

# PI Vision 2017



**Rajesh Gomatam Ph.D.**  
**8-Nov-17**

# Our Commitment to YOUR Needs

You told us...

**Where** Control center, Desktop, Mobile

**When** Real-time: Past, Present, Future

**How** Operational Intelligence  
Advanced Analytics  
Business Intelligence  
Enterprise Reporting

## Requirements

### SEAMLESS

Unified experience

### UBIQUITOUS

Empowering for all users

### ON – DEMAND

Intuitive, self-service, off the shelf



# PI Vision

We are embarking on a **unified visualization infrastructure** to deliver a seamless, powerful, extensible experience.

Create  
Beautiful  
Information  
Displays &  
Dashboards

Monitor and  
Optimize  
Complex  
Processes

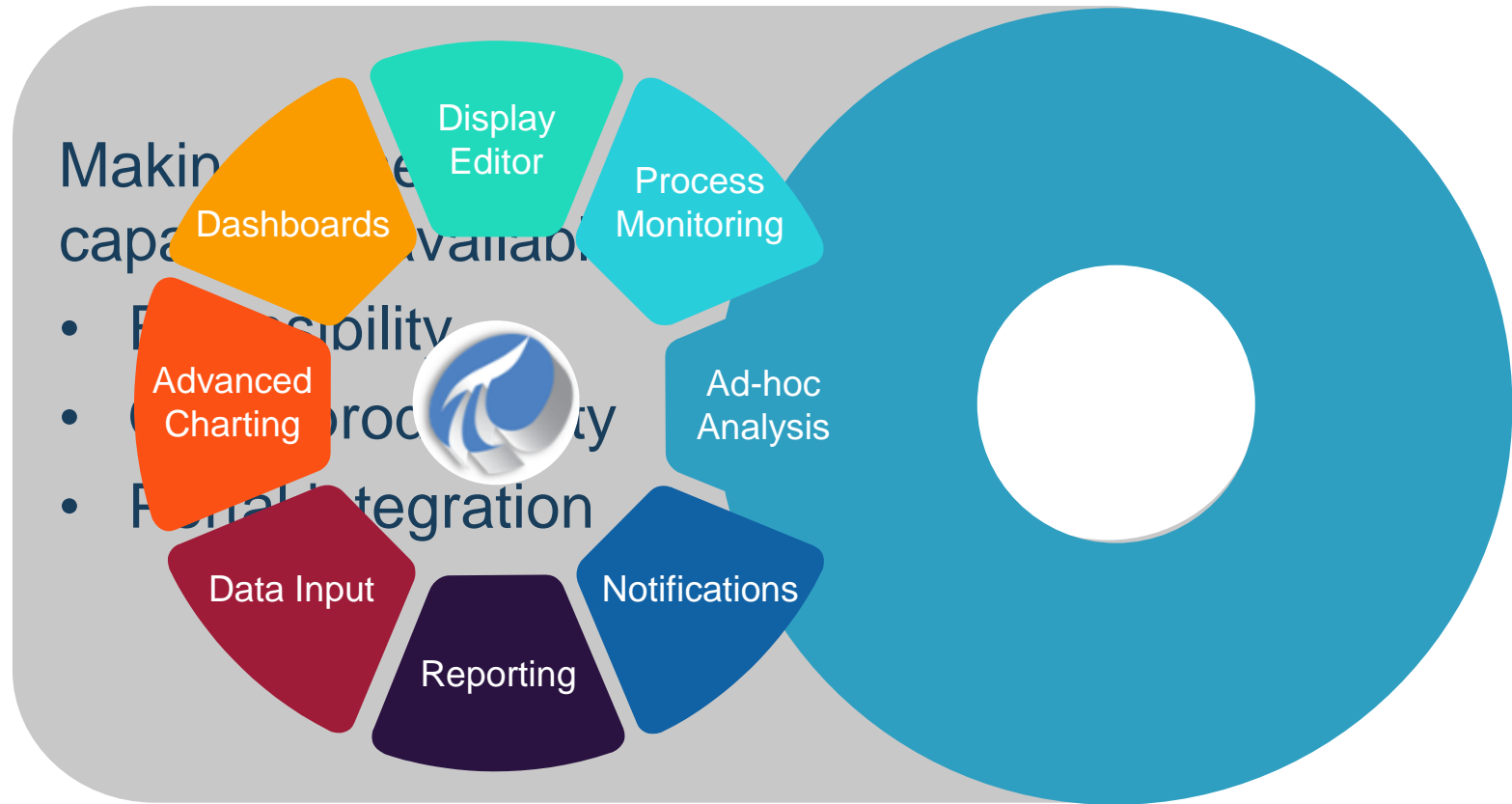
Analyze and  
Compare  
Important  
Events

