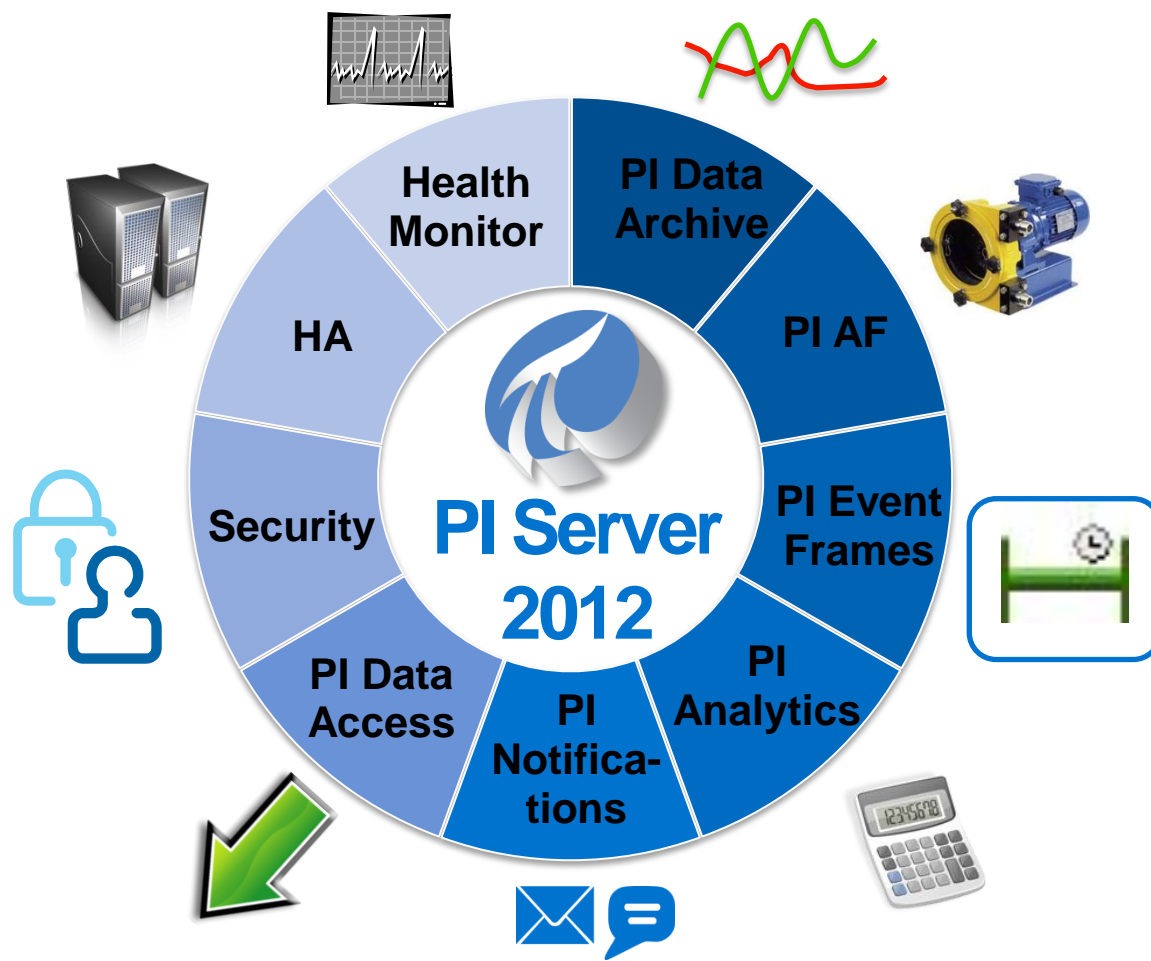




PI Event Frames - Start Delivering Events to the PI System

Presented by **Todd Brown & Chris Nelson**

October 18, 2012



Today's Topic: Events

You might be a **PI Event Frames
customer if ...**

Whenever an **[EVENT]** happens, you need to gather related information.

You want to know which **[EVENTS]** overlap.

You needed a way to standardize your different types of **[EVENTS]**.

You want to know the frequency and duration of an **[EVENT]**.

You need to track all the different **[EVENTS]** in your discrete manufacturing process.

You wish you remembered when an **[EVENT] happened.**

Analyzing your process data in the context of your **[EVENT]** is too time consuming.

You need to track all the process steps (**[EVENTS]**) in your batch manufacturing process.

You want to compare one **[EVENT] to another **[EVENT]**.**

It's hard to find the **[EVENT]** information you're looking for in all your process data.



[EVENT]

related information

which

[EVENTS] overlap

standardize your

[EVENTS]

frequency and duration

[EVENT]

[EVENTS]

discrete manufacturing

remember

[EVENT]

Analyzing

process data in

context

[EVENT]

([EVENTS])

batch manufacturing

compare

find

[EVENT] information

[EVENT] to

[EVENT]



[Startups]

related information

which

[Excursions] overlap

standardize your

frequency and duration

[Safety Event]

[Environmental Excursions]

[Shutdowns]

discrete manufacturing

remember

[Downtime]

Analyzing process data in context

[Anode Tracking]

**[Manufacturing
Order]**

batch manufacturing

compare

**find [Well
Testing] information**

[Paper Grade] to

[Paper Grade]



Utilities

Startups & Shutdowns
Peak vs. Off-peak Power
Environmental Excursions



Metals & Mining

Downtime / Reason Codes
Anode Tracking
Material Transfers



Oil & Gas

Specific Crude Runs
Catalyst Change Outs
Well Testing



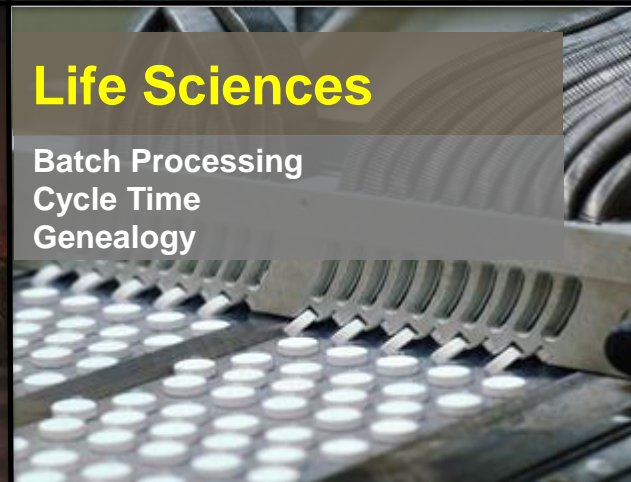
Chemicals

Downtime / OEE / TEEP
Safety Events
Process Excursions



Life Sciences

Batch Processing
Cycle Time
Genealogy



Pulp & Paper

Grade Runs / Grade Changes
Pulp Cooking
Startups of Major Equipment



“Find the downtime events (+ reason codes) on Motor M354 for the past week.”

