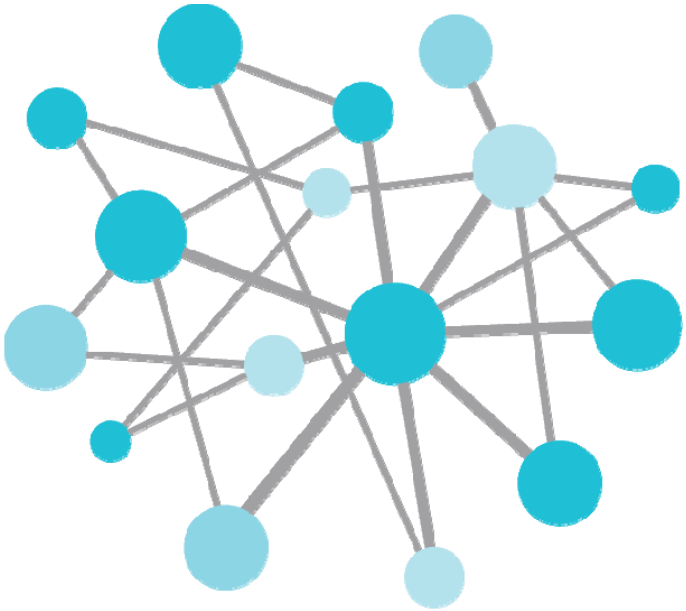

OSIsoft.

PI SYSTEM ROADSHOW 2014

The Power of Data

DECISION READY IN REAL-TIME

OCEANIA

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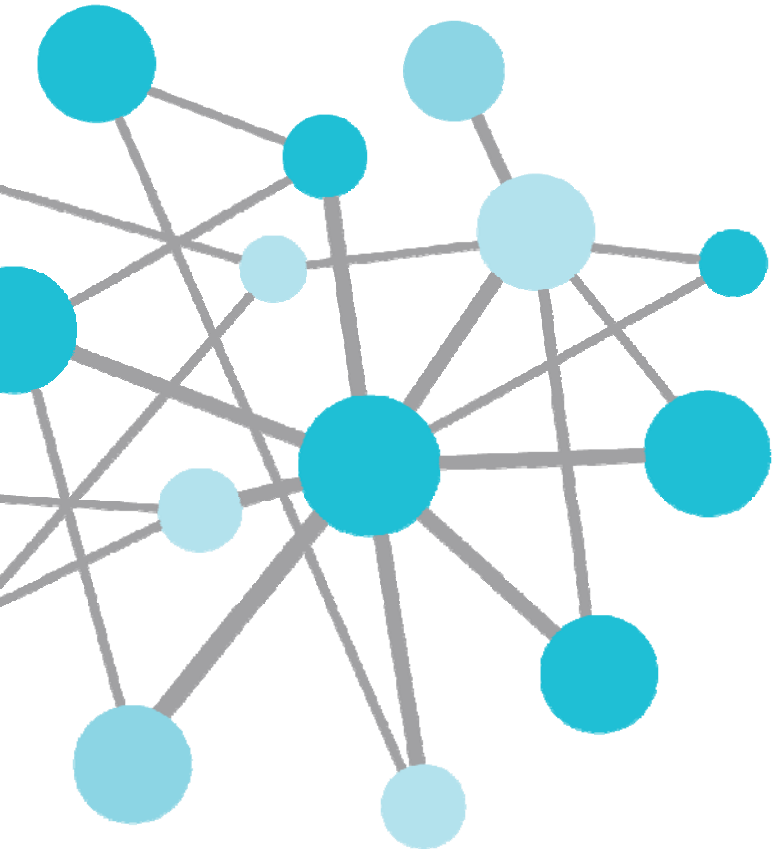

What is new with the PI System?

Presented by **Michael Luo, Technical Consultant, OSIsoft**

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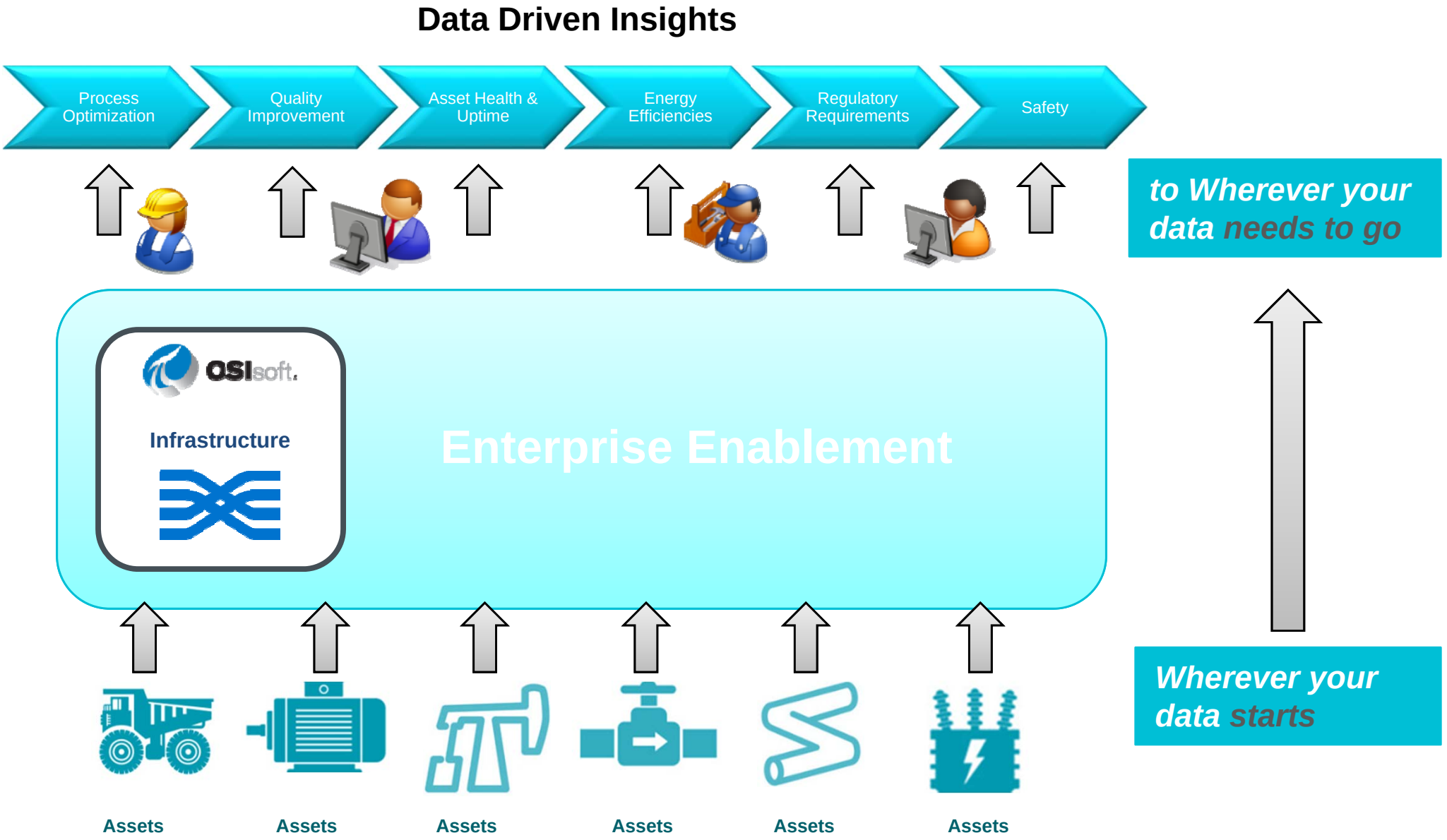
An Enterprise Infrastructure



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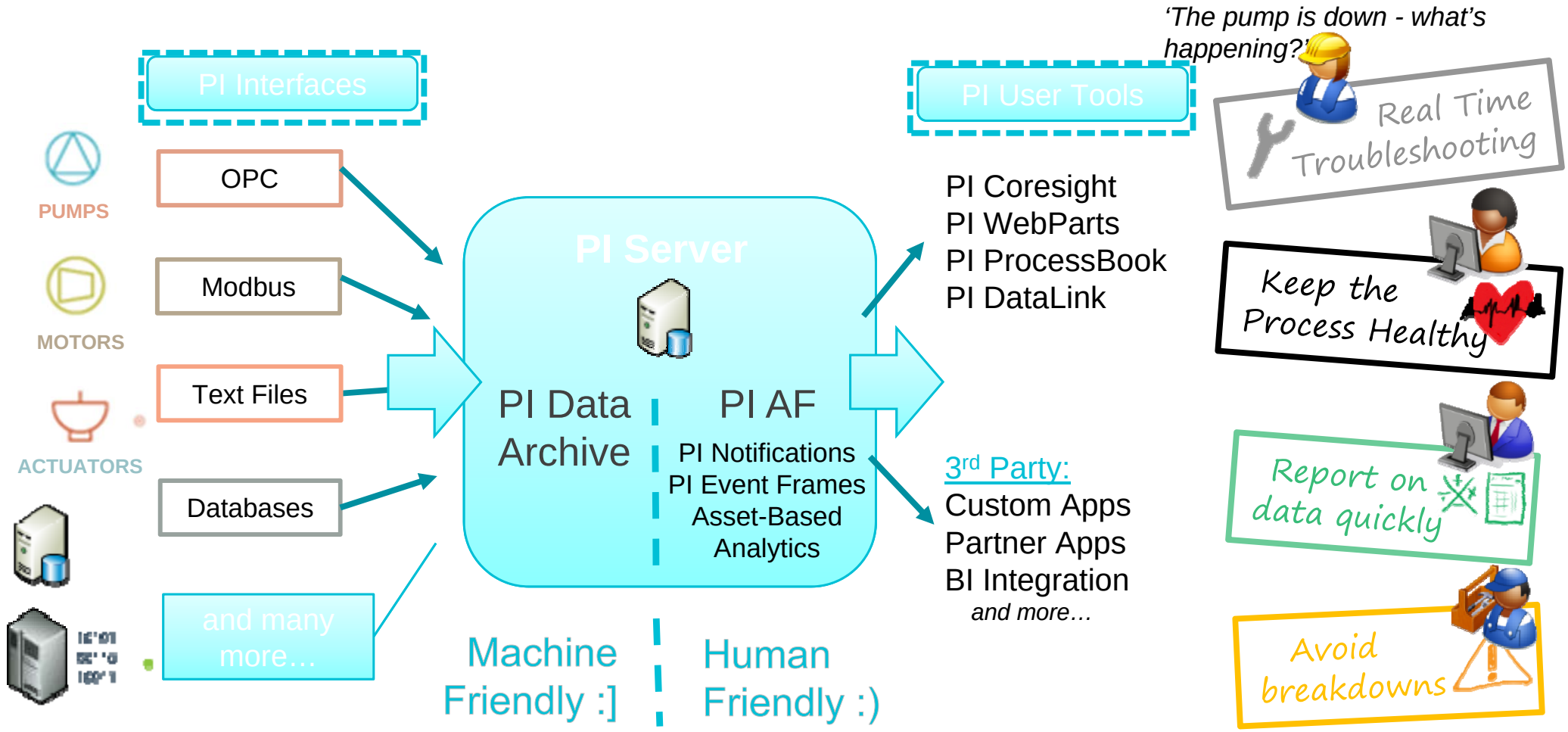
What is part of our Infrastructure…



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What is included in PI Server 2014

- **Time Series Data Storage**
  - PI Data Archive
- **Contextual, Organize and Find**
  - PI Asset Framework (PI AF)

- **Mark Important Events**
  - PI Event Frames
- **Notify Based on Conditions**
  - PI Notifications

- **Analytics and Event Generation**
  - Asset-Based Analytics
  - PI ACE (Advanced Computing Engine)
  - PI Performance Equations
  - PI Totalizers

- **System Management**
  - PI System Management Tool
  - PI Interfaces for System Management

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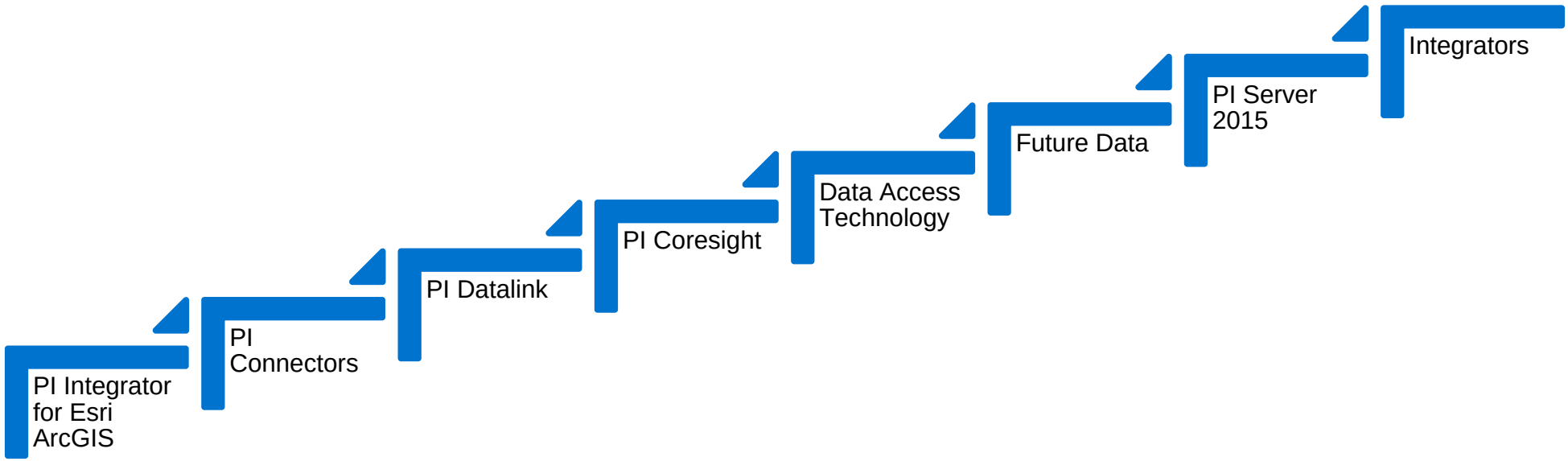
Future OSIsoft technologies are based on assets