Input Critical  
Data in  
Context

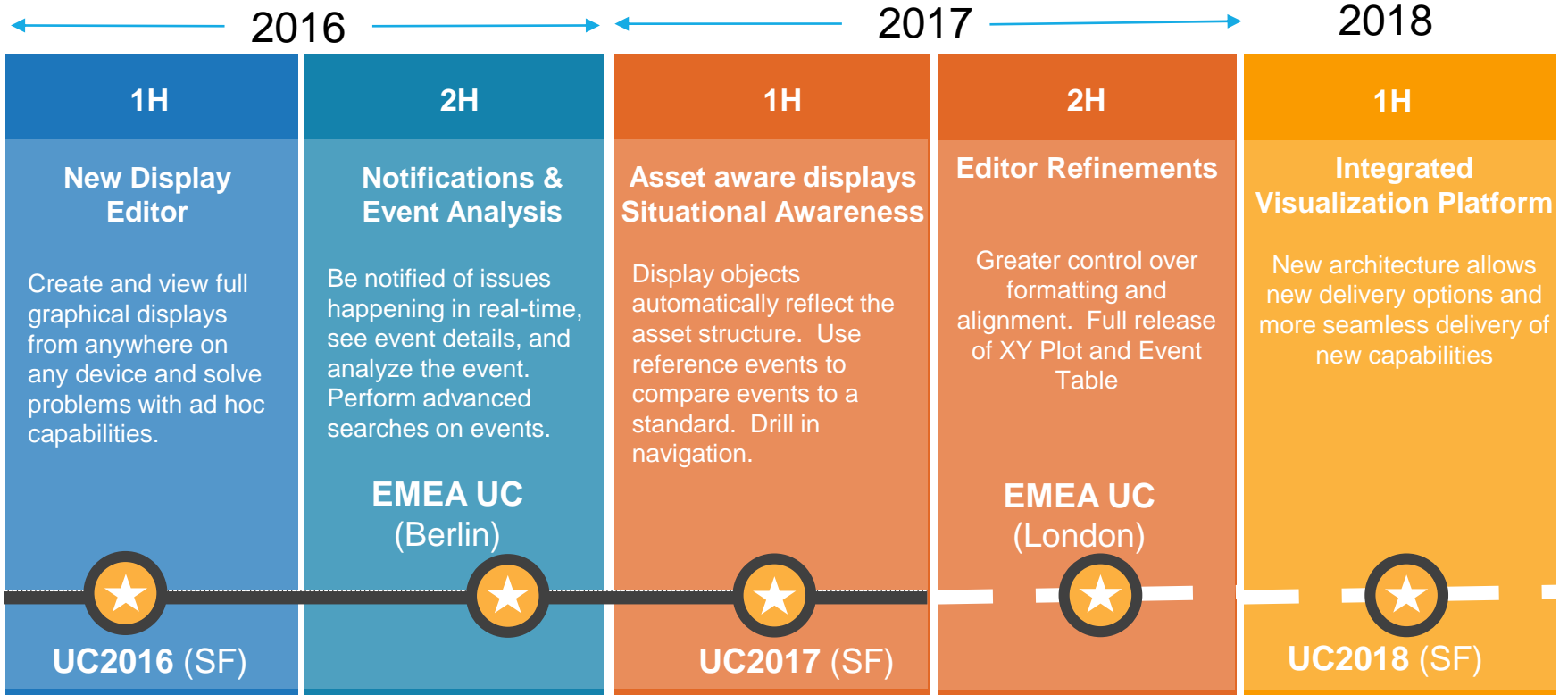
Your window into operational intelligence



# Unified Visualization Infrastructure: Core Capabilities



# OSIsoft's Visualization Roadmap



# OSIsoft's Visualization Execution Strategy: Focus & Goals

## Modern architecture

Leverage the latest technology to stay relevant



## Value-add features

Enable customers to solve new problems and derive more value



## Process Graphics

Provide PI ProcessBook customers a path forward



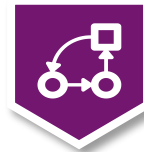
## Partner enablement

Actively support partners to develop solutions on our platform



## Extensibility

Enable the community-at-large to build customizations & extensions



## Superior data access

Ensure PI Web API is focused to meet the service layer needs





PI Vision 2017

Unified  
Visualization  
Infrastructure



# Major Changes Are Underway

2016

- ✓ HTML 5: View on any phone/tablet
- ✓ **New Display Editor**
- ✓ **PI ProcessBook Viewer**
- ✓ **Event Comparison (Gantt chart + overlay trend)**

2016 R2

- ✓ **Event Search**
- ✓ **Trend Configuration**
- ✓ Event Comparison Displays
- ✓ **Event Details and Acknowledgement**