Tag Based Approach

- Search and find the right tag indicating the downtime for M354.
- Retrieve the compressed data values for the past week.
- Manually identify the start and end time for each ‘downtime’ transition.
- Use the start and end time transitions to query another tag for the reason code. Repeat for each instance.
- Perform additional queries and calculations for other related data to the event.
- Manually copy and paste the data and calculation results into the correct format so that it makes sense for analysis/charting.
- Start performing analysis ***after 30 minutes to hours to NEVER because I don't have time.***

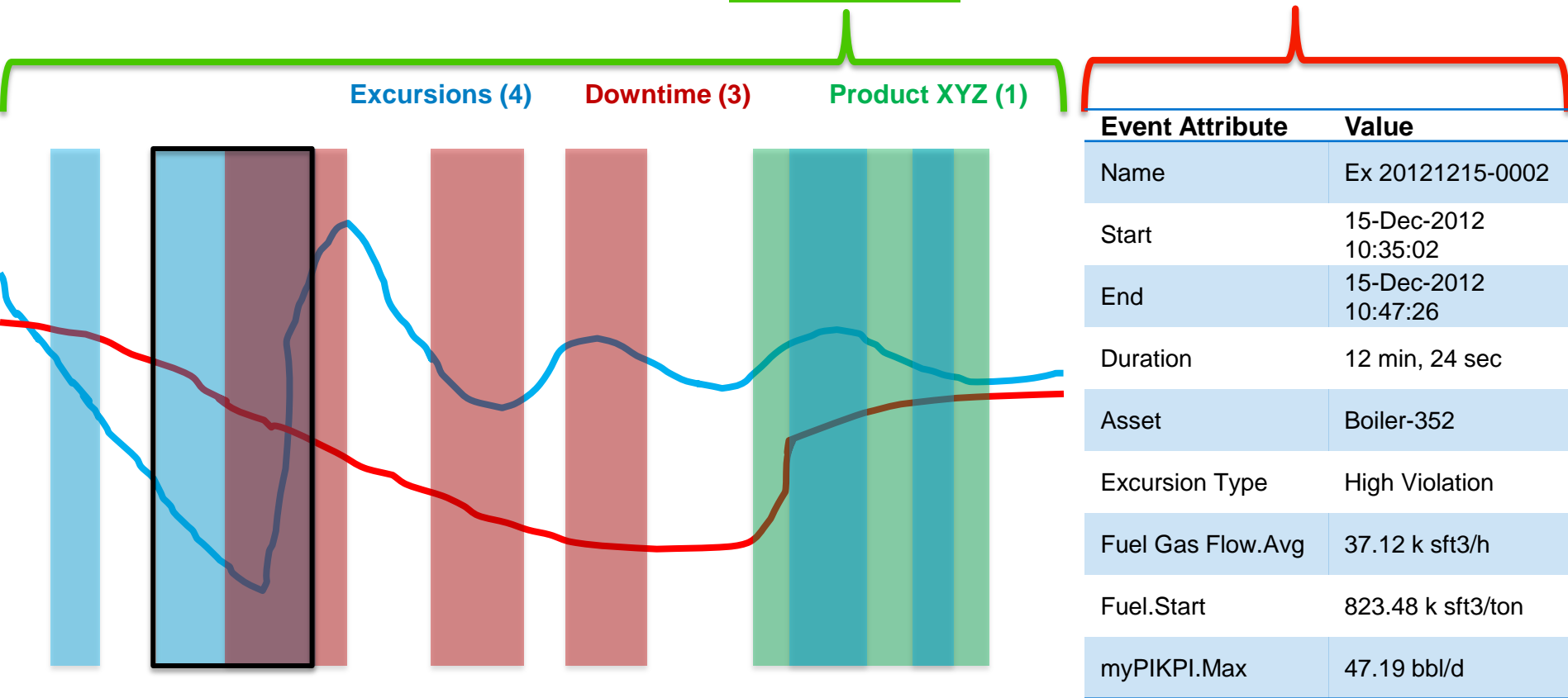
VS.

PI Event Frames

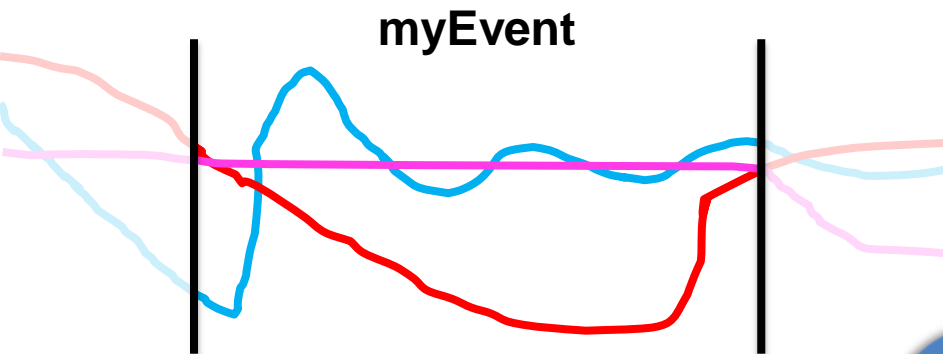
- Search the PI System for **Downtime** events on **M354** for *-7d.
- Get results immediately with the relevant related data already built into the downtime events.
- Start performing analysis ***in seconds and start addressing issues across multiple motors proactively.***



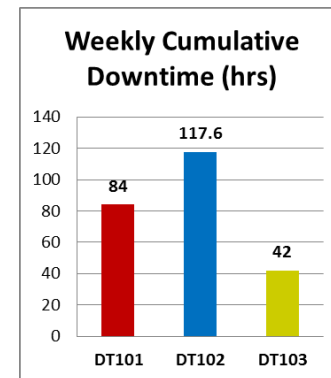
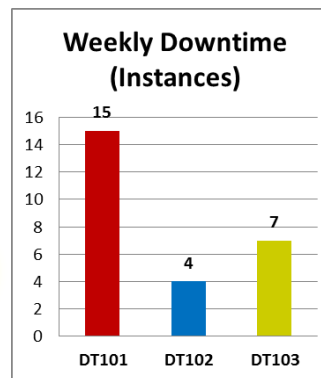
PI Event Frames = Events + *Related Data*