PI System Roadmap

https://techsupport.osisoft.com/Products/Product-Roadmap

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Asset-Based Analytics

- Easy – empower users to build their own calculations

- Reuse and standardize
  - Clarity and correctness

- KPIs and Rollups
- Automatic Event marking

- And of course, *Performance and scalability*

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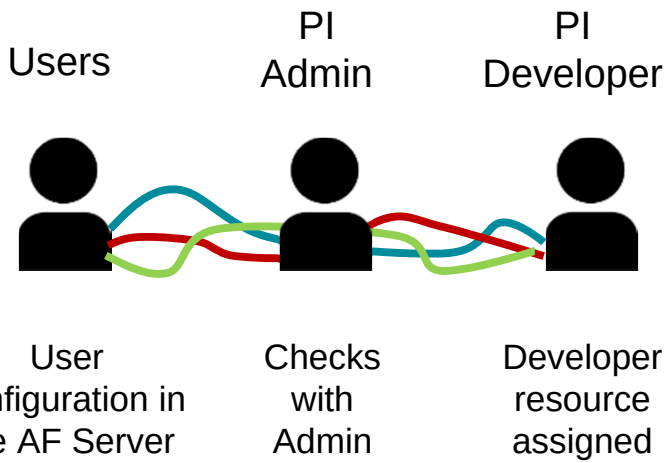
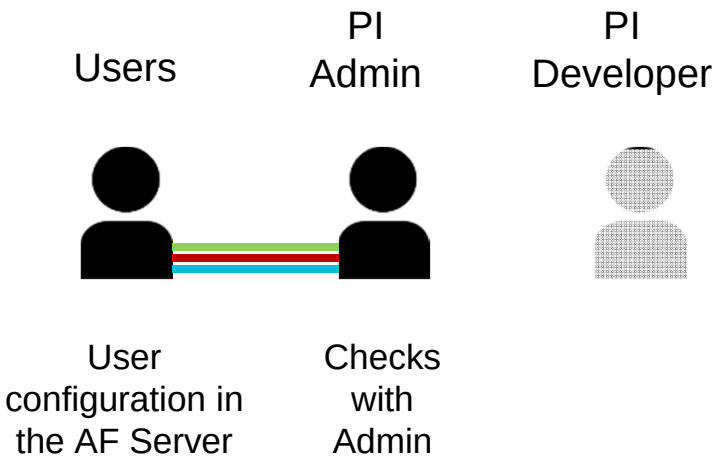
Asset-Based Analytics: Self-Service Analytics

Before



- Slows down time to value
- Creates complexities (interactions are numerous)

After



- Immediate feedback, validate what your looking for
- Build new elements from templates, added analysis inherited by derived elements

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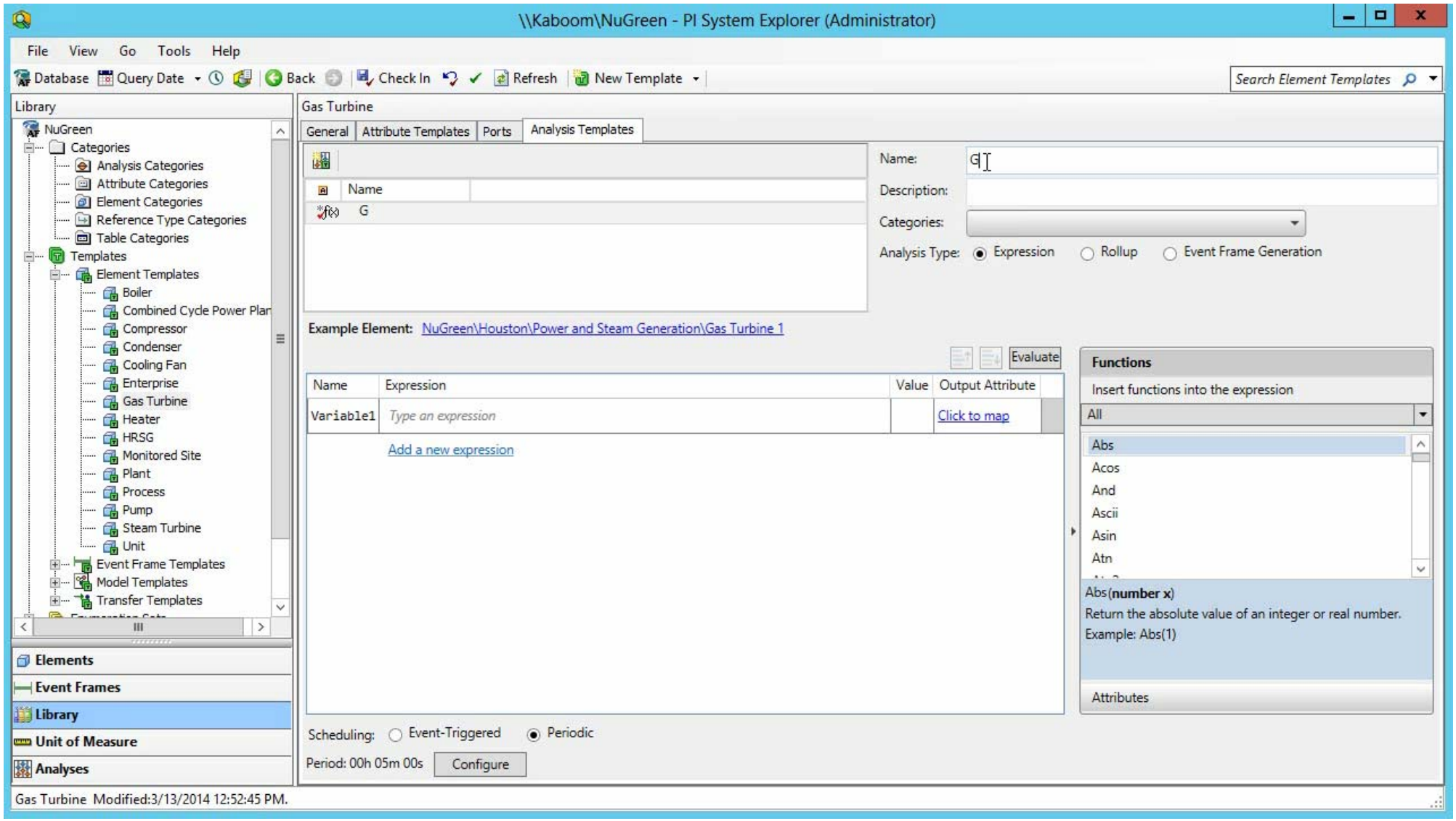

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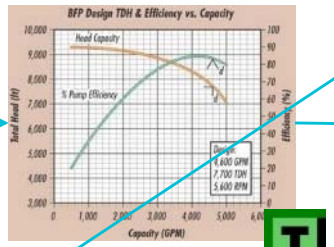
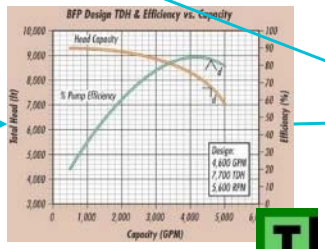
Usage Scenarios

Test

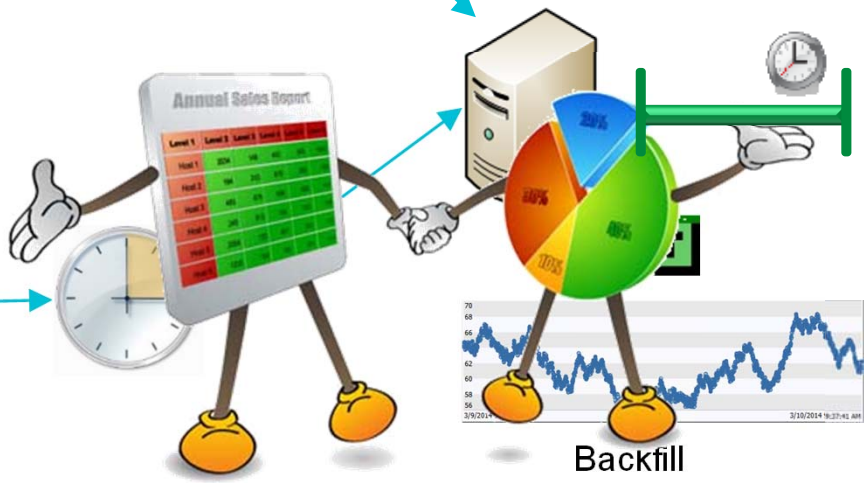


Calculations

Test



Calculations



Backfill

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Information
Challenges

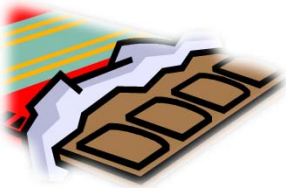
PI Event Frames

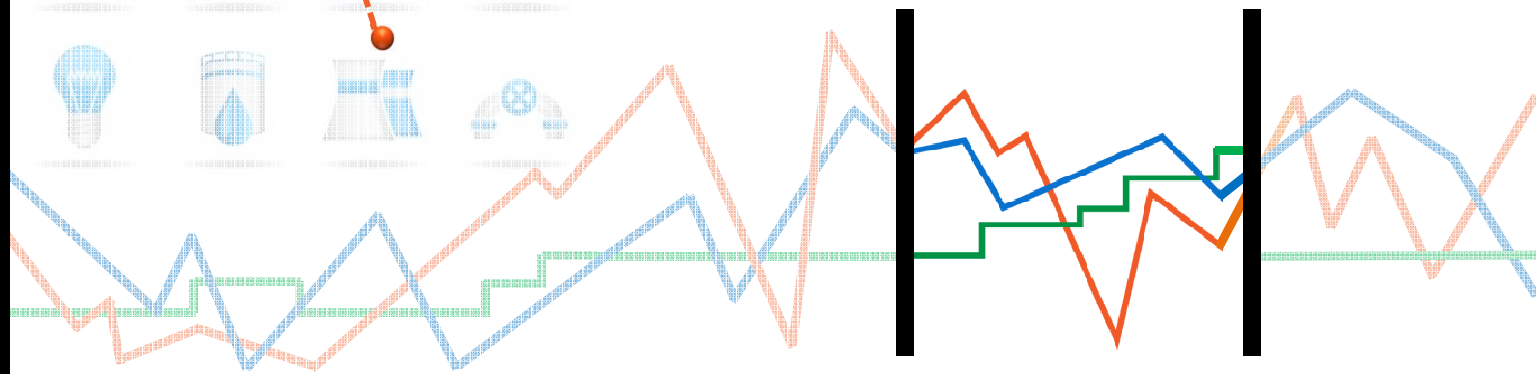
Events Shorten the Time to Insight

Too High!

Downtime

Batches





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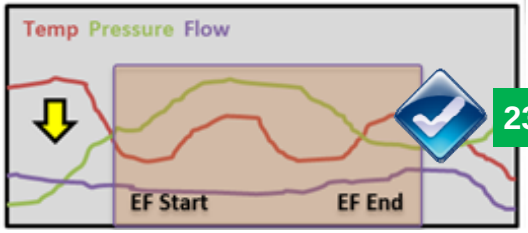
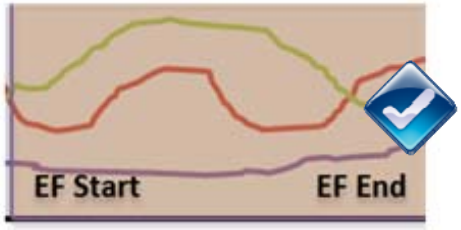
EF Customer Survey: Most Important EF Visualization

(1) Trend: Time Leading up to EF Start



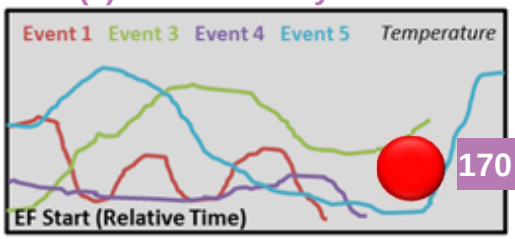
232 votes

(2) Trend: EF Start to EF End



214 votes

(3) Event Overlay Trend

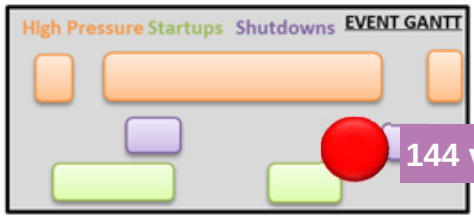


170 votes

(4) View Event Attributes in Table

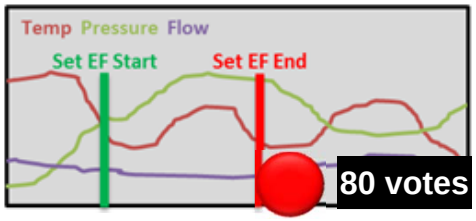
154 votes

(5) Gantt Chart (aligned w/trend)



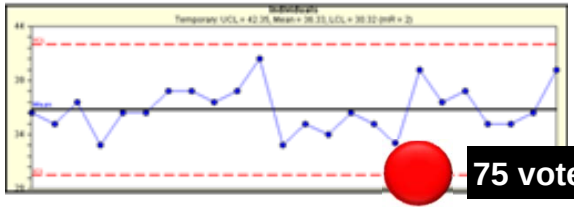
144 votes

(6) Manual Creation of Events



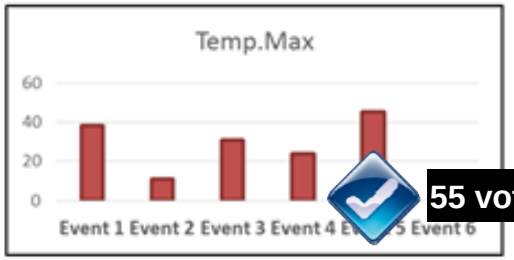
80 votes

(7) SQC Chart



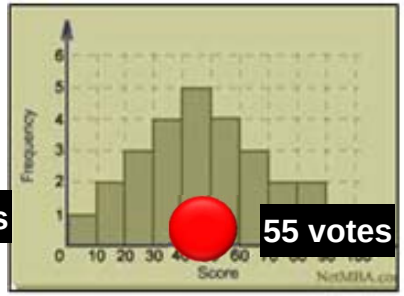
75 votes

(8) Line / Column Chart (Event x-axis)