2017

- ✓ Collections
- ✓ Graphics Library
- ✓ Pinned Events
- ✓ Drill-in Navigation



New Display Editor



PI ProcessBook Viewer



Overlays & Gantt charts





# Major Changes Are Underway

2016

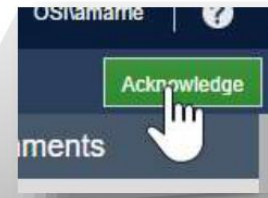
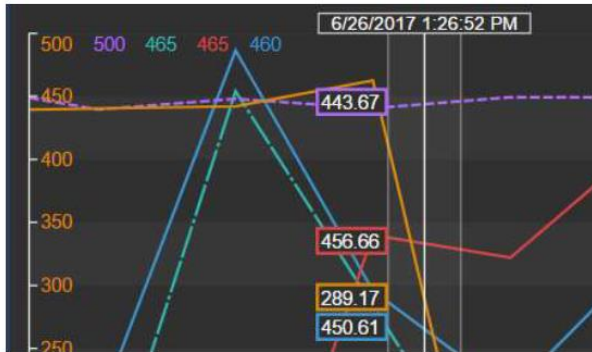
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2016 R2

- ✓ **Trend Configuration**
- ✓ **Event Search**
- ✓ Event Comparison Displays
- ✓ **Event Details and Acknowledgement**

2017

- ✓ Collections
- ✓ Graphics Library
- ✓ Pinned Events
- ✓ Drill-in Navigation



# PI Vision 2017

## Drill-in Navigation

Mine Truck Landing Page

Mine\_Truck\_1 Mine\_Truck\_2 Mine\_Truck\_3 Mine\_Truck\_4  
 Mine\_Truck\_5 Mine\_Truck\_6

Mine\_Truck\_2 Overview

Brake Display Frame Display Frame Roll Analysis

Manufacturer	Type	Driver	Status	Ground Speed	Load
Volvo	V940	Tommy TooFast	Running	0 mph	0 ton
Route B			Running		

## Collections

Model PizzaStar  
Speed  
2/6/2017 4:18:48 AM

Model PizzaStar  
Speed  
2/6/2017 12:18:40 PM

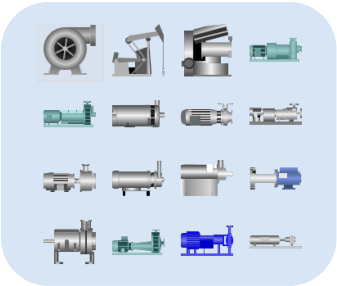
Model Jcar SuperVan  
Speed  
2/6/2017 4:18:48 AM

Model Jcar SuperVan  
Speed  
2/6/2017 12:18:40 PM

Model StoreRunner  
Speed  
2/6/2017 4:18:48 AM

Model StoreRunner  
Speed  
2/6/2017 12:18:40 PM

## Graphic Library



## Pinned Events

Search Results

- OSIssoft\_201581181621 (CLEANING) 8/11/2015 4:16:21 AM - 8/11/2015 6:46:49 AM
- OSIssoft\_2015810231135 (CLEANING)
- OSIssoft\_201581202655 (CLEANING)
- OSIssoft\_2015810232451 (CLEANING)
- OSIssoft\_20158519028 (CLEANING)
- OSIssoft\_201585185135 (CLEANING)
- OSIssoft\_2015853150 (CLEANING)
- OSIssoft\_201584104839 (CLEANING)
- OSIssoft\_201584103941 (CLEANING)

## Events Table

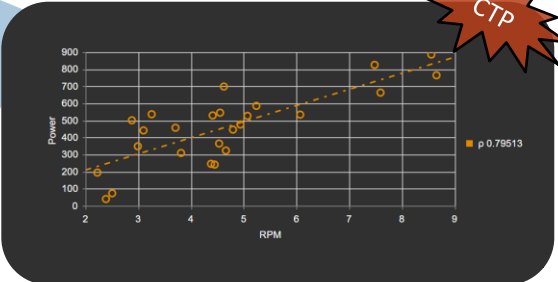
CTP

Start Time	End Time	Acknowledgment
2017-01-26 08:21:43.000	2017-01-26 07:14:43.000	Acknowledge
2017-01-26 07:23:43.000	2017-01-26 07:34:13.000	Acknowledged
2017-01-26 08:25:13.000	2017-01-26 08:25:13.000	Acknowledged
2017-01-26 08:29:13.000	2017-01-26 8:57:13 AM	Acknowledge

## Asset Comparison Table

Asset	Manufacturer	Driver	Engine RPM	Load	Status
Mine Truck 1	Caterpillar	Jason Rice	0	0	Running
Mine Truck 2	Volvo	Tommy TooFast	0	0	Running
Mine Truck 3	Komatsu	Edna Thompson	1,682.6	159.87	Running
Mine Truck 4	Caterpillar	Revill Swivel	0	0	Running
Mine Truck 5	Volvo	John Sintias	0	0	Running
Mine Truck 6	Komatsu	Steve Kwan	1,744.9	194.14	Running
Mine Truck 7	Volvo	Brian Bostwick	0	0	Running
Mine Truck 8	Caterpillar	Steve Kia	0	0	Running
Mine Truck 9	Caterpillar	Justin Brown	0	0	Running
Mine Truck 10	Volvo	Bob Bonkers	1,719.7	157.74	Running

