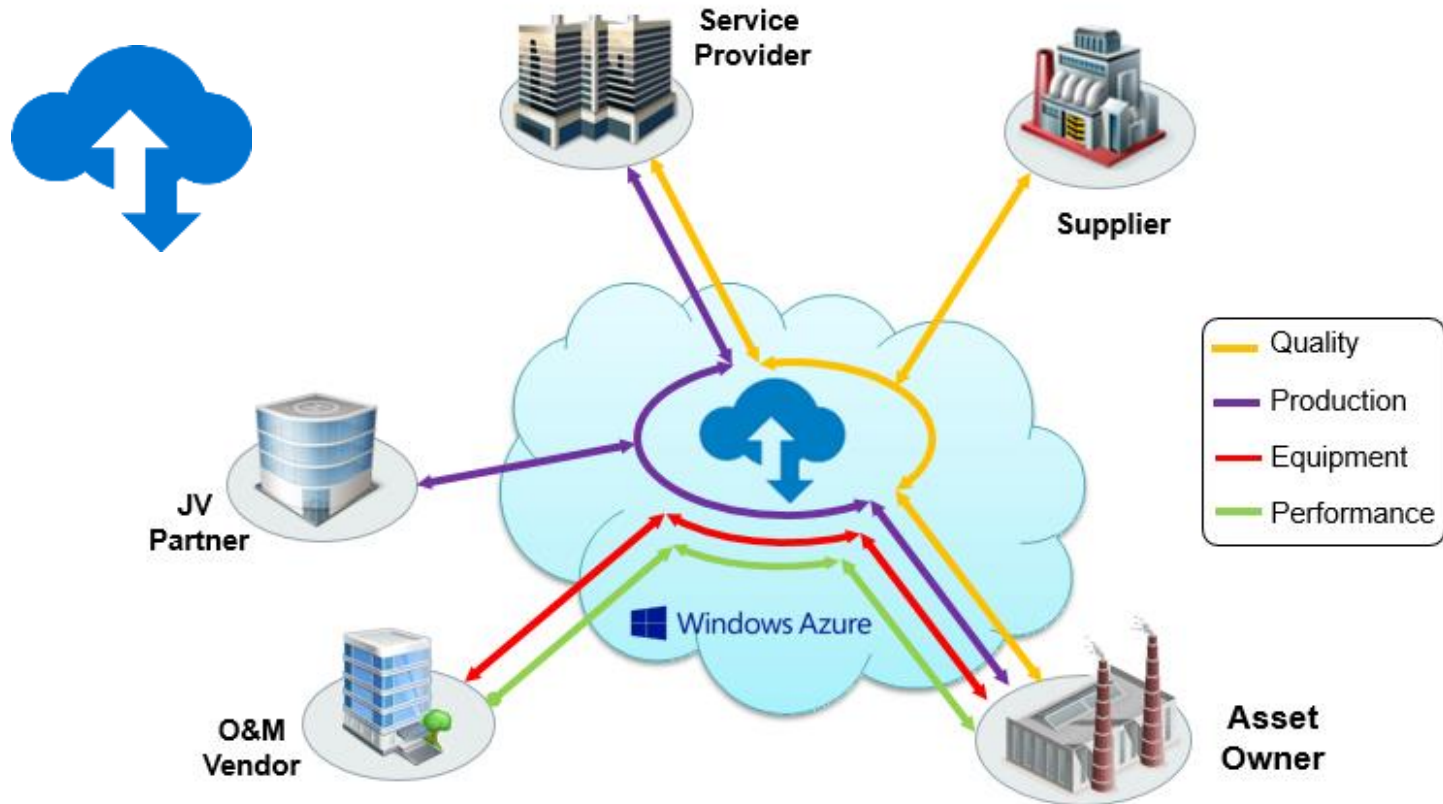
Interested in learning more about working with OSIssoft products? Visit OSIssoft vCampus, our online community for application development.