55 votes

(9) Histogram



55 votes

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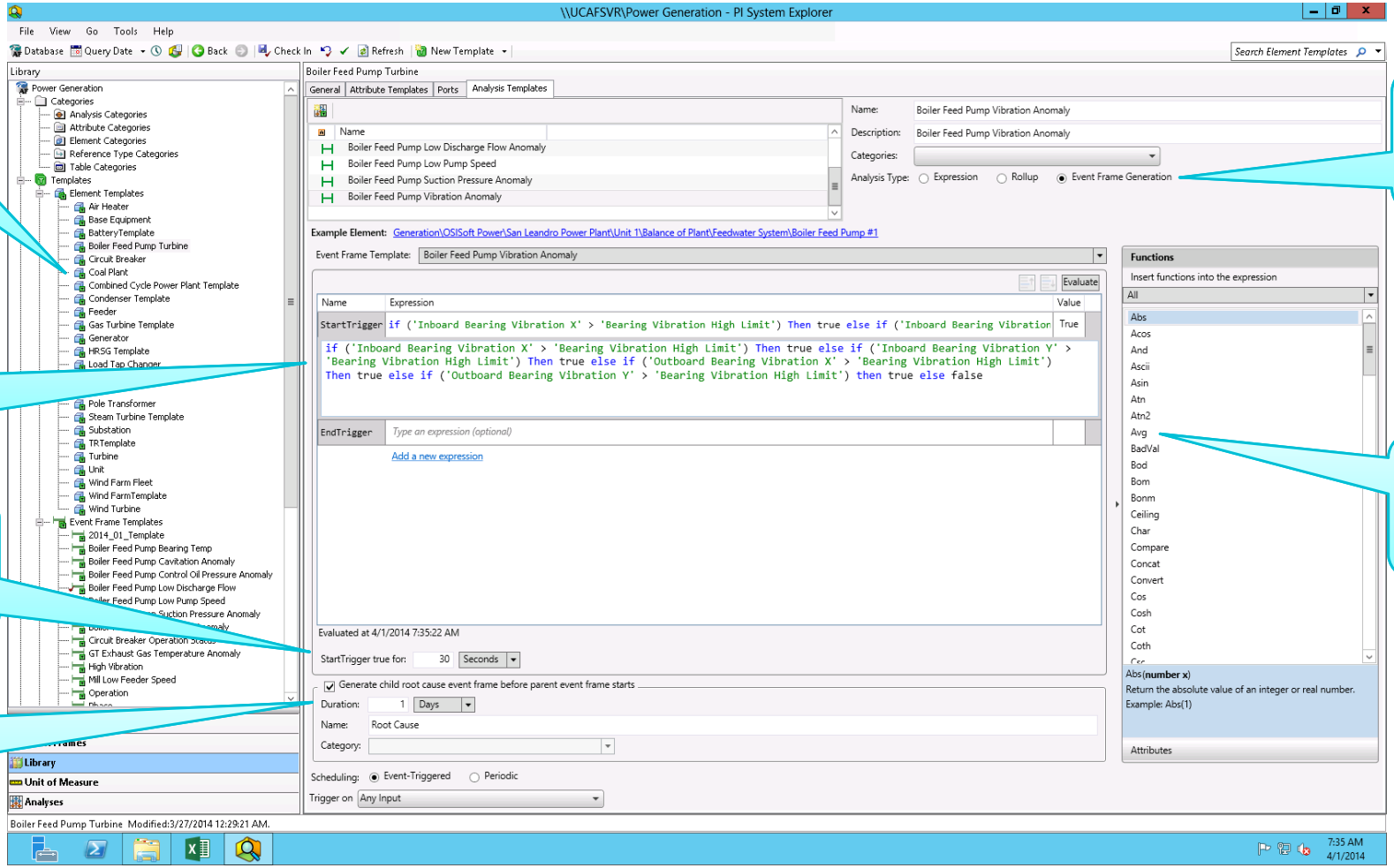
PI AF Asset Based Analytics – Event Detection



Element Template

EF Start Trigger

Time True

Root Cause Child Events

Type = EF Generation

PE Functions

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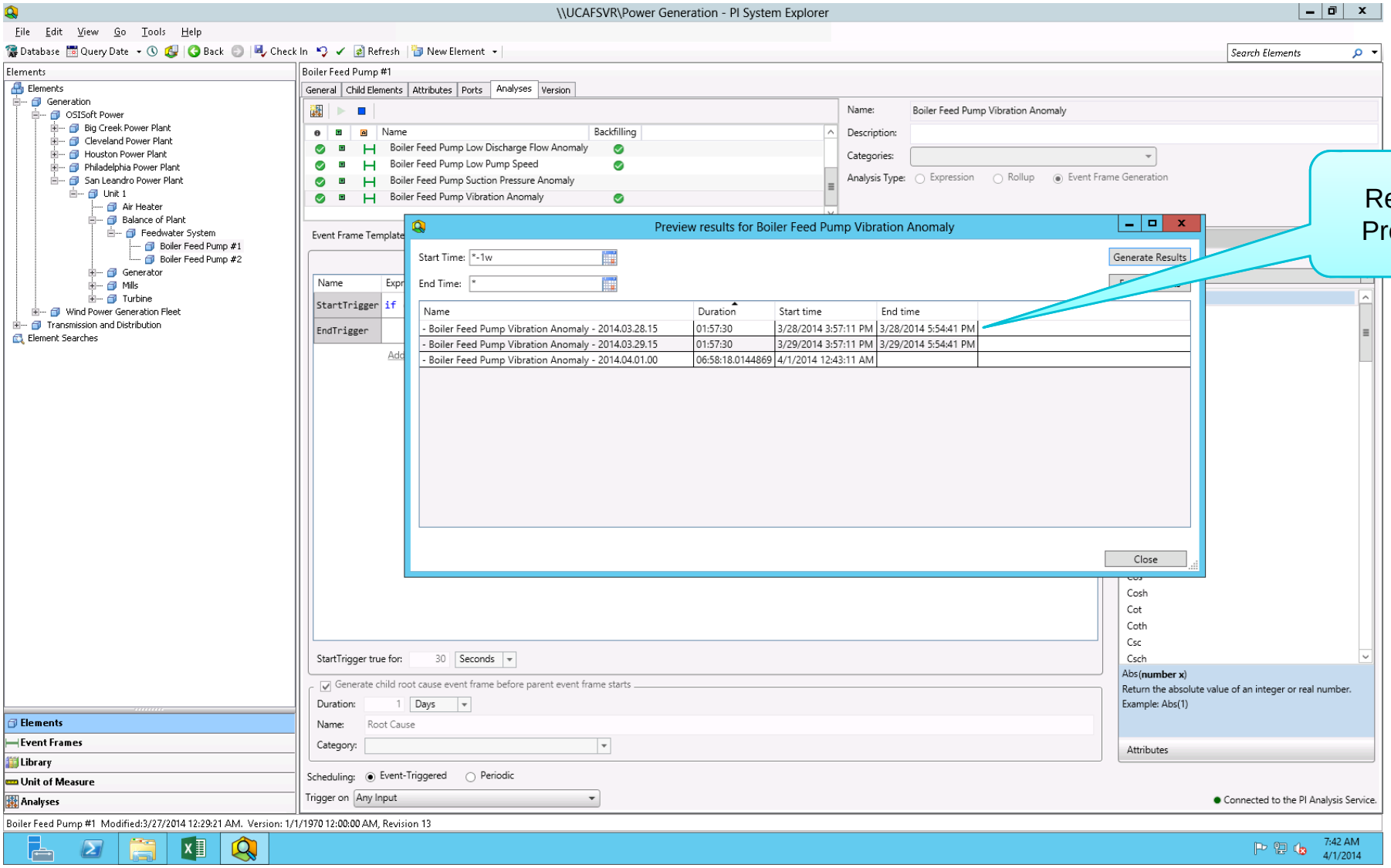
PI AF Asset Based Analytics – Event Preview



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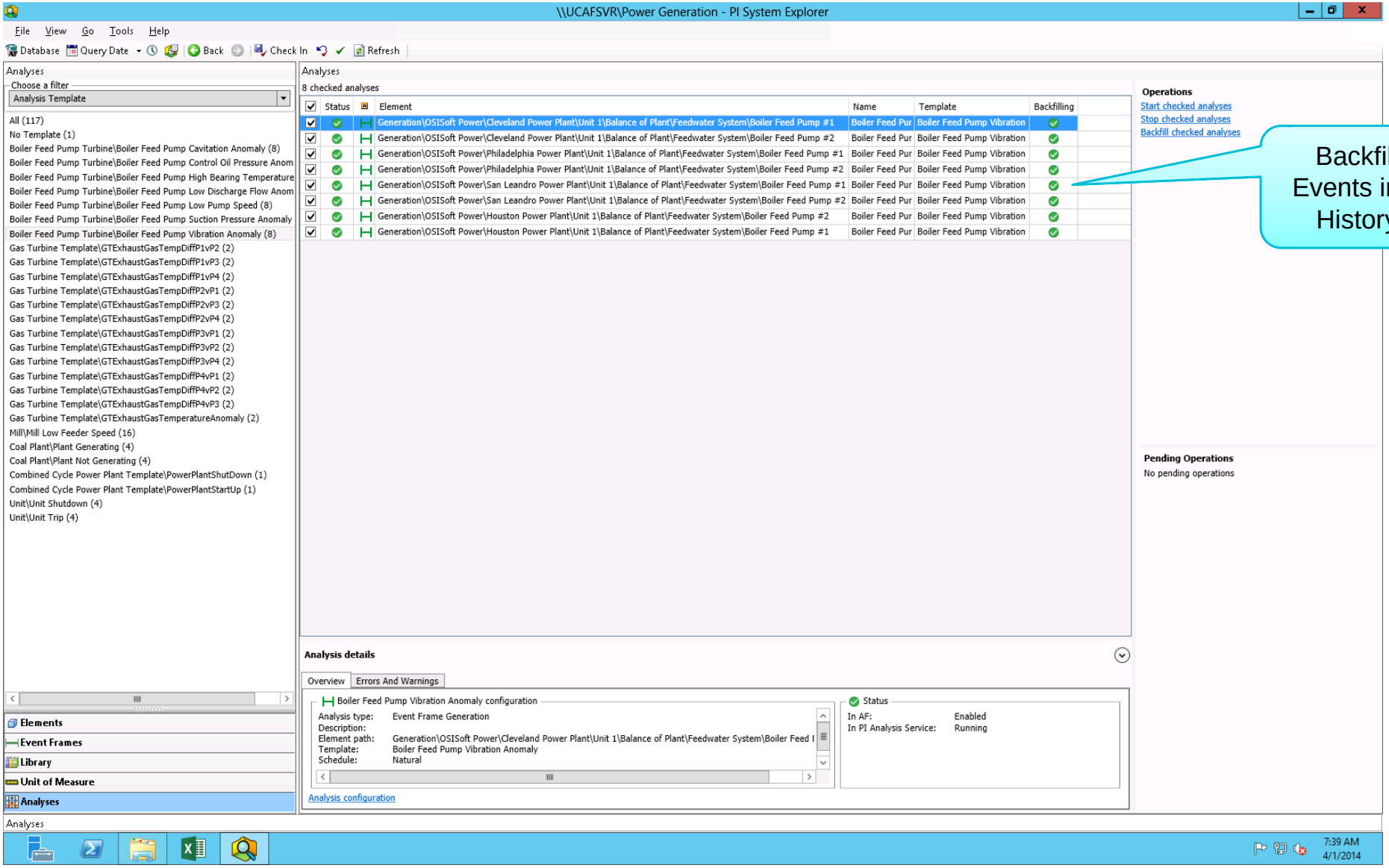
PI AF Asset Based Analytics – Backfilling Events



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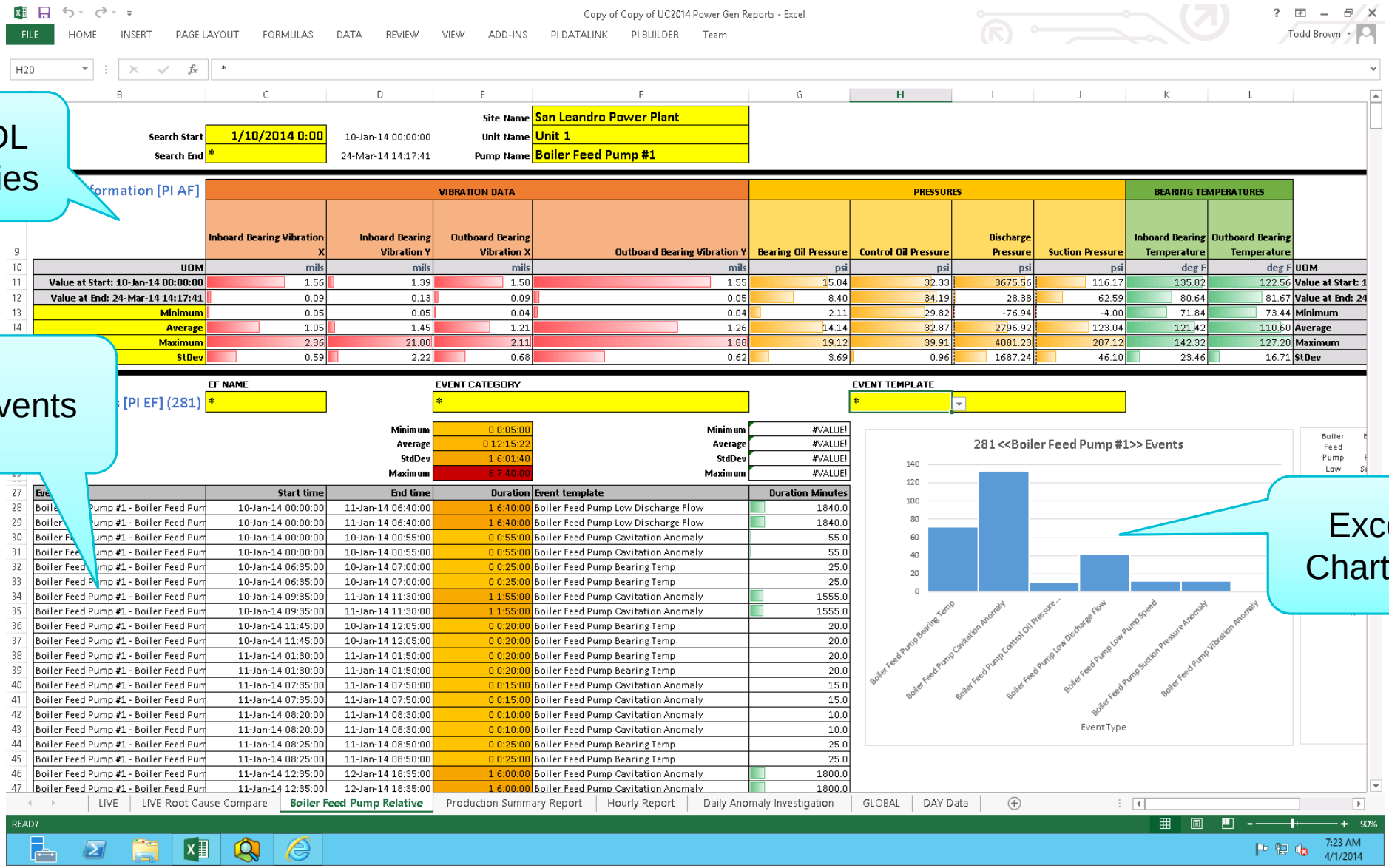
PI DataLink 2014 – Pump Relative Report