## XY Plot





# PI Vision Demonstration



# PI Vision Demonstration Part I



- Graphically rich dashboards via the new display editor
- Drill-down navigation links
- Future data charting
- Using symbol collections
- Viewing Event Frame table symbols



Search All Displays

Filter by Keywords

- All Displays
- Favorites
- My Displays
- Recent
- PI ProcessBook Displays >

### All Displays (873)



**Wind Farm Overview**

OSI\pagemorin



**OSIsoft PowerGen Home**

OSI\pagemorin



**Wind Turbine Details**

OSI\pagemorin



**PC - ProductInletValve**

OSI\TINA Administrator



**Issaquah Process**

OSI\TINA Administrator



**Mixer Information**

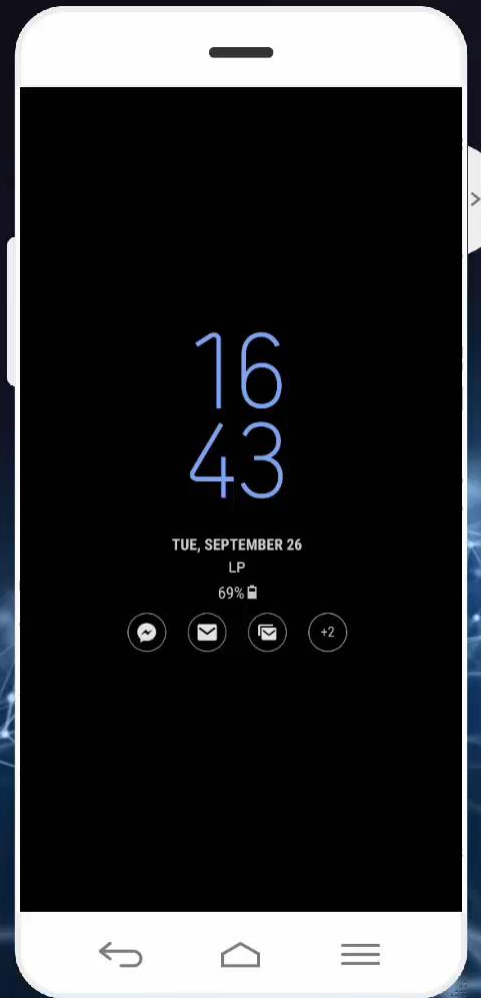
OSI\TINA Administrator

# PI Vision Demonstration Part II



- Notifications and data input via a mobile device
- Ad-hoc analysis from a mobile device
- Uploading photos
- Synchronized desktop and mobile dashboards
- Event Frame reporting: overlays, comparisons, and pinned events