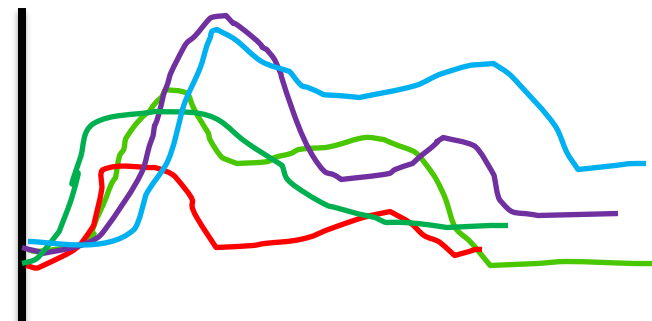
Simplify Data Analysis



Perform Asset Comparisons



Event Overlay Trend (Temp)

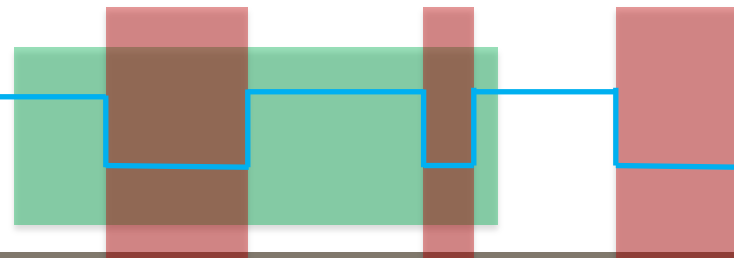


Name	Temp.Max
EF1	122.47
EF2	109.34
EF3	112.73
EF4	98.61
EF5	125.24

Excursion Events for Product XYZ

Product XYZ (1)

Excursion (2)



Perform Event Comparisons

Discover Event Interrelationships



Lalit

Process Engineer

- Easier to find & analyze events in my process.
- I can solve problems faster.



Aaron

Maintenance Engineer

- Find and analyze downtime events.
- Perform root cause analysis.



Stan

Operator

- Respond to changes on the production line faster.
- Make decisions to avoid mistakes.



Carl

Corporate Operations Manager

- People have the data they need to do their jobs.
- We spend our time analyzing the data instead of retrieving and manipulating the data.



Dale

Director, Information Management

- Turned process data into valuable information.
- Powered our reporting and BI initiatives.
- Standardized on the PI System.



Kevin

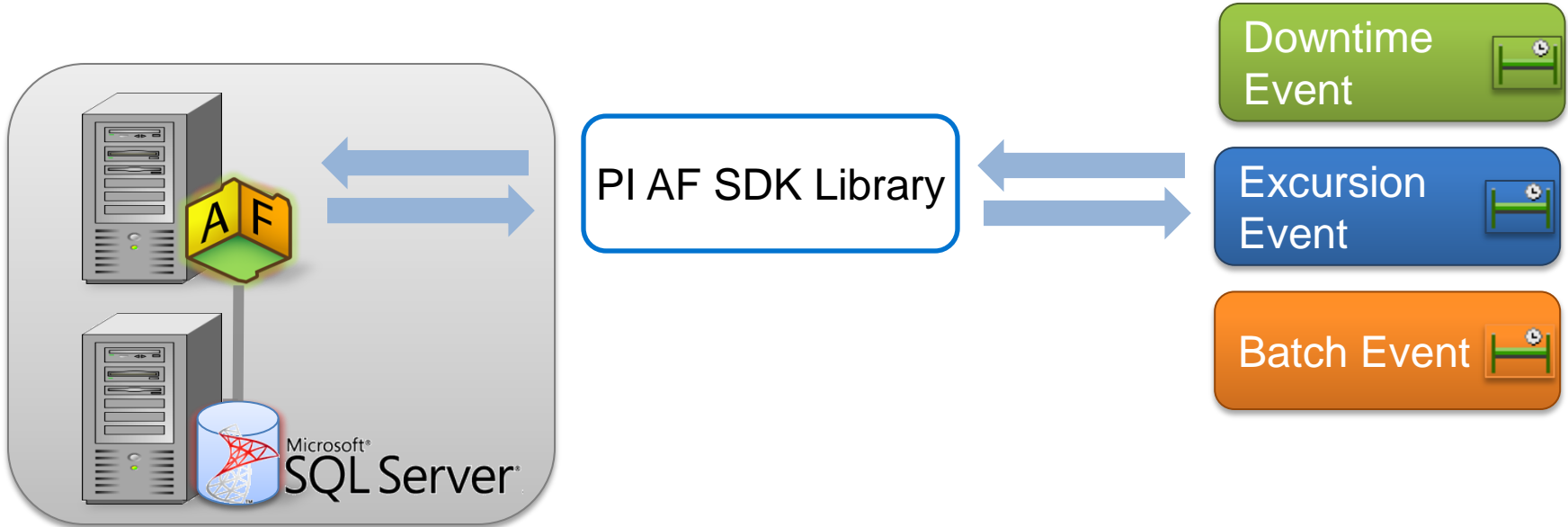
PI System Administrator

- PI Event Frames is part of the PI Server that I already manage.
- It's secure, and my users can find the information they're looking for easier.