AF DL Queries

Events

Excel Charting

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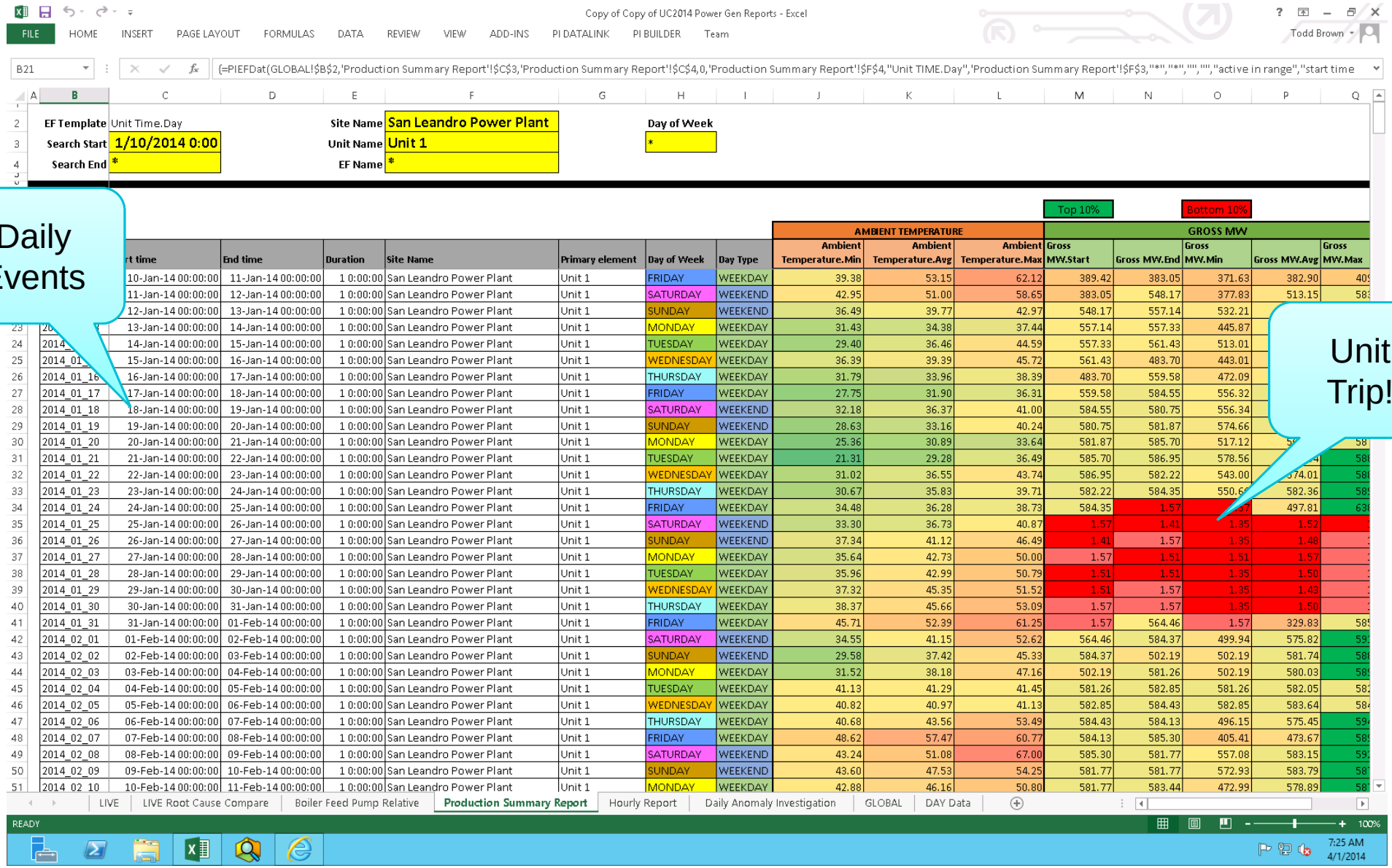
PI DataLink 2014 – Daily Events Production Report



Daily Events

Unit Trip!

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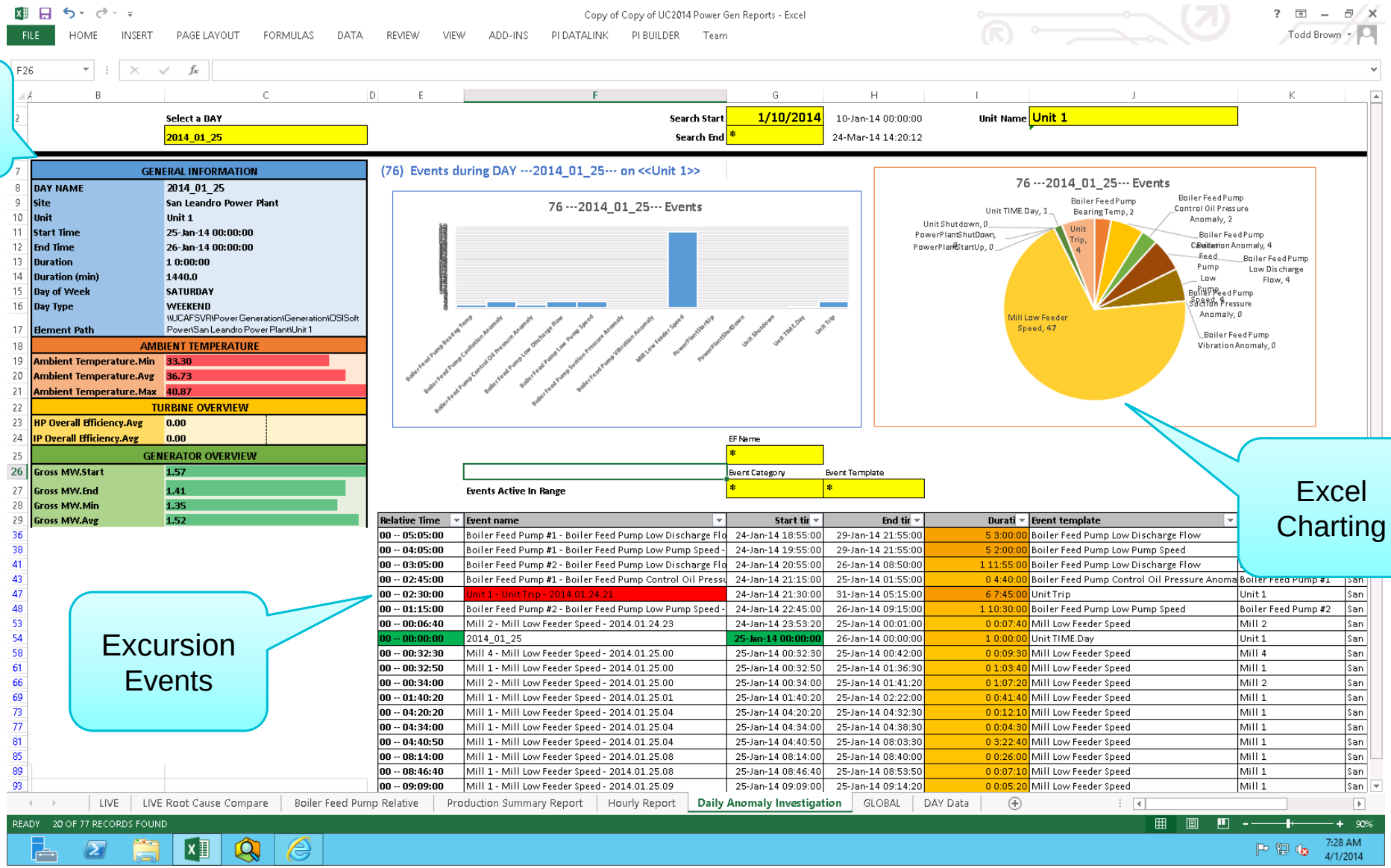
PI DataLink 2014 – Daily Anomaly Report

Daily Data

Excursion Events

Excel Charting



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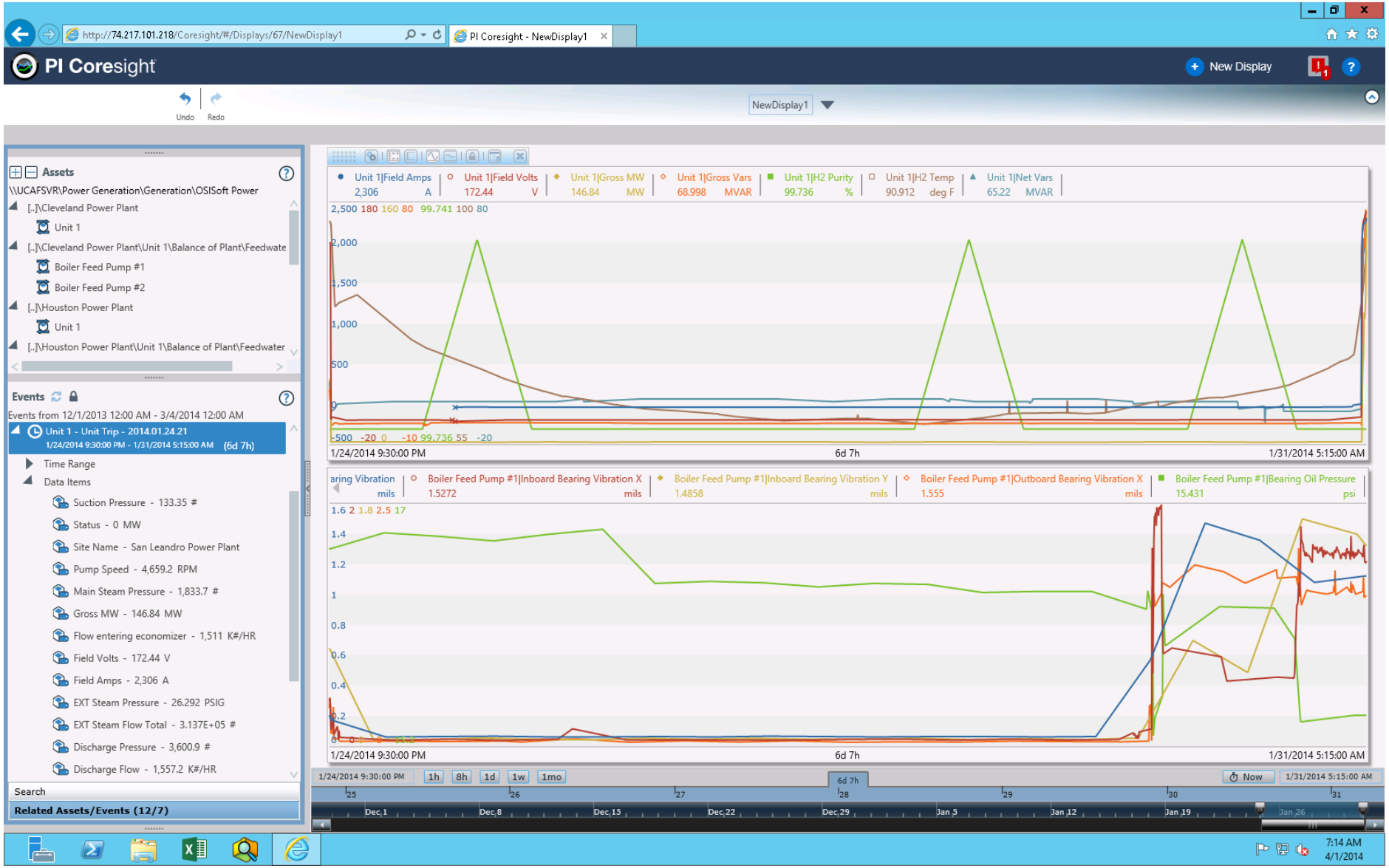
PI Coresight – Event Trending & Related Data



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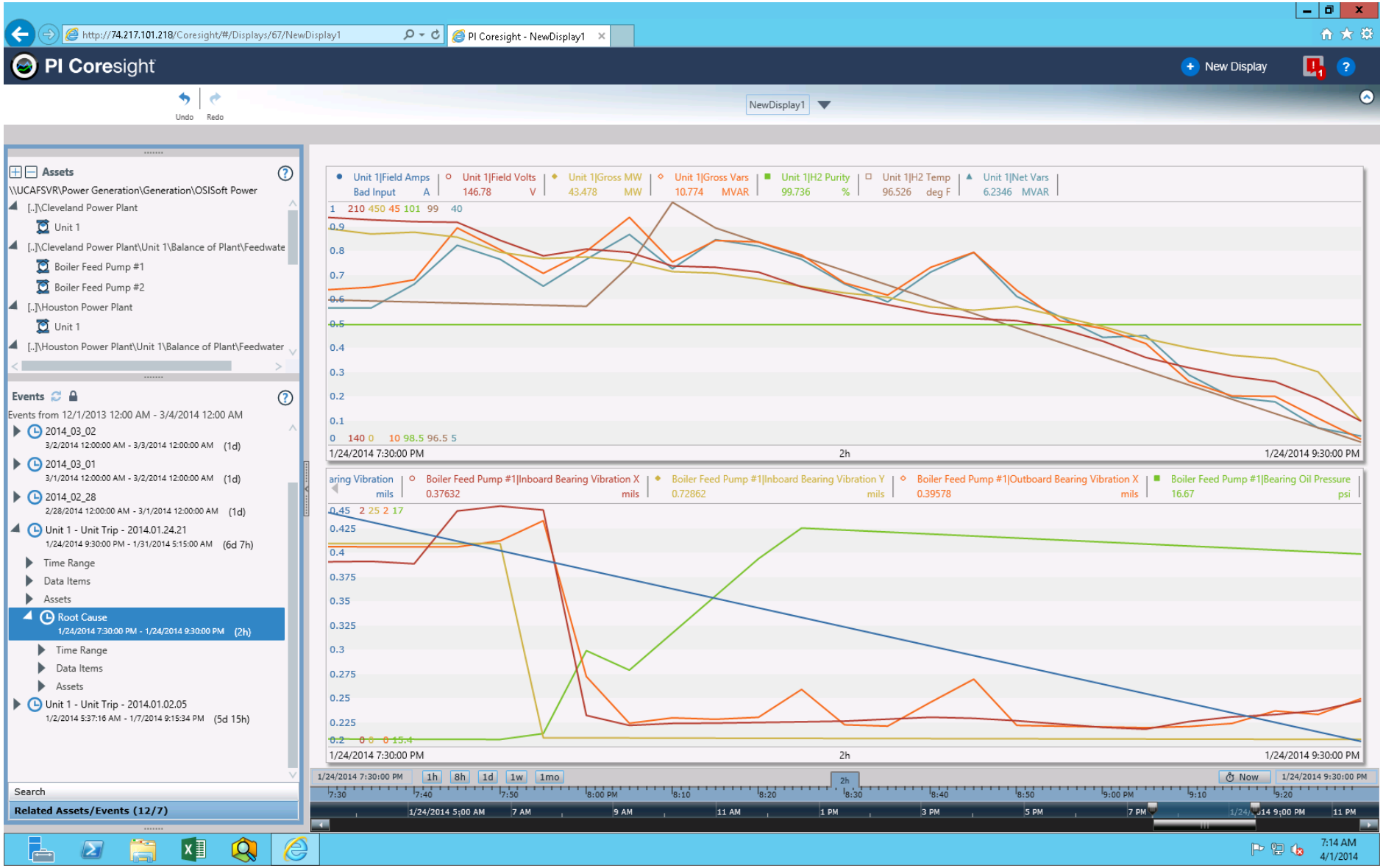
PI Coresight – Root Cause Event Trending