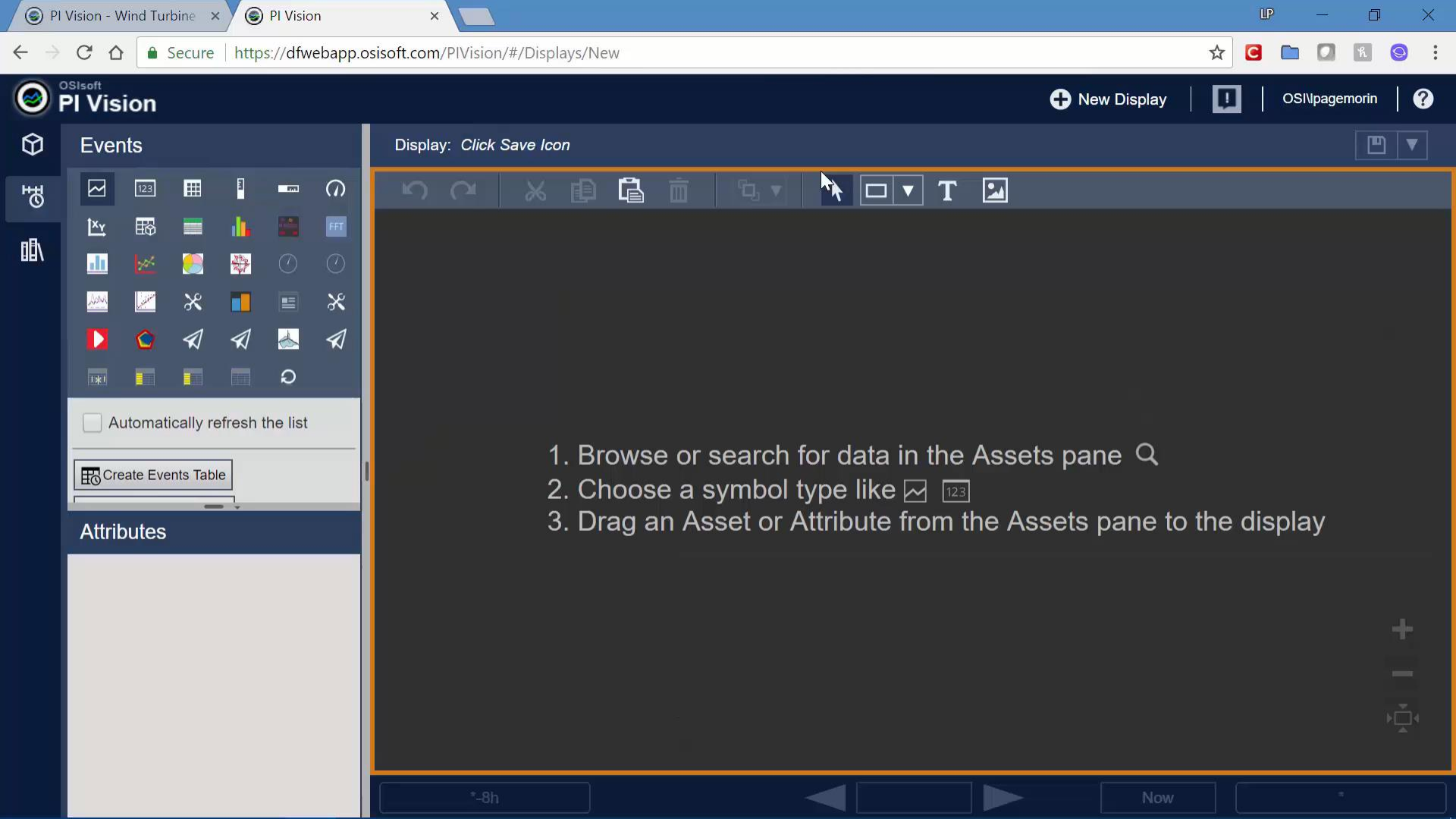
# PI Vision Demonstration Part III



- Creating displays from scratch using the new display editor
- Comparing multiple assets using symbol collections
- Using the new graphic library
- Customizing dashboards by editing collection criteria







Display: *Click Save Icon*

### Events

Automatically refresh the list

Create Events Table

### Attributes

1. Browse or search for data in the Assets pane 🔍
2. Choose a symbol type like
3. Drag an Asset or Attribute from the Assets pane to the display

-8h

Now

+

# PI Vision Demonstration Part IV



- Comparing attributes across multiple assets via asset comparison tables
- Configuring navigation links
- Customizing asset comparison table search criteria using limits
- Creating and configuring an events table symbol from scratch