PI Event Frames – Value Across Different Roles

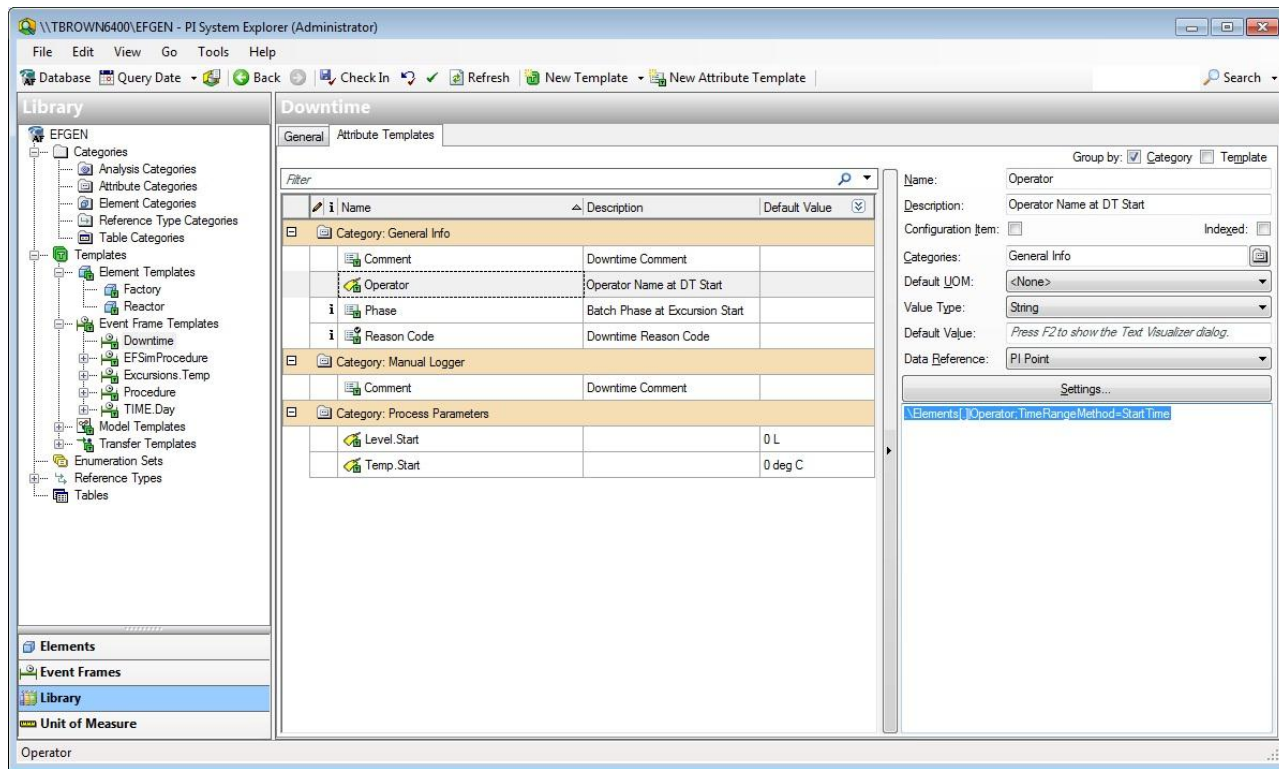


PI Event Frames is part of PI AF



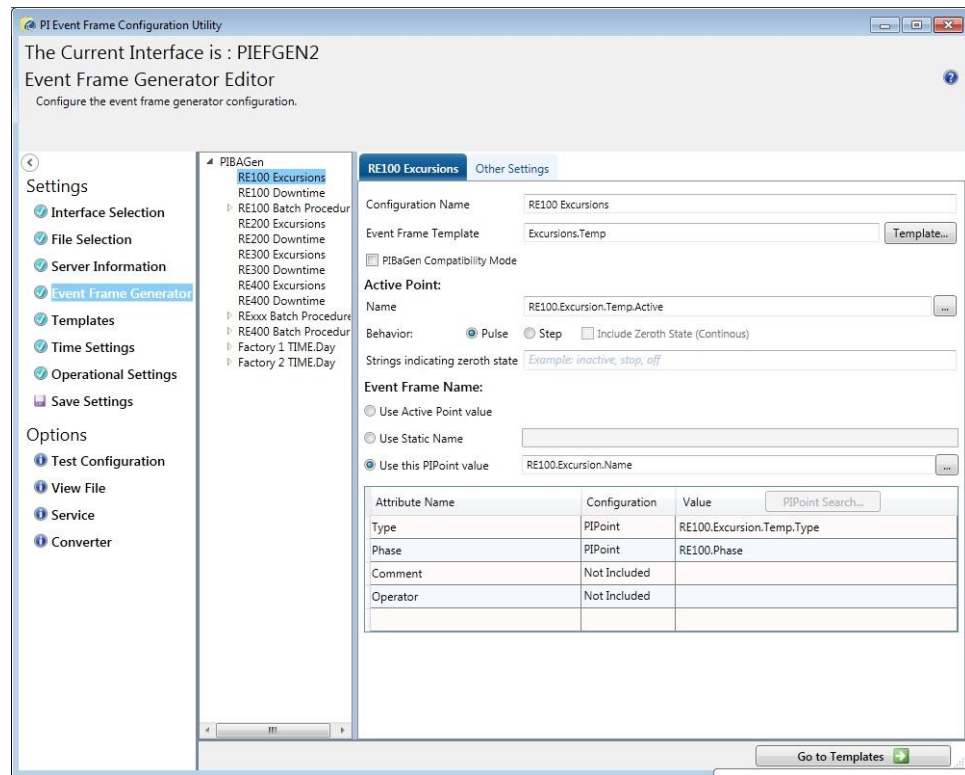
PI Event Frames Database (PI AF)

- Event Frame Templates
 - Attributes w/UOM
 - References to Assets
 - References to other Event Frames
 - Indexing
- Scalable
- High Availability Architectures



PI Event Frames Generator (PIEFGen)

- Generate events from trigger tags.
- Generate multiple event types on the same asset.
- Populate Event Attributes.
- Generate Complex Hierarchical Events like Batch.
- History Recovery. Failover.
- Flexible Deployment.
- Easy migration from PI Batch Generator.



PI Event Frames Generator (PIEFGen)