Regions Countries/States Partner name

International Canada Partner name (optional) Find Partners Browse Alphabetically

Company	Home Office Location	Phone
ADM Systems Engineering Ltd.	55 Drury Cove Rd, Suite 300 Saint John, New Brunswick - E2H 2Z8 Canada	+1(506)652-9251
ADM provides software engineering for data management, enabling the flow of data between process, operations and management. With this infrastructure in place, ADM can develop advanced applications and reporting systems.		
BBA Inc.	375, boul Sir-Wilfrid-Laurier Mont-Saint-Hilaire, Quebec - J3H 6C3 Canada	+1(450)464-2111
BBA is a multidisciplinary engineering firm providing high-end engineering services mainly in the energy, mining and metals sectors. Through system integration and custom application development, its industrial IT team provides innovative solutions to increase visibility and efficiency of available assets. BBA is a CSA certified member.		

PI System Data Sharing





Recap

PI System Infrastructure



PI Visualization Suite / PI System Access



PI Event
Frames



PI Asset
Framework



PI Data
Archive



PI Interfaces
for Health Monitoring

PI Notifications



PI Analytics



PI Interfaces



Cloud Computing



Windows Integrated
Security



High Availability (HA)



64-bit Architecture



Virtualisation
Microsoft®
Hyper-V™

CITRIX®



Key Points to Take Home



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The Power of Data

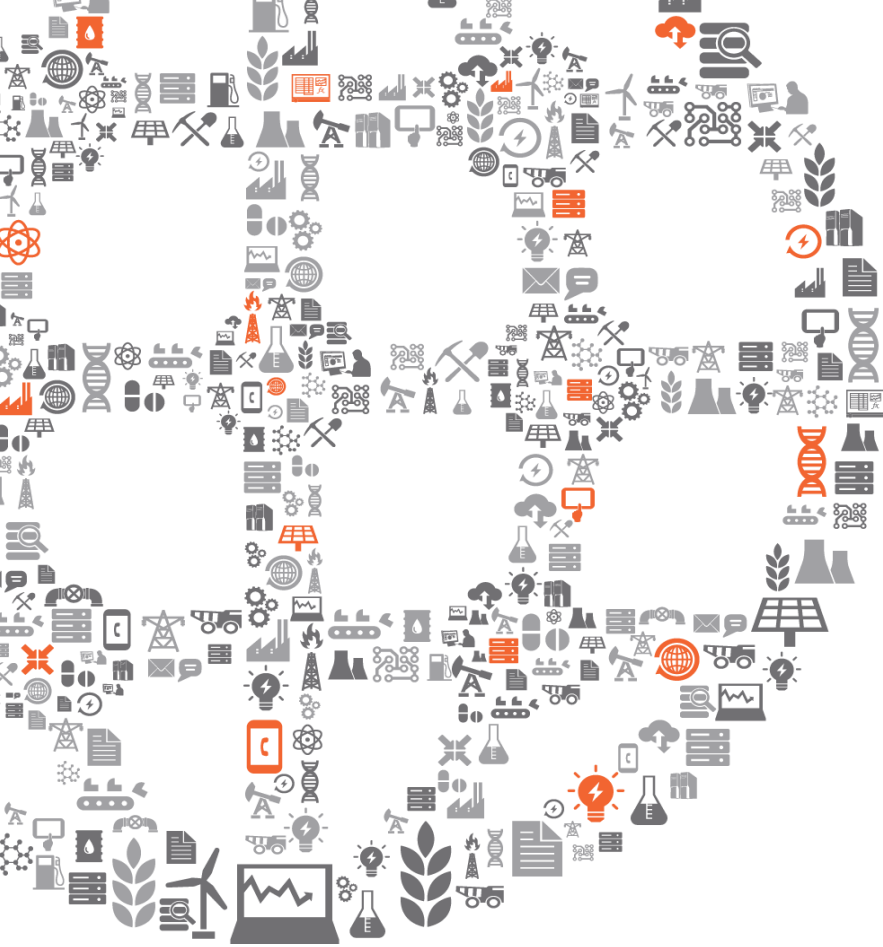
**THRIVING
IN A
WORLD OF
CHANGE**

The PI System infrastructure...

... manages and stores **time-series**, **assets**, and **events** information regardless of the data sources.

... is **interoperable**, **extensible**, and **secure**.

... continues to **evolve** so you can unleash the Power of your Data!



Questions

Please wait for
the **microphone**
before asking
your questions



State your
**name &
company**

Ales Soudek

asoudek@osisoft.com

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OSIsoft, LLC



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