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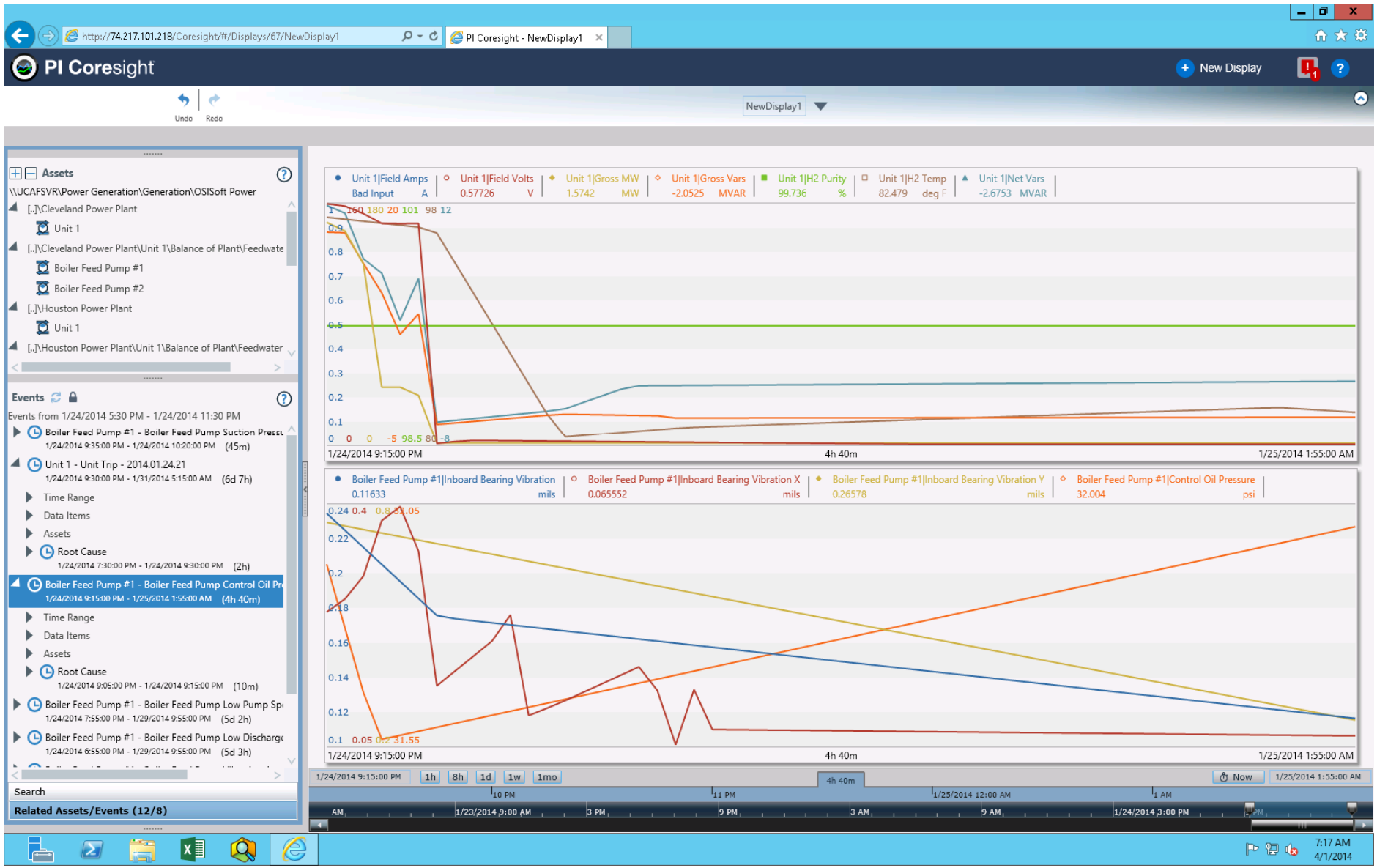
PI Coresight – Anomaly Events



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PI Event Frames

2014

- PI Web API – Initial EF Support
- **PI AF Asset Based Analytics – Event Detection**
- **PI DataLink 2014 – Events in Excel**
- PI AF 2014 – EF Value Capture, Locked EFs
- PI AF 2014 – Audit Trail Viewer

2013

- **PI Coresight – Hierarchical Events**
- **PI Coresight – Related Events**
- **PI System Access – PI OLEDB Enterprise, PI Web Services, PI JDBC**
- **PI Event Frames Generator**

2012

- PI AF SDK – Programmatic Access
- PI AF – PI Event Frames Database

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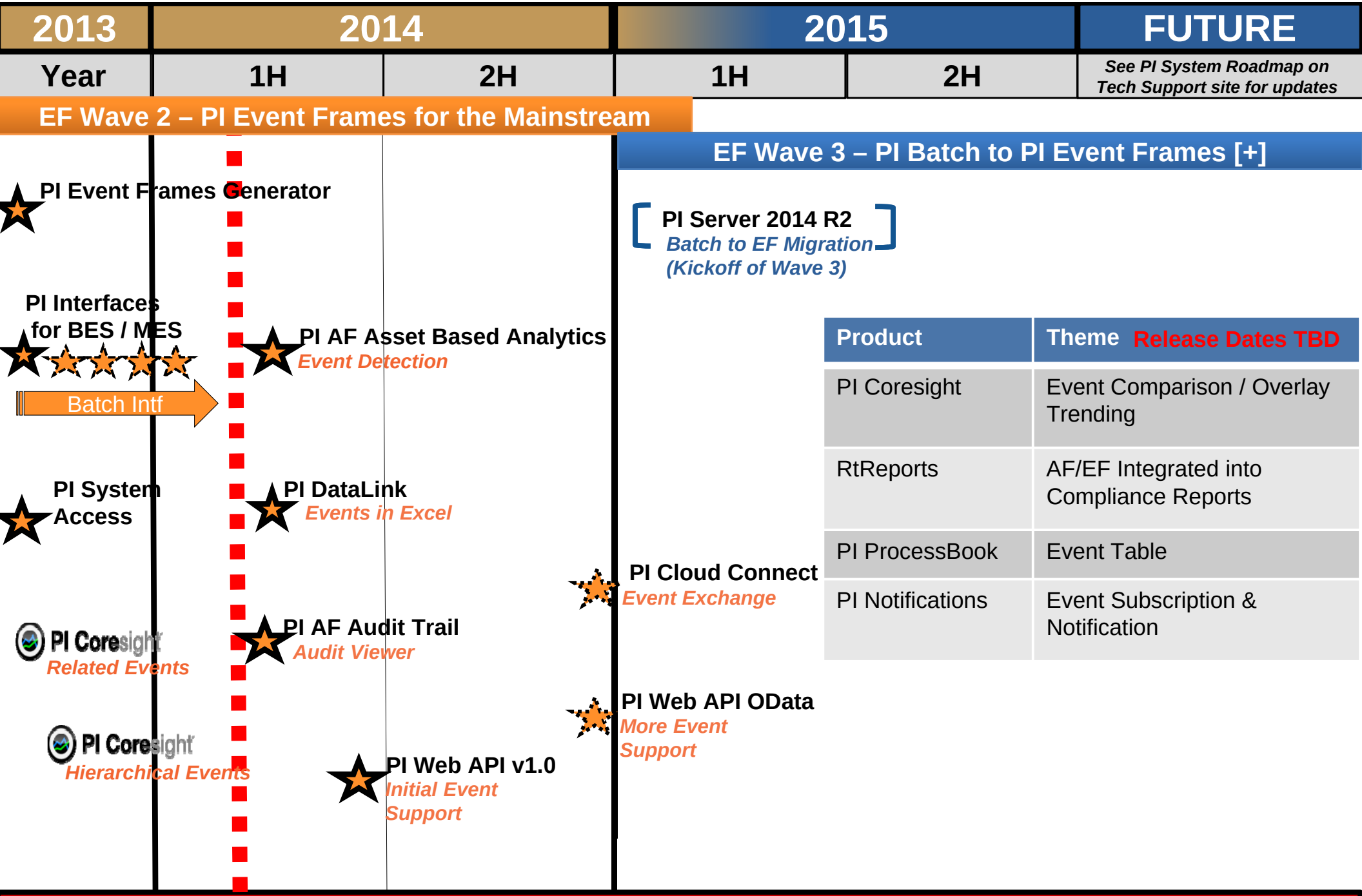

NOTE: Future dates & plans are subject to change. *Last Updated: 03-25-2014*

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PI Coresight 2014

Transitional release with Big New Features

- Moving from desktop browser only to phone, tablet, and desktop
- Making PB displays available on new devices and combine them with new visualization tools
- Improving performance and scalability
- On the path to fully integrated visualization toolset
  - High fidelity display editor
  - Ad-hoc investigation
  - Analytics and Notifications
  - Any device anywhere

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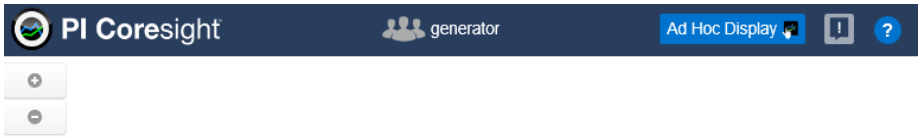
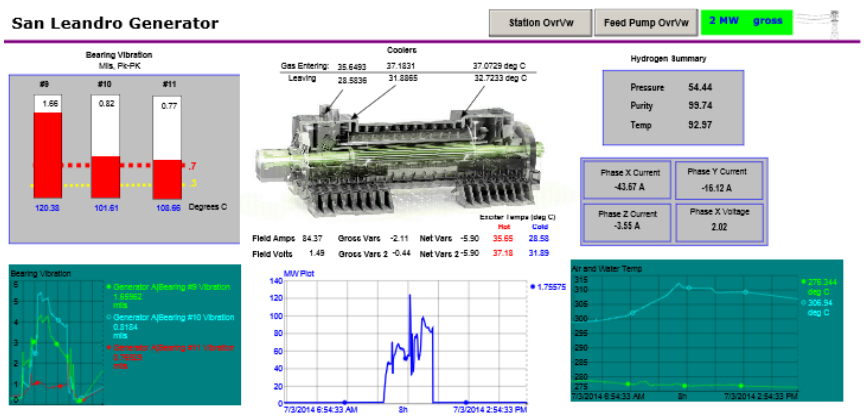
PI Coresight 2014



I need to access my graphic displays and real-time data using any modern browser so that I can trouble shoot problems without special software installed.



PI ProcessBook Display Viewing

- Viewable on any modern browser
- Displays organized by import folder
- No special software needed on the client machine

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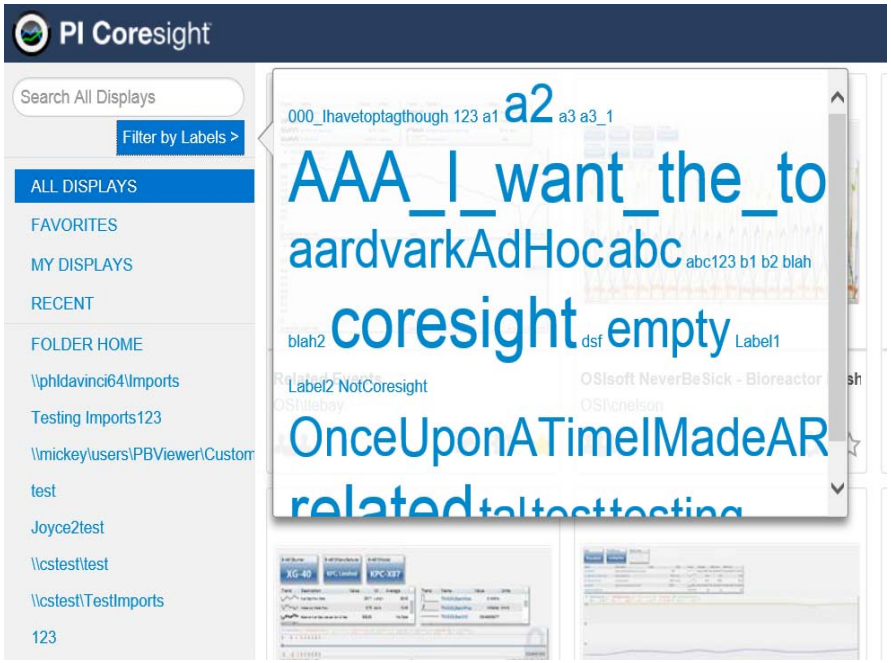
PI Coresight 2014

I need to quickly filter the list of displays to see only the ones I am interested in so I don't waste time hunting for what I want.