Generic Downtime Events

EFs Last 1d

Group by: ☐ Category

Filter

<input checked="" type="checkbox"/>	Name	Start Time	End Time	Primary Element	I Reason Code	I Operator	I Phase	I Level Start	I Temp Start	I Comment
<input checked="" type="checkbox"/>	Template: Downtime									
<input checked="" type="checkbox"/>	DT20120718 15:00	7/18/2012 3:00:00 PM	7/18/2012 4:00:00 PM	RE100	ESTOP	Jackson Davis	Agitate	56.497837066...	12.719055175...	
<input checked="" type="checkbox"/>	DT20120718 15:14	7/18/2012 3:14:00 PM	7/18/2012 3:18:00 PM	RE400	ESTOP	Don Wallace	XFER_OUT	55.377330780...	43.755249023...	
<input checked="" type="checkbox"/>	DT20120718 15:56	7/18/2012 3:56:00 PM	7/18/2012 4:00:00 PM	RE200	ESTOP	Vivian White	Heat	40.249420166...	56.025974273...	
<input checked="" type="checkbox"/>	DT20120718 16:14	7/18/2012 4:14:00 PM	7/18/2012 4:18:00 PM	RE400	LOOSE SCREW	Don Wallace	Dwell	73.417633056...	106.38076782...	
<input checked="" type="checkbox"/>	DT20120718 16:26	7/18/2012 4:26:00 PM	7/18/2012 4:29:00 PM	RE100	No Oil	Bobby Johnson	Material Add 1	2.6661367416...	1.4998737573...	
<input checked="" type="checkbox"/>	DT20120718 16:56	7/18/2012 4:56:00 PM	7/18/2012 5:00:00 PM	RE200	DRIVE FAILURE	Vivian White	Agitate	38.616783142...	19.232110977...	
<input checked="" type="checkbox"/>	DT20120718 17:14	7/18/2012 5:14:00 PM	7/18/2012 5:18:00 PM	RE400	No Oil	Don Wallace	Material Add	12.086598396...	21.871704101...	
<input checked="" type="checkbox"/>	DT20120718 17:26	7/18/2012 5:26:00 PM	7/18/2012 5:29:00 PM	RE100	UNKNOWN	Bobby Johnson	Dwell	63.604846954...	95.045753479...	
<input checked="" type="checkbox"/>	DT20120718 17:56	7/18/2012 5:56:00 PM	7/18/2012 6:00:00 PM	RE200	DRIVE FAILURE	Vivian White	Agitate	19.724298477...	14.333191871...	
<input checked="" type="checkbox"/>	DT20120718 18:14	7/18/2012 6:14:00 PM	7/18/2012 6:18:00 PM	RE400	UNKNOWN	Don Wallace	Inactive	0.0698556229...	0 deg C	
<input checked="" type="checkbox"/>	DT20120718 18:26	7/18/2012 6:26:00 PM	7/18/2012 6:29:00 PM	RE100	No Oil	Bobby Johnson	Material Add 1	8.870883563...	0 deg C	
<input checked="" type="checkbox"/>	DT20120718 18:56	7/18/2012 6:56:00 PM	7/18/2012 7:00:00 PM	RE200	DRIVE FAILURE	Vivian White	Inactive	0 L	0.0277301464...	
<input checked="" type="checkbox"/>	DT20120718 19:00	7/18/2012 7:00:00 PM	7/18/2012 8:00:00 PM	RE300	DRIVE FAILURE	Jason Rice	XFER_OUT	35.073238372...	5.8942260742...	
<input checked="" type="checkbox"/>	DT20120718 19:14	7/18/2012 7:14:00 PM	7/18/2012 7:18:00 PM	RE400	No Oil	Don Wallace	XFER_OUT	50.412509918...	37.525051116...	
<input checked="" type="checkbox"/>	DT20120718 19:26	7/18/2012 7:26:00 PM	7/18/2012 7:29:00 PM	RE100	TOO HOT	Bobby Johnson	Dwell	61.777004241...	88.264122009...	
<input checked="" type="checkbox"/>	DT20120718 19:56	7/18/2012 7:56:00 PM	7/18/2012 8:00:00 PM	RE200	DRIVE FAILURE	Vivian White	XFER_OUT	24.393812179...	4.7127685546...	
<input checked="" type="checkbox"/>	DT20120718 20:14	7/18/2012 8:14:00 PM	7/18/2012 8:18:00 PM	RE400	LOOSE SCREW	Don Wallace	Dwell	64.816856384...	93.705009460...	
<input checked="" type="checkbox"/>	DT20120718 20:26	7/18/2012 8:26:00 PM	7/18/2012 8:29:00 PM	RE100	No Oil	Bobby Johnson	Material Add 1	11.808090209...	6.5892400741...	
<input checked="" type="checkbox"/>	DT20120718 20:56	7/18/2012 8:56:00 PM	7/18/2012 9:00:00 PM	RE200	LOOSE SCREW	Vivian White	Dwell	44.167556762...	85.939369201...	
<input checked="" type="checkbox"/>	DT20120718 21:14	7/18/2012 9:14:00 PM	7/18/2012 9:18:00 PM	RE400	No Oil	Don Wallace	Agitate	18.466350555...	37.616405487...	
<input checked="" type="checkbox"/>	DT20120718 21:26	7/18/2012 9:26:00 PM	7/18/2012 9:29:00 PM	RE100	TOO HOT	Bobby Johnson	Dwell	64.816856384...	93.705009460...	

Event Information

Related Data

Event Information

Related Data



PI Event Frames Generator (PIEFGen)

Hierarchical Batch Events

	Name	Start Time	End Time	Primary Element	BatchID	Product	Recipe	Procedure	Operator	Agitation Avg	Concent...
[-]	20120720 7:24	7/20/2012 7:24:26 AM	7/20/2012 9:06:26 AM			Chem B	Recipe 123				
[-]	20120720 7	7/20/2012 7:42:26 AM	7/20/2012 8:18:26 AM			Chem D	Recipe 123				
[-]	20120720 8	7/20/2012 8:09:26 AM	7/20/2012 9:10:26 AM			Chem D	Recipe 123				
[-]	20120720 8:38	7/20/2012 8:38:26 AM	7/20/2012 9:39:26 AM			Chem D	Recipe 123				
[-]	20120720 9	7/20/2012 9:08:26 AM	7/20/2012 10:27:26 AM			Chem D	Recipe 123				
[-]	20120720 9:21	7/20/2012 9:21:26 AM	7/20/2012 11:03:26 AM			Chem B	Recipe 123				
[-]	20120720 9:21	7/20/2012 9:21:26 AM	7/20/2012 11:03:26 AM	RE100	20120720 9:21	Chem B		SHORT	Bobby Johnson	22.769119913...	76.741309
	Material Add 1	7/20/2012 9:22:56 AM	7/20/2012 9:32:56 AM						Bobby Johnson	0.8215681106...	99.927814
	Agitate	7/20/2012 9:32:56 AM	7/20/2012 9:39:56 AM						April Brown	129.54124711...	83.452825
	Material Add 2	7/20/2012 9:39:56 AM	7/20/2012 9:54:56 AM						April Brown	1.2142623901...	69.95621
	Agitate	7/20/2012 9:54:56 AM	7/20/2012 10:06:56 AM						Jon Harris	81.863731384...	71.727045
	Heat	7/20/2012 10:06:56 AM	7/20/2012 10:13:56 AM						Jackson Davis	9.958994549...	75.516961
	Dwell	7/20/2012 10:13:56 AM	7/20/2012 10:33:56 AM						David Jones	0 rpm	81.040980
	Agitate	7/20/2012 10:33:56 AM	7/20/2012 10:54:26 AM						David Jones	51.956185460...	78.232601
	Control	7/20/2012 10:54:26 AM	7/20/2012 11:03:26 AM						David Jones	4.9249104530...	73.446203
	XFER_OUT	7/20/2012 10:54:26 AM	7/20/2012 11:03:26 AM						Jon Harris	0 rpm	63.856351
[-]	20120720 9:57	7/20/2012 9:57:26 AM	7/20/2012 10:58:26 AM			Chem D	Recipe 123				
[-]	20120720 10	7/20/2012 10:33:26 AM	7/20/2012 11:34:26 AM			Chem D	Recipe 123				