Assets

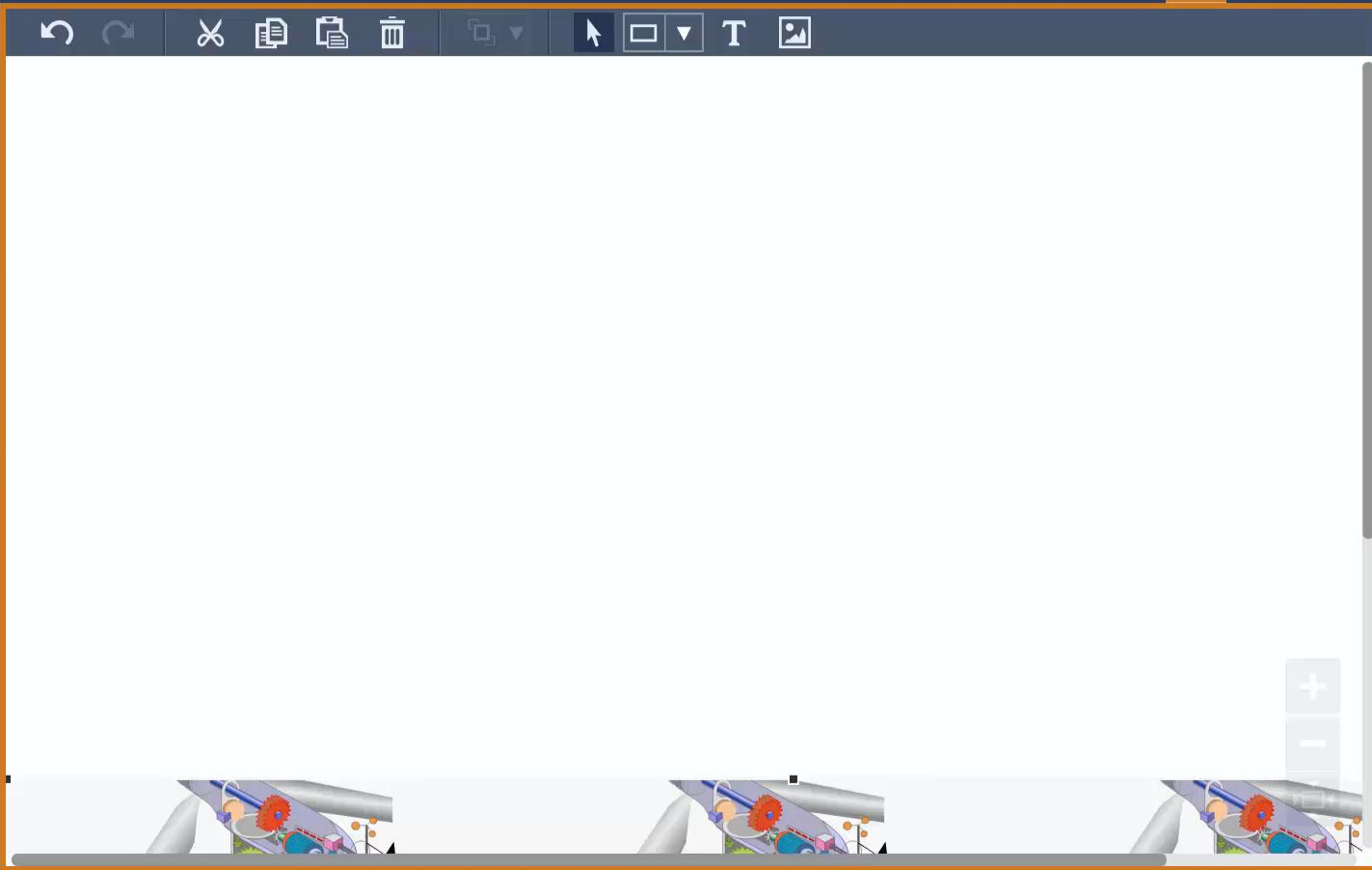


Attributes

- [-] Circuit Breaker Cut-ins
- [+] Current L1
- [+] Current L2
- [+] Current L3
- [+] Expected Power
- [+] Generator 1 Temperature >
- [+] Generator 1 Temperature Av...
- [+] Generator 2 Temperature >
- [+] Generator 2 Temperature Av...
- [+] Generator Cooling Air Tempe...
- [+] Generator Speed (CCU)
- [+] Generator Speed (PLC)
- [+] Generator Speed, Set Value 1
- [+] Generator Speed, Set Value 2
- [+] L1-N Voltage
- [+] L2-N Voltage
- [+] L3-N Voltage

Display: *Click Save Icon\**

Ad Hoc Display



9/26/2017 8:57:41 AM

8h

Now

9/26/2017 4:57:41 PM



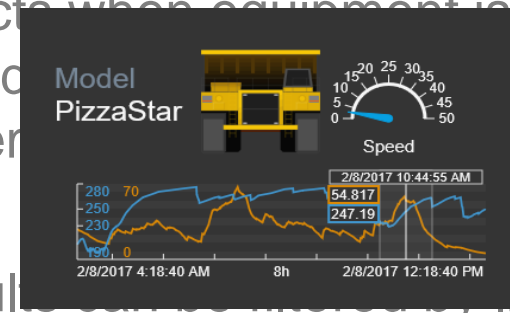
# Demonstration Review

# Collections: Spend Less Time Updating Displays



Group one or more symbols as a “collection” then add a context filter so the display reflects the assets you are interested in.

- The collection automatically reflects when equipment is added to the system



- Results are automatically updated with data values

# Asset and Events Table Symbols



Asset Table: easily view and compare asset performance in a table format.

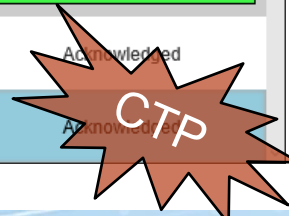
- Add dynamic search criteria to have the assets on the table update automatically

Asset	CIP Acid Tank Level	CIP Caustic Tank Level	CIP Supply Tank Level	recirculation EPWash State
CIP_123_SKID	31.82	63.221	0	non recirc
CIP_124_SKID	88.382	36.977	0.013409	non recirc
CIP_422_SKID	39.44	22.573	-0.0062218	non recirc
CIP_432_SKID	No Data	No Data	-0.0081825	non recirc

Event Table: always see the most important and relevant events.

- Use search criteria to show events based on asset type, severity, hierarchy, and more.

