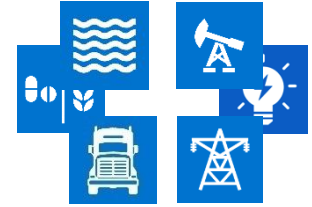


Reliability  
Millions of Streams  
Real-time  
Visualization  
CBM  
Scalability  
Asset Framework  
PI System  
Analytics  
Quality  
IoT  
Connectivity  
Sensor-based Data  
Big Data  
Infrastructure  
High Speed  
Business Transformation  
Security  
Connected Services  
Operational Intelligence  
Regulatory Compliance  
Enterprise Agreement  
Business Impact  
Enterprise  
Process  
Operational Efficiency  
Time Series  
Event Frames  
Future Data  
Energy Management  
Streaming Data  
Open System  
Asset Health  
Safety