Event Information

Related Data



PI Data Access 2012

PI Server 2012



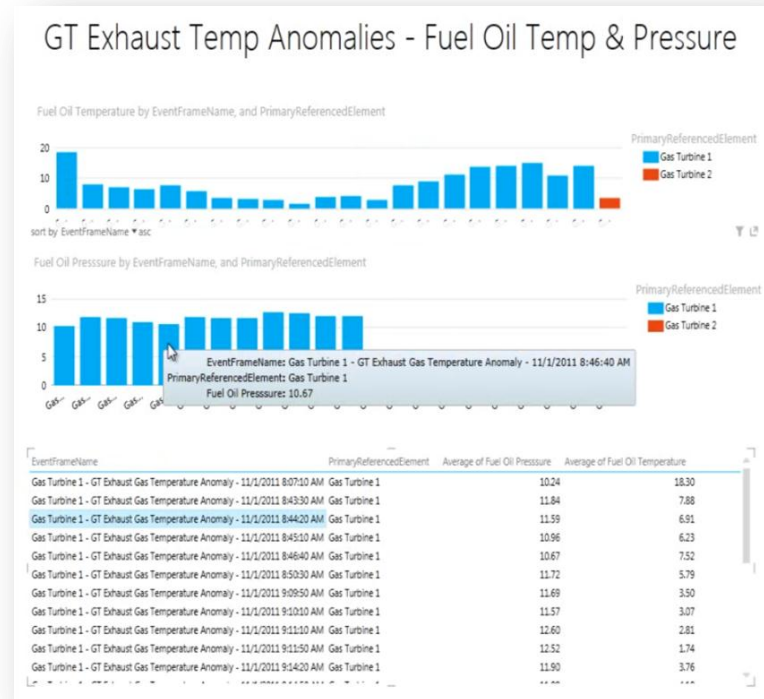
PI Data Access 2012

- PI OLEDB Enterprise
- PI JDBC
- PI Web Services
- PI AF SDK



PI Data Access 2012

PI OLEDB Enterprise + Power View



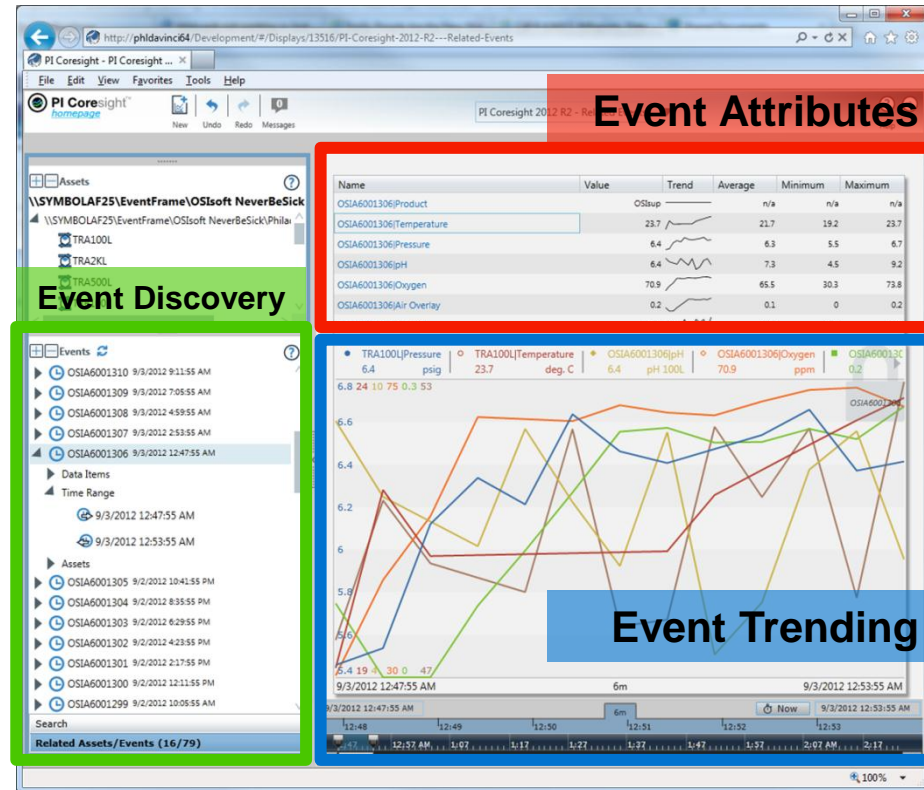
PI Web Services + WP7 App



PI Coresight 2012 R2 – Related Events

The 1st PI Client to support PI Event Frames.

- Event Discovery.
- Event Time Analysis.
- Event Attributes.
- Event Trending.
- Event Comparison.



DEMO



PI Event Frames Partners

RtTech
Software Inc.

RtDuet™
Real-time Downtime, Uptime & Event Tracking

- Downtime
- Operational Equipment Effectiveness (OEE)
- Event Tracking

RELEASED

<http://rttechsoftware.com>

mirabo

livepoint™

- Batch Analysis
- Batch Genealogy

RELEASED

<http://mirabosystems.com>

EXELE

PI Process Templates

- Batch repeatability & consistency
- Profiling of critical event attributes
- Real-time alarming of Event Trend Profiles

IN PROGRESS

<http://www.exele.com>

ProcessPlugins

ProcessPlugins

- Performance and condition monitoring solutions

IN PROGRESS

<http://processplugins.com/>

UMETRICS
AN MKS COMPANY

SBOL
BY UMETRICS

- Multivariate Batch Analysis
- Batch Statistical Process Control (SPC)