Event Name	Asset	Start Time	End Time	Acknowledgement
Engine Temperature High 2017-01-07 03:56:21.000	Sp6	1/7/2017 3:56:21 AM	In Progress	<a href="#">Acknowledge</a>
Engine Temperature High 2017-01-07 10:45:51.000	Sp5	1/7/2017 10:45:51 AM	In Progress	<a href="#">Acknowledge</a>
Gas Tank Level Low 2017- 03-09 06:49:13.000	Sp4	3/9/2017 6:49:13 AM	3/9/2017 9:24:13 AM	<a href="#">Acknowledge</a>
Gas Tank Level Low 2017- 03-09 06:49:13.000	Sp4	3/9/2017 6:49:13 AM	3/9/2017 9:24:13 AM	<a href="#">Acknowledge</a>



# Asset Table: View and Compare Assets



Asset	Manufacturer	Driver	Engine RPM	Load	Status
Mine Truck 6	Komatsu	Steve Kwan	1,744.9	194.14	Running
Mine Truck 7	Volvo	Erian Busnick	0	0	Running
Mine Truck 8	Caterpillar	Steve Kia	0	0	Running
Mine Truck 9	Caterpillar	Justin Brown	0	0	Running
Mine Truck 10	Volvo	Bob Bonkers	1,719.7	157.74	Running

Add search and filter options to make the content of the table dynamic

Asset Type  
Mining\_Mine Truck

Asset Attribute  
Status = Running  
Load > 100

Now the table shows only the mine trucks that are running and have a load of a certain weight

# New PI Vision User Types



- **Publisher**
  - Targeted for content creators who need the ability to create and save new dashboards and analysis views.
    - The Publisher user type is equivalent to the traditional PI Coresight user that has existed in all previous versions of the product.
- **Explorer**
  - The Explorer user type can not save any new displays or changes to existing displays.
    - An Explorer can use the full power of existing displays to switch context, adjust time and investigate events. Explorers can even create ad-hoc displays but they do not have the ability to save any of this work.

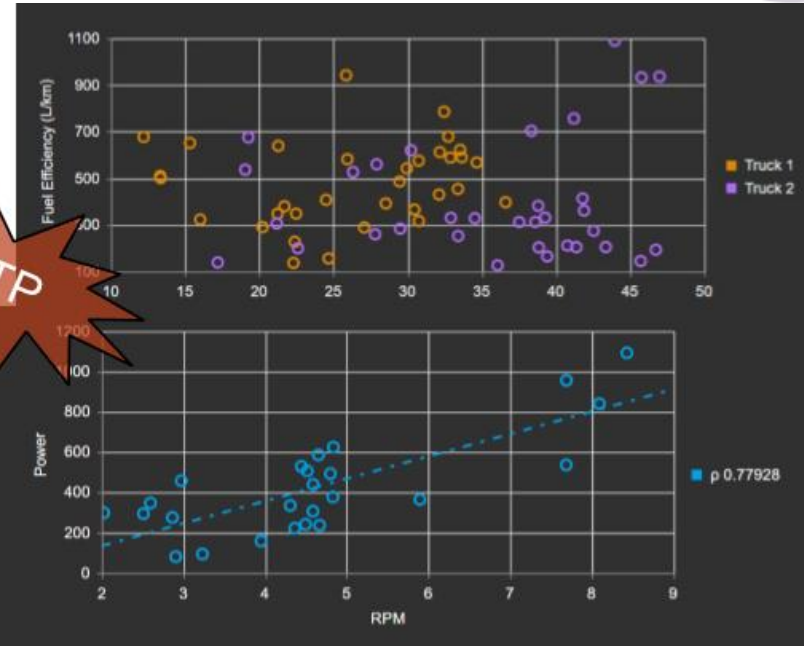
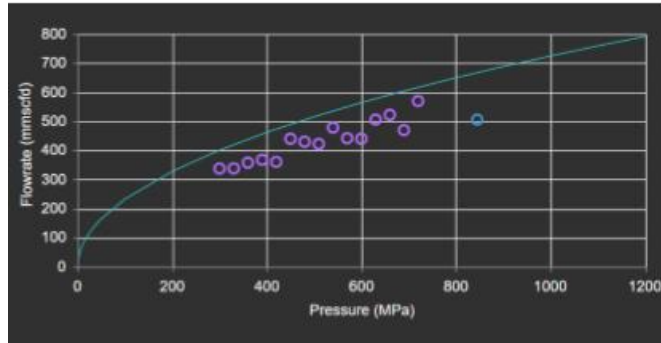
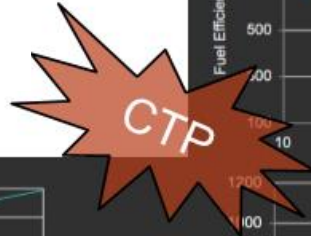




# XY Plot: Correlated Data



- Identify correlations between attributes
- Compare multiple assets
- Compare multiple time ranges



# Pinned Events



- Identify batch process deviations by comparing to a reference
  - “Pin” one or more events, to be used as a reference
  - Pinned events are saved with the display