New Home Page

- Available using any modern browser
- Find and open native Coresight or PB displays
- Organize displays with folders or labels
- Administrator can manage any display

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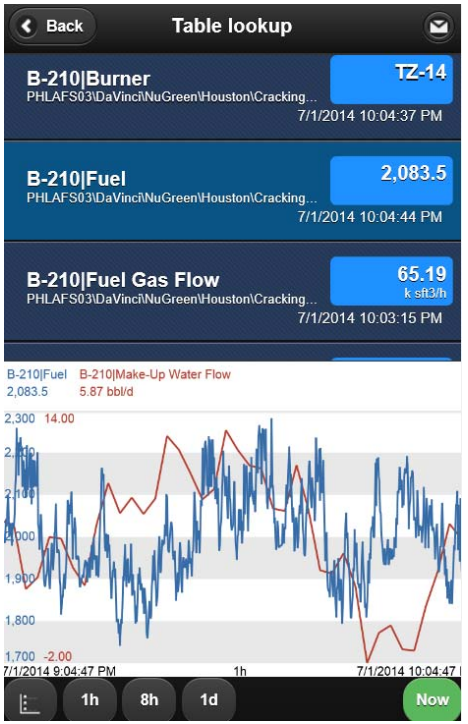
PI Coresight 2014

I need access to my data and displays from anywhere and with any device, so I can solve problems even before I get there.



Mobile site

- Automatically displayed on small screen devices
- Find and display native Coresight and PB displays
- Full display, data item, and asset search

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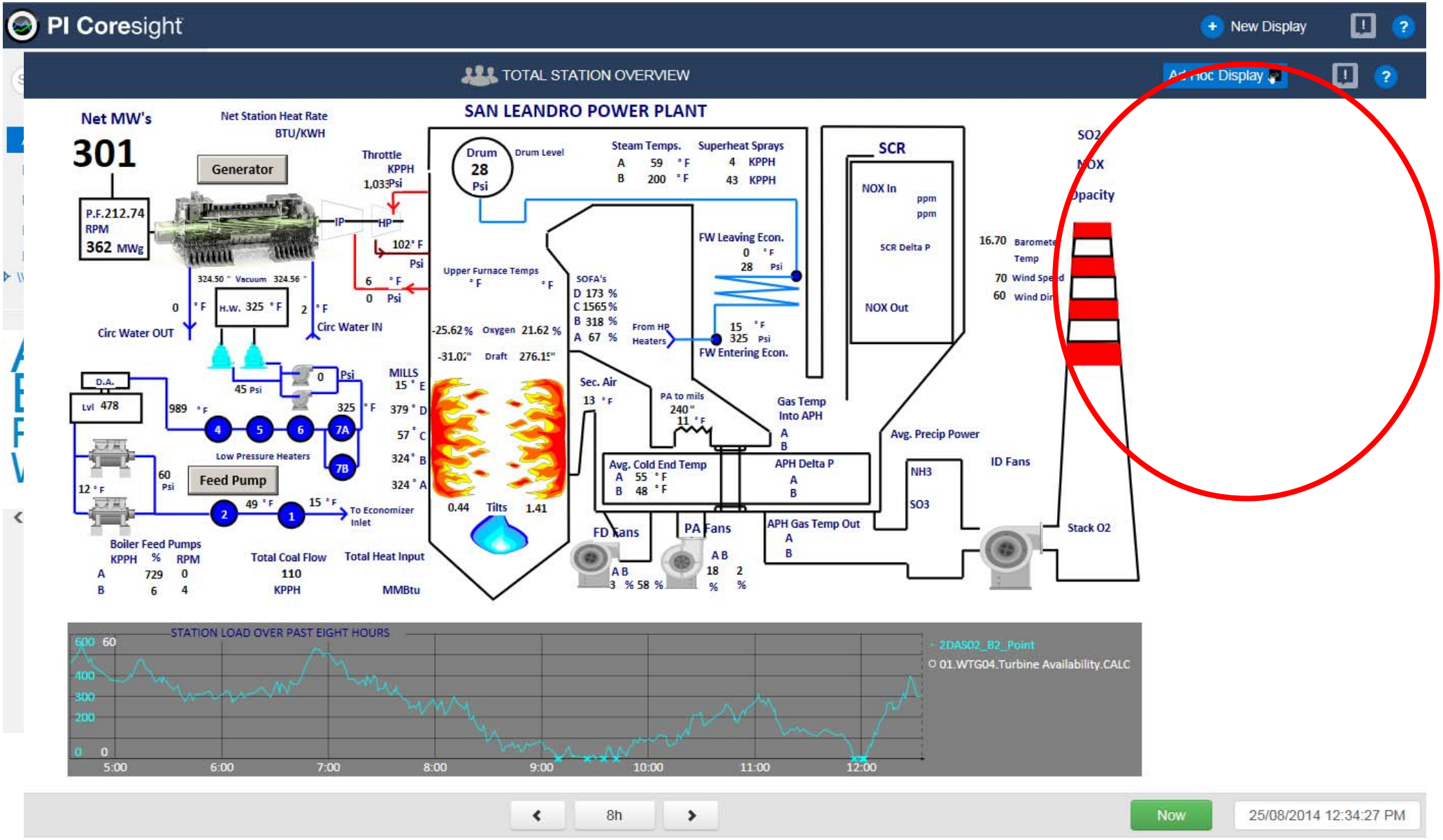

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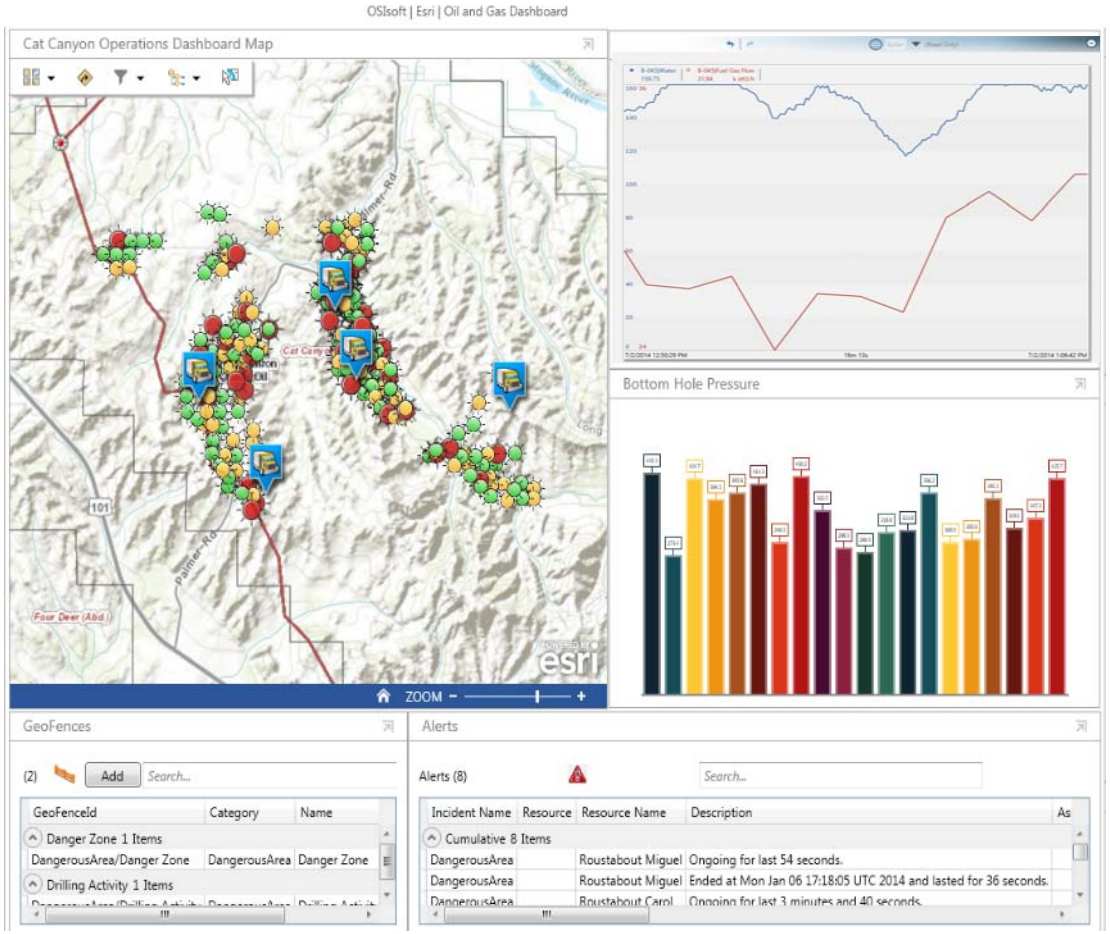
PI Coresight 2014

I need to integrating PI Coresight with business applications and portal sites to get a complete view of operations.

New URI parameters

- Hide Toolbar, Timebar
- Set element of interest for PB displays
- Set time zone for the current display



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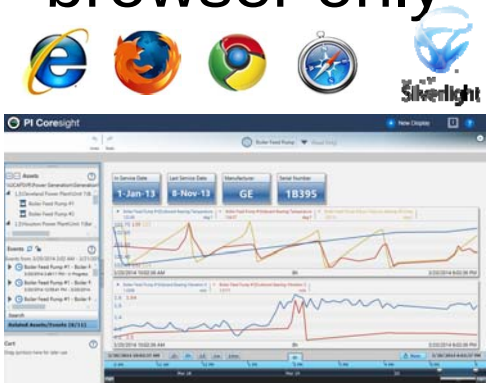
What works where?

Desktop browser only



Displays built in PI Coresight

Any modern browser

Homepage

Mobile site

PB Displays

Native Apps

iPad
iPhone

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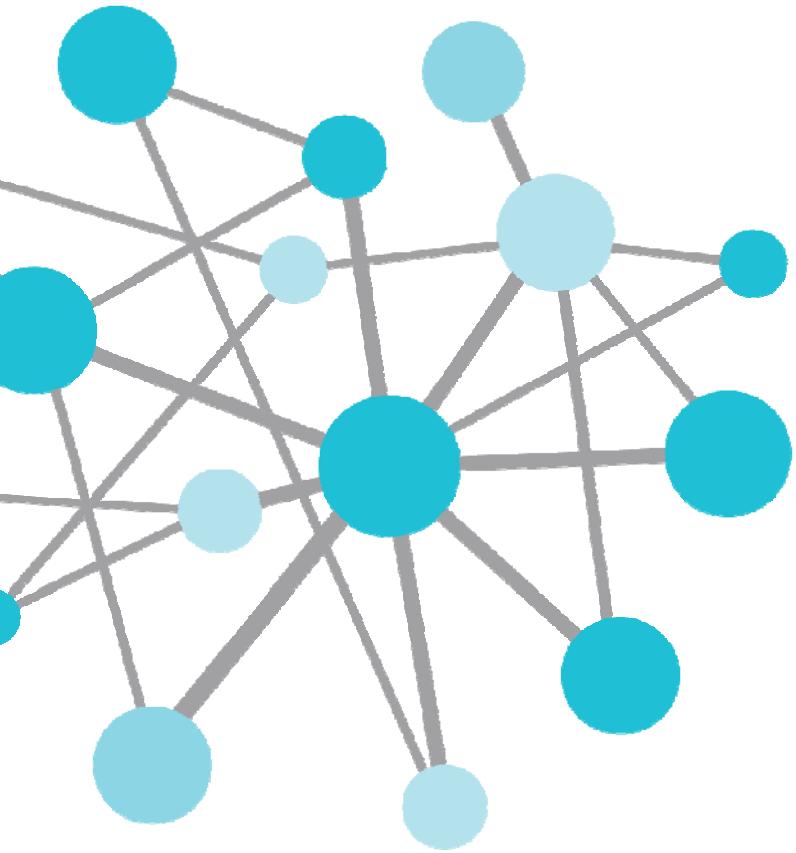

Future Data

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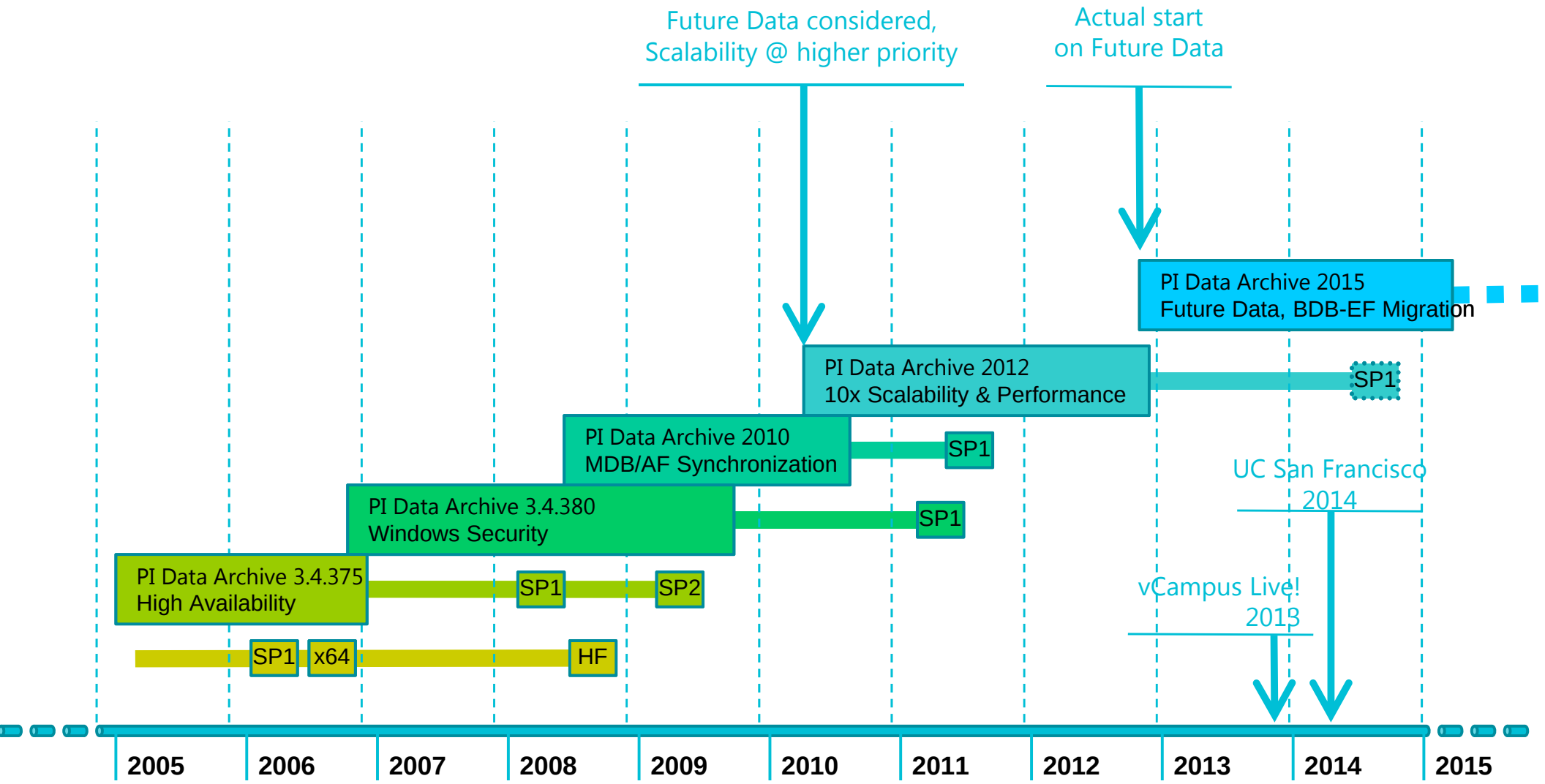

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Does it still matter?