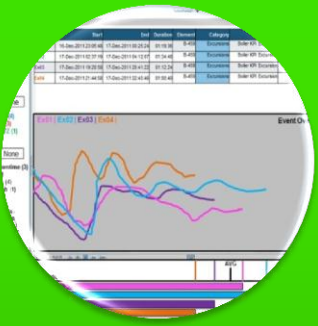
PLANNED FOR FUTURE

<http://www.umatrics.com>



Project Abacus

- AF-based generation of Events



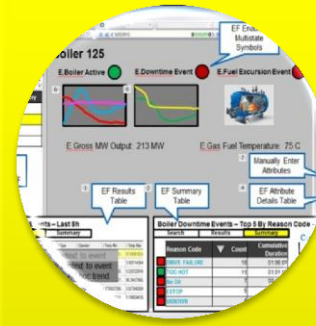
PI Coresight

- Search for Events
- Event driven data analysis including Overlay Trends



PI DataLink

- Event driven table based analysis & ad-hoc reporting



PI ProcessBook

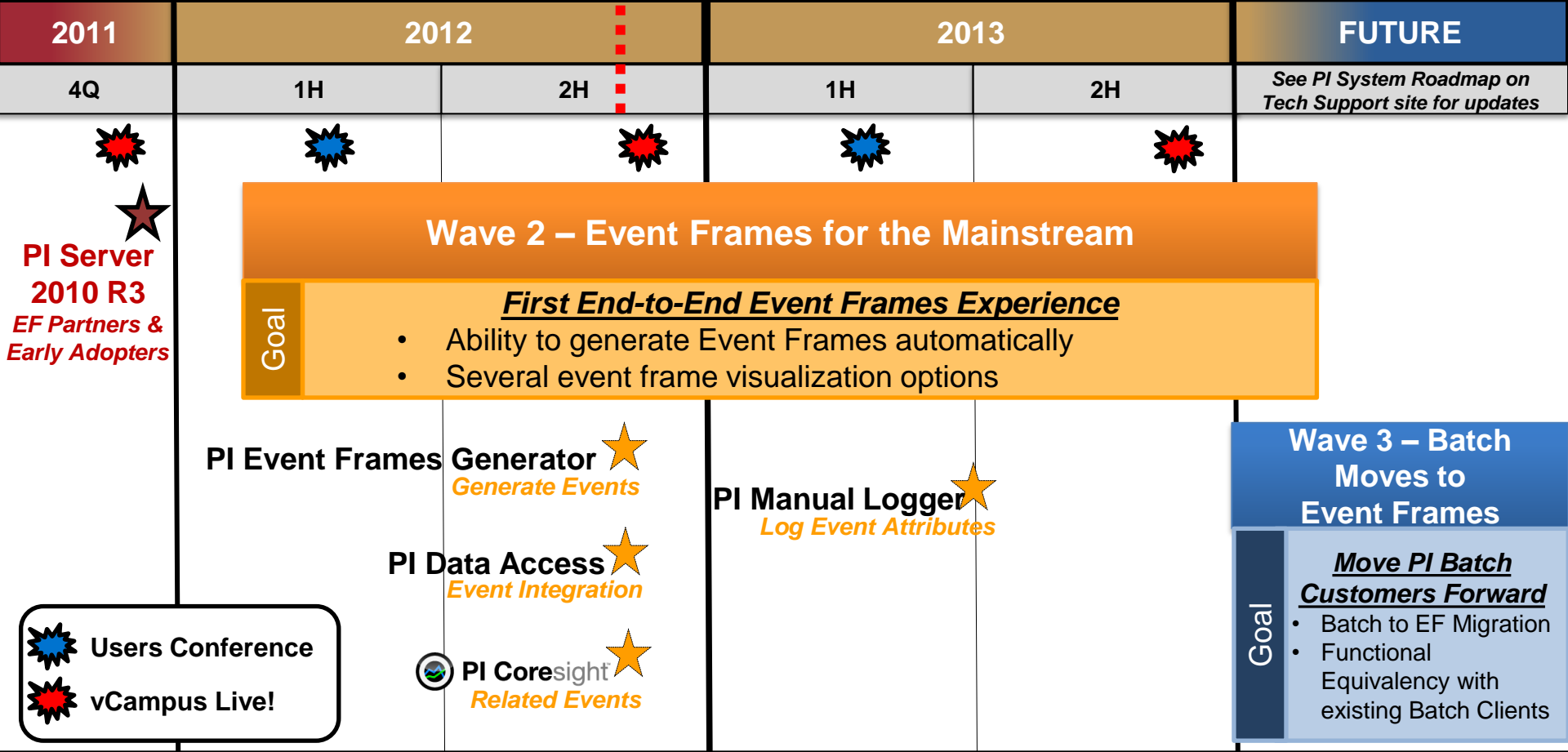
- Events integrated into process monitoring displays



PI Manual Logger

- Manual data entry to Event Attributes
- Manual Event Creation

PI Event Frames: Future Product Support



NOTE: Future dates are subject to change. Last Updated: 10-2012

PI Event Frames Licensing

PI Server package License

- Includes PI Event Frames Database (PI AF)
- Includes PI Event Frames Generator

PI System Access (PSA) License

- Includes PI Event Frames in PI Data Access

PI Client Licenses

- Includes PI Event Frames functionality

PI Interfaces for Batch Execution Systems / MES

- License required for specific PI Interfaces



PI Event Frames Benefits

Start making
decisions with a
full picture of
reality.

What is the PI System?

The industry standard in enterprise infrastructure for
management of real-time data and events.



Real-Time + Events =



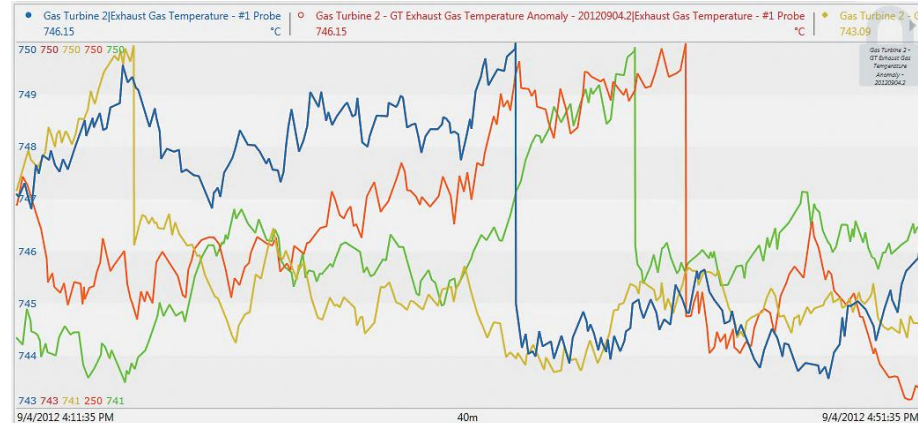
PI Event Frames Benefits

Start making decisions with a full picture of reality.

Make your real-time data even more valuable.

Name	Value	Trend	Units
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[Comment]	0		
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[Exhaust Gas Temperature - #1 Probe]	746.15		°C
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[Exhaust Gas Temperature - #2 Probe]	743.09		°C
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[Exhaust Gas Temperature - #3 Probe]	276.35		°C
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[Exhaust Gas Temperature - #4 Probe]	745.49		°C
Gas Turbine 2 - GT Exhaust Gas Temperature Anomaly - 20120904.2[ExpectedDuration]	0		

Analyze Data in Context of Events



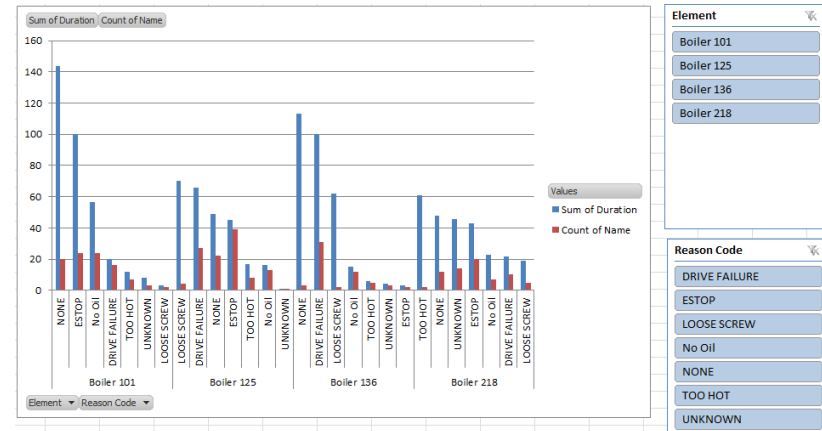
PI Event Frames Benefits

Start making decisions with a full picture of reality.