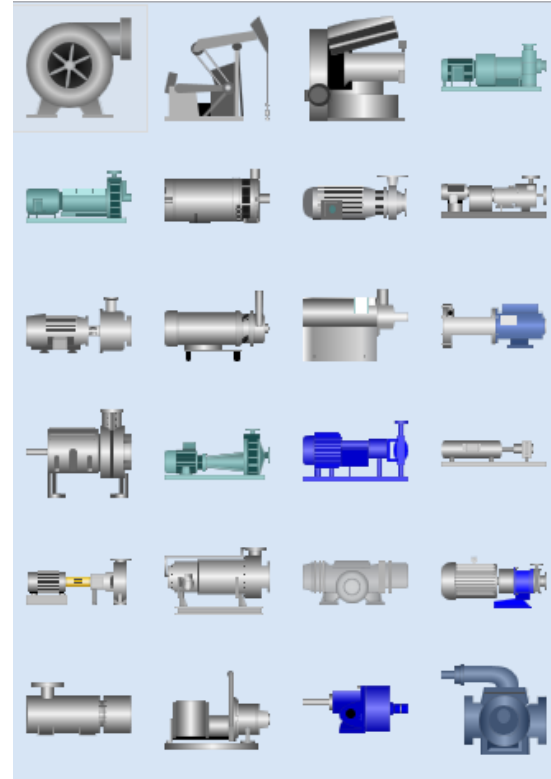
The screenshot shows the 'Events' interface with a list of events. A context menu is open over the event 'OSIsoft\_201581202655 (CLEANING)'. The menu options are: Hide Event, Event Details, Compare Similar Events by Name, Compare Similar Events by Type, and Pin Event. The 'Pin Event' option is highlighted. The interface also includes a search bar, a search results section, and an 'Edit Search Criteria' link at the bottom right.

Event ID	Event Name	Timestamp	Action
OSIsoft_201581181621	(CLEANING)	8/11/2015 4:16:21 AM - 8/11/2015 6:46:49 AM	>
OSIsoft_201585185135	(CLEANING)		>
OSIsoft_201581202655	(CLEANING)	8/11/2015 8:26:55 AM	>
OSIsoft_201581202655	(CLEANING)		>
OSIsoft_201581202655	(CLEANING)		>
OSIsoft_201581202655	(CLEANING)		>
OSIsoft_201581202655	(CLEANING)		>
OSIsoft_201584104839	(CLEANING)		>
OSIsoft_201584103941	(CLEANING)		>



# Graphics Library

- Use an extensive library of graphic symbols to enhance a display



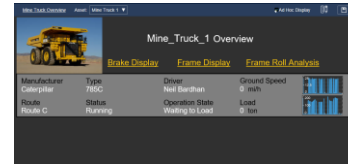
# Drill-in Navigation

- Configure a URL link on any symbol
  - Link to another display or another website.
  - When connecting to another display, the context (time and/or selected asset) can be passed as part of the link

Overview display



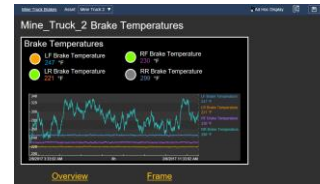
Truck1



Truck2



Truck2 Brakes



Truck2 Frame

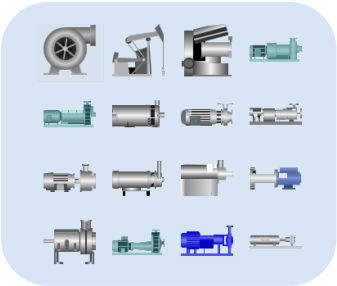


# PI Vision 2017

## Drill-in Navigation

## Collections

## Graphic Library



## Pinned Events

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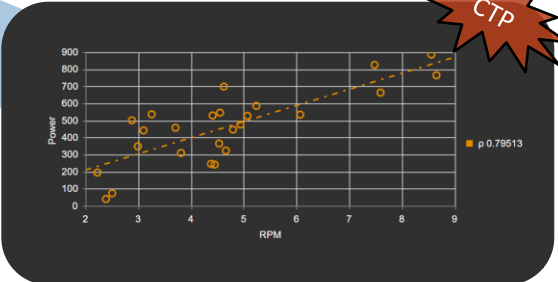
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Mine Truck 5	Volvo	John Sintias	0	0	Running
Mine Truck 6	Komatsu	Steve Kwan	1,744.9	194.14	Running
Mine Truck 7	Volvo	Brian Bostwick	0	0	Running
Mine Truck 8	Caterpillar	Steve Kia	0	0	Running
Mine Truck 9	Caterpillar	Justin Brown	0	0	Running
Mine Truck 10	Volvo	Bob Bonkers	1,719.7	157.74	Running

## XY Plot



- Refinements for the CTP XY Plot and Events Table
- Server side enhancements for PI Web API
- Other improvements
  - Organization of PI Vision displays in folders
  - Configurable related assets drop-down
  - Improved font size and number formatting control



감사합니다

谢谢

Danke

Merci

Gracias

**Thank You**

ありがとう

Спасибо

Obrigado



# Contact Information

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OSIsoft LLC





## Questions?

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



Please state your **name & company**

## Please remember to...

Complete the  
Post Event  
Survey