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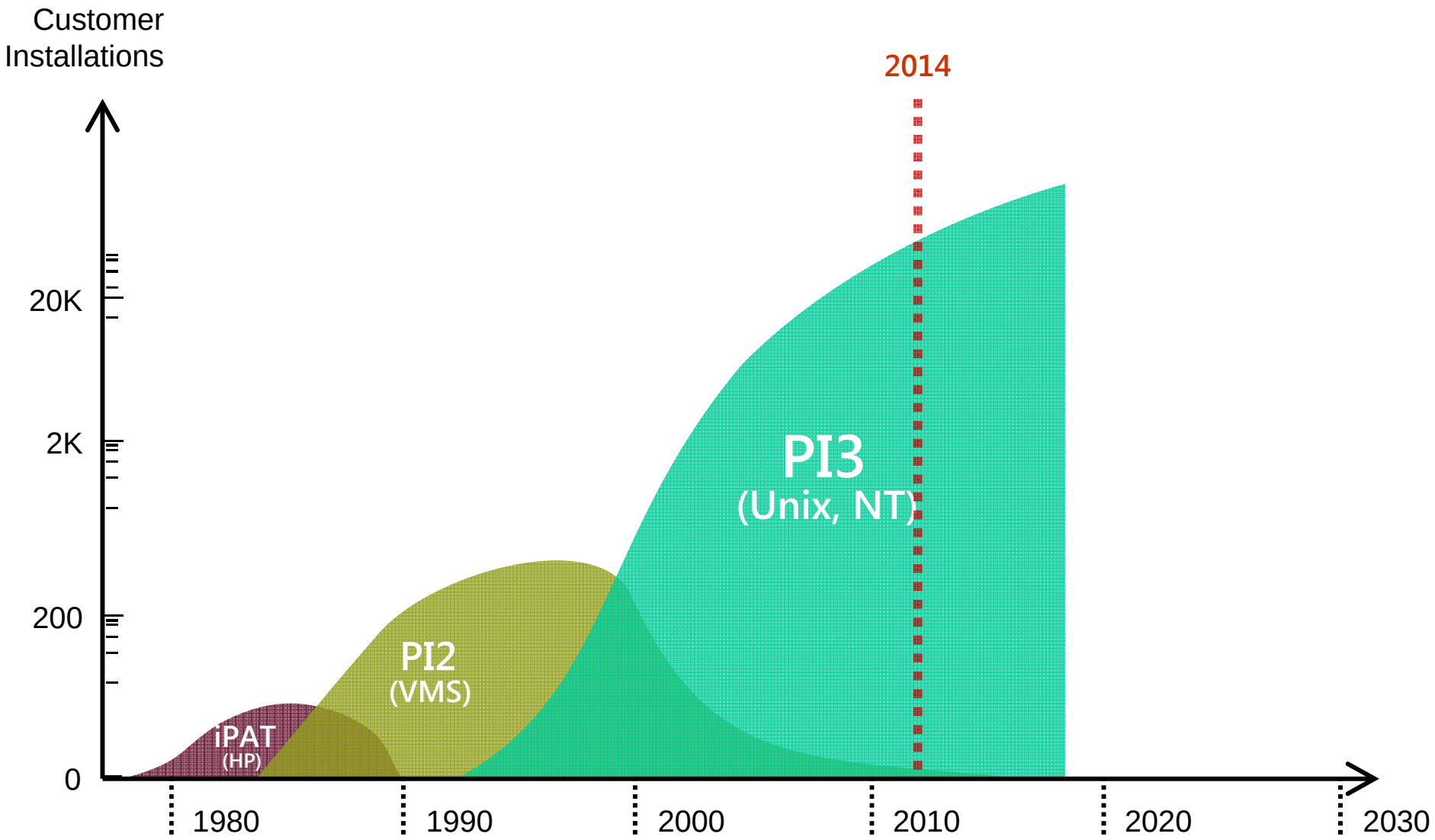

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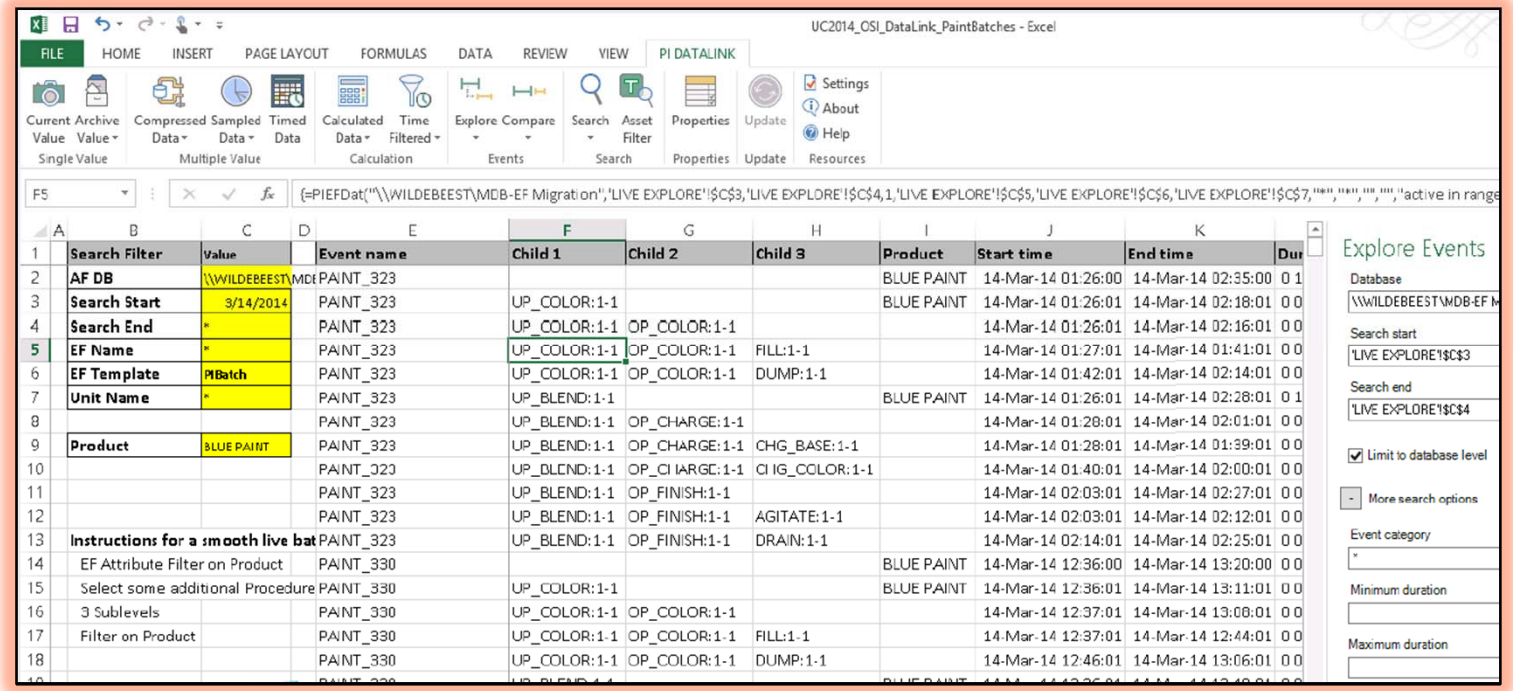
FUTURE DATA "PERFECT STORMS"

PI Event Frames

Analysis, Reporting, Visualization

Use Case: capture and search forecast metadata



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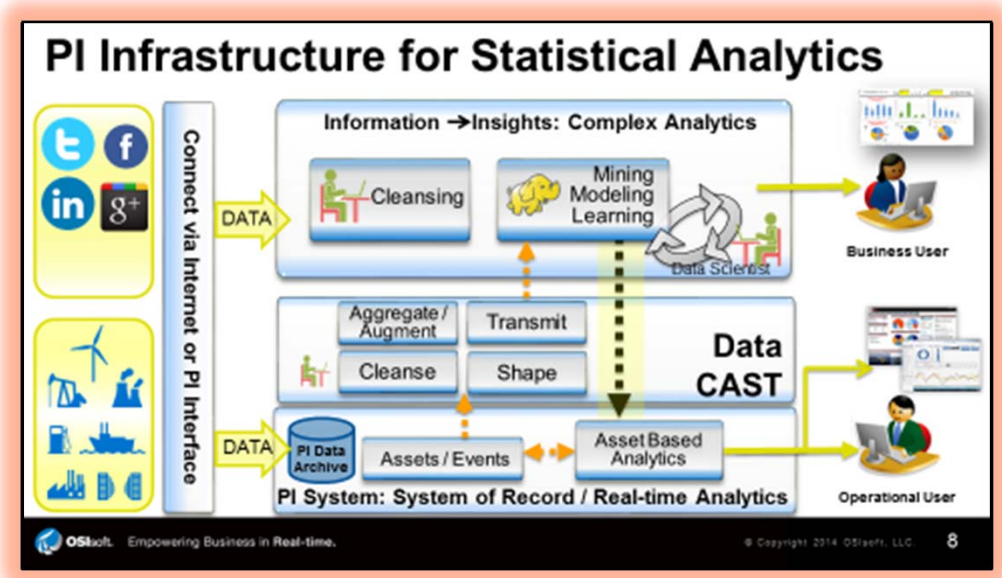
FUTURE DATA "PERFECT STORMS"

PI Integrator "CAST" for Hadoop
Big Data Analytics
Use Case: feed predictive data back to the PI Server



PI Integrator for Esri ArcGIS
Geospatial Forecasts (e.g., Weather)
Use Case: overlay future data on live maps

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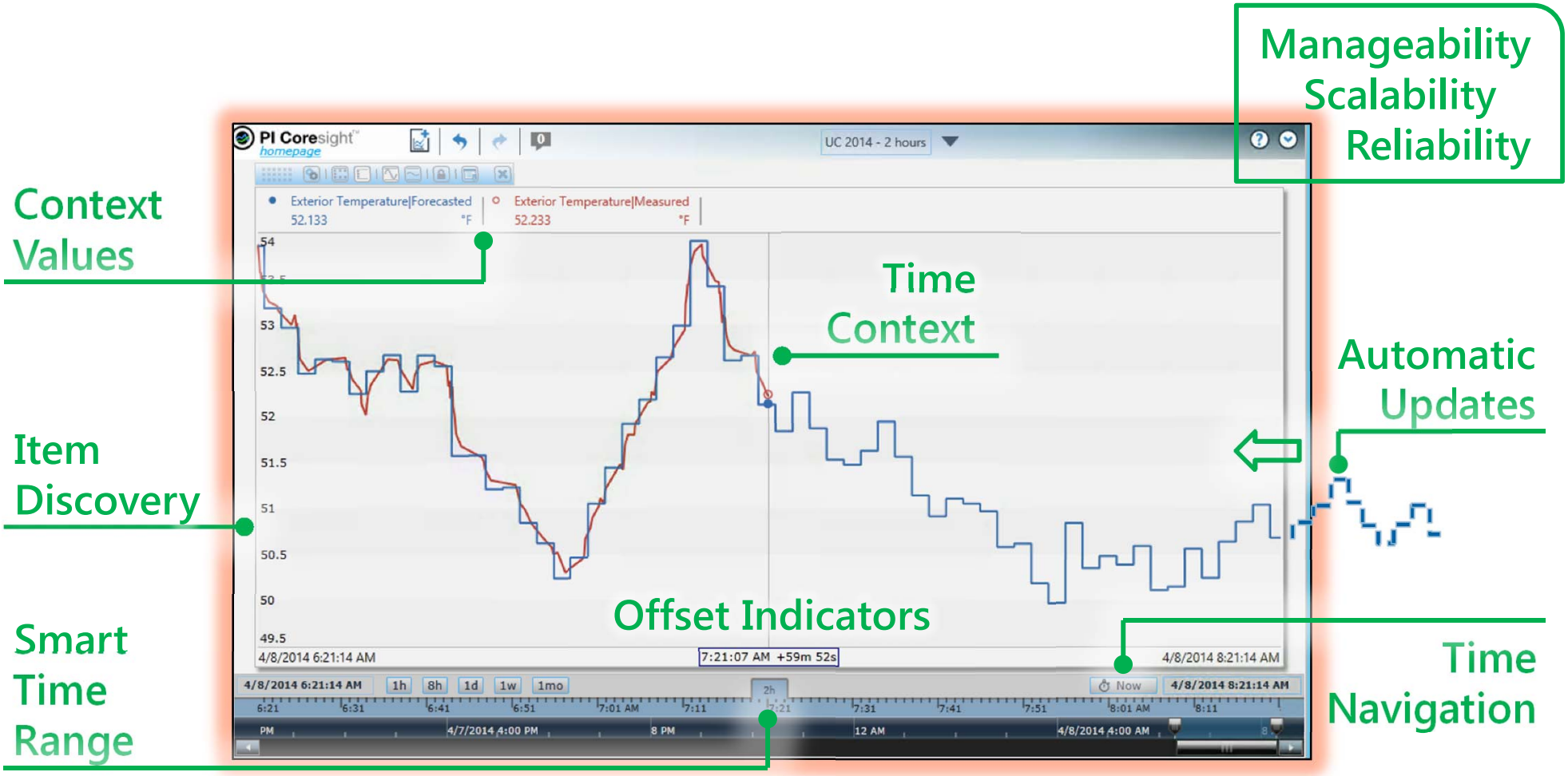
More Than Meets the Eye



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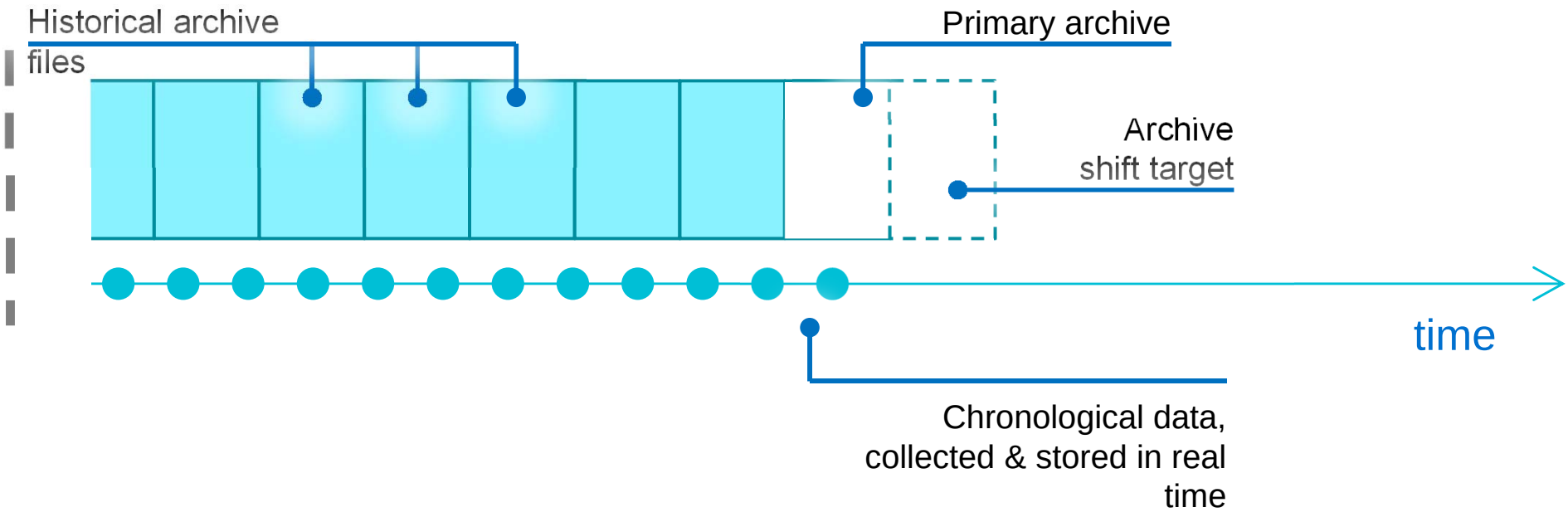
Storing “Historical” Data…



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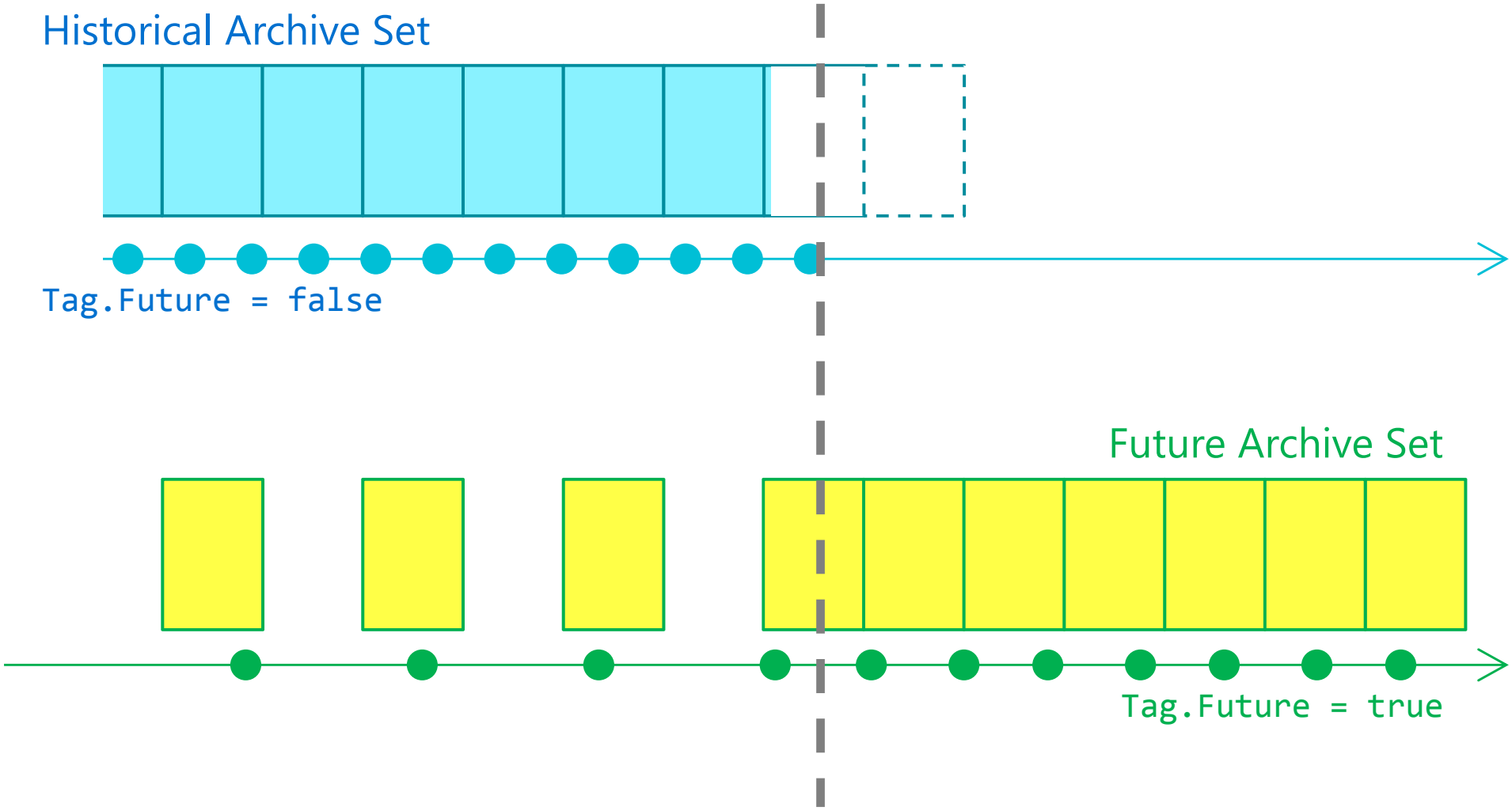
…And Storing “Future” Data



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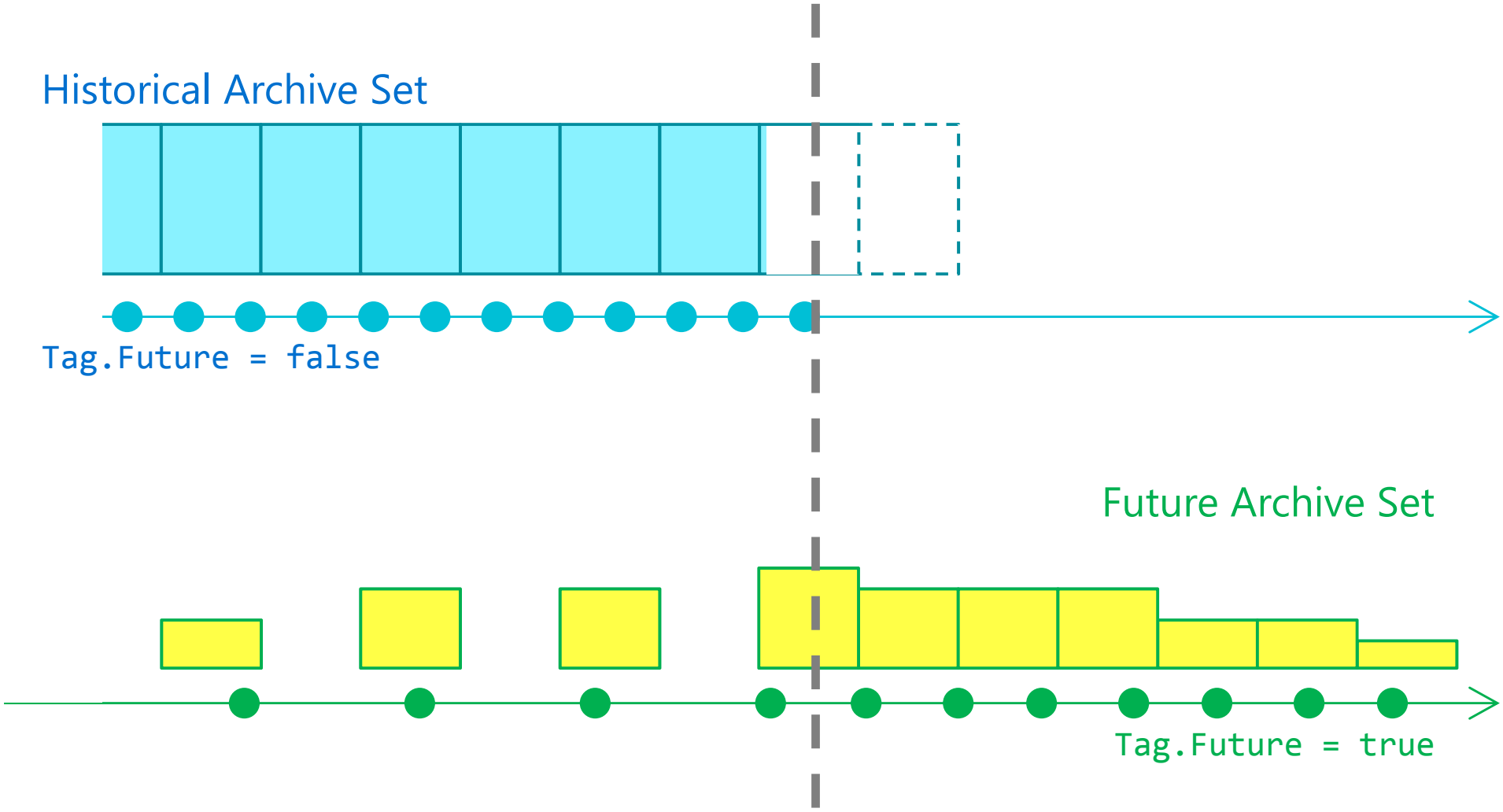
…And Storing “Future” Data



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TURNING CHALLENGES INTO DIFFERENTIATORS

Distinct Storage

Flexible Data Lifecycle,
Reliability & Scalability

New Updates

Accurate and Responsive UX,
Scalable Data Access

File Management

Zero Configuration,
Easy Monitoring

Compatibility

Low Adoption Cost,
Mitigated Deployment Risks

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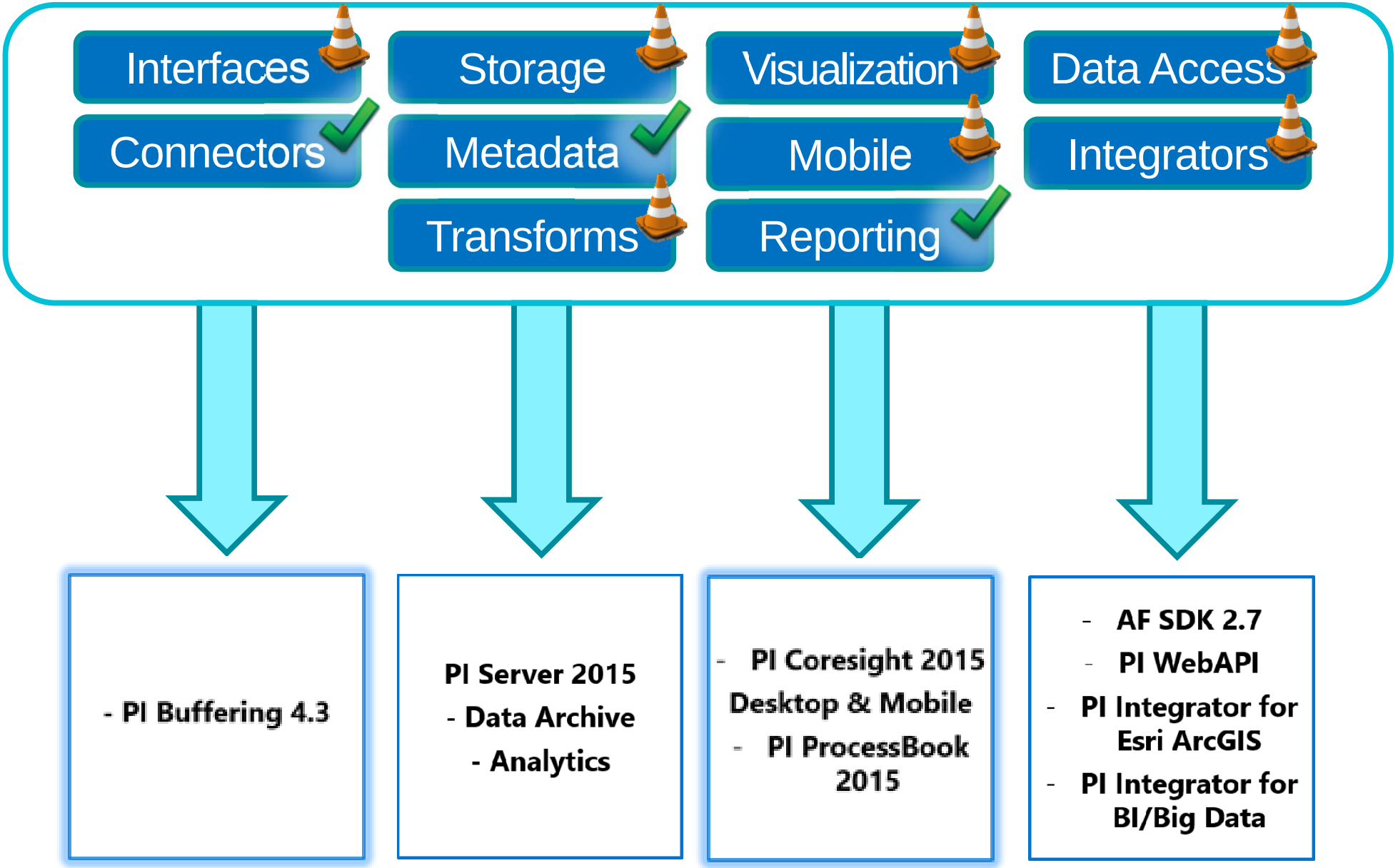

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