Make your real-time data even more valuable.

Make your asset data even more valuable.

**COMPARE ASSETS
BY EVENTS**



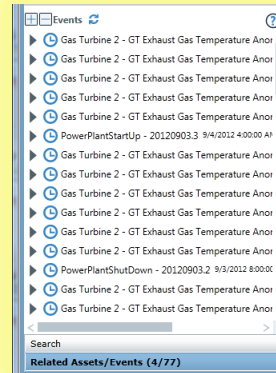
PI Event Frames Benefits

Start making decisions with a full picture of reality.

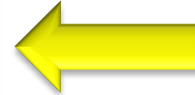
Make your real-time data even more valuable.

Make your asset data even more valuable.

Stop searching and start analyzing.



**Event
Discovery**



PI Event Frames Benefits

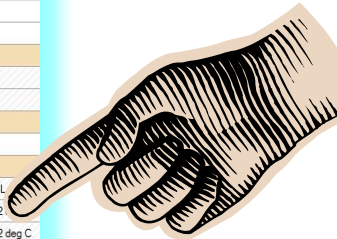
Start making decisions with a full picture of reality.

Make your real-time data even more valuable.

Make your asset data even more valuable.

Stop searching and start analyzing.

Discover that the related data you're looking for is already at your fingertips.



Name	Value
Category: General Info	
Comment	
Operator	April Brown
Phase	Dwell
Type	HIGH TEMP
Category: Limits	
Temp.Limit.High	90 deg C
Temp.Limit.Low	3 deg C
Category: Manual Logger	
Comment	
Category: Process Parameters	
Level.Start	59.058723449707 L
Temp.End	87.0392227172852
Temp.Max	95.6705703735352 deg C
Temp.Min	87.0392208099365 deg C
Temp.Range	8.63134956359863 deg C
Temp.Start	93.3118438720703 deg C



PI Event Frames Benefits

Start making decisions with a full picture of reality.

Make your real-time data even more valuable.

Make your asset data even more valuable.

Stop searching and start analyzing.

Discover that the related data you're looking for is already at your fingertips.

Find the needle in the haystack.



PI Event Frames Releases



PI Event Frames Generator



PI Coresight 2012 R2



PI Data Access 2012

Get *Your Hands-On PI Event Frames* at



vCampus Live! 2012

WHERE PI GEEKS MEET



REGISTER NOW > November 28 - 30 | Grand Hyatt San Francisco

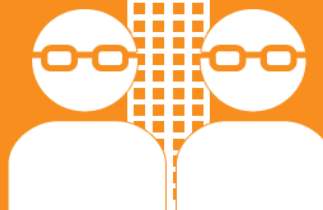
Nov 28 – 30: Grand Hyatt San Francisco

ONE
GEEK



General Registration

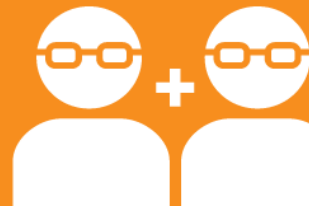
ONE
GEEK



Buy 1 Get 1 Free with hotel*

HOTEL

ONE
GEEK



Buy 1 Get 1 Free without hotel*

FREE
GEEK

PI Event Frames Generator and PI Coresight

Presenters: Todd Brown, Steve Pilon and Chris Nelson

Type: Hands-on

Category: PI Professional

Skill Level: 200

Length: 1:30

In this hands on track, you will learn how to configure Event Frame Templates and automatically generate events via configuration using the PI Event Frames Generator. You will associate these events with the equipment on which they occurred and store reason codes and other relevant data with the events. After your events are created, you will use the new PI Coresight Related Events functionality to automatically discover your events, and view your event data within trends and tables in PI Coresight. This course requires no programming or development skills.

PI Event Frames Meets PI System Data Access

Presenters: Steve Pilon, Todd Brown, Brandon Perry and Chris Nelson

Type: Hands-on

Category: Developer

Skill Level: 200

Length: 1:30

In this hands on track, you will learn how PI Data Access 2012 can be used to retrieve Event Frame data in custom applications and systems integration scenarios. With PI Data Access 2012, this is possible in web services, SQL, or object-oriented applications. For our hands-on activity, we'll use PI OLEDB Enterprise to drive various analyses in tools like Microsoft PowerPivot.

* Offer ends 10/26/12 and both registrations must be completed at same time to qualify.



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PI Event Frames Releases



PI Event Frames Generator



PI Coresight 2012 R2



PI Data Access 2012

OSIsoft Users Community LIVE CHAT now:

PI Event Frames Ask Me Anything:

<http://community.osisoft.com/index.php?/topic/1089->

The screenshot shows a forum post titled "Ask Me Anything about PI Event Frames right after the 18 OCT 12 Webinar". The post was started by user "myDorazio" on October 12, 2012, at 01:34 PM. The forum is part of the "OSIsoft Users Community (beta)" and is categorized under "Forums" > "General".

The post content includes a profile picture of "myDorazio" (Grand Teacher, 173 posts, 35 upvotes, Platinum level) and the following text:

Posted 12 October 2012 - 01:34 PM

What better time to host an Ask Me Anything (AMA) session than right after [Thursday's webinar](#) on PI Event Frames? Chris Nelson, who is the development lead, and Todd Brown, who is the product manager, will be here answering questions immediately following their 18 OCT 12 at 7 a.m. PDT (10 a.m. EDT) webinar ([click here](#) to see when that is in your time zone).

So if you have questions that you think are either too obscure or too site-specific to ask during the webinar itself, come to this thread and ask those questions starting at 8:00 a.m. on Thursday, 18 OCT 12.

Instructions

To read only:

1. You do not need to register or log in. Simply come to this same page (the one you are reading now) at the time listed above and the presenters will start to answer the questions that queue up in the thread below.
2. When you see three circles fade in and out at the top of the screen, that means a new reply has been added to this thread. Press F5 to refresh your screen to check for new questions and answers.



Thank you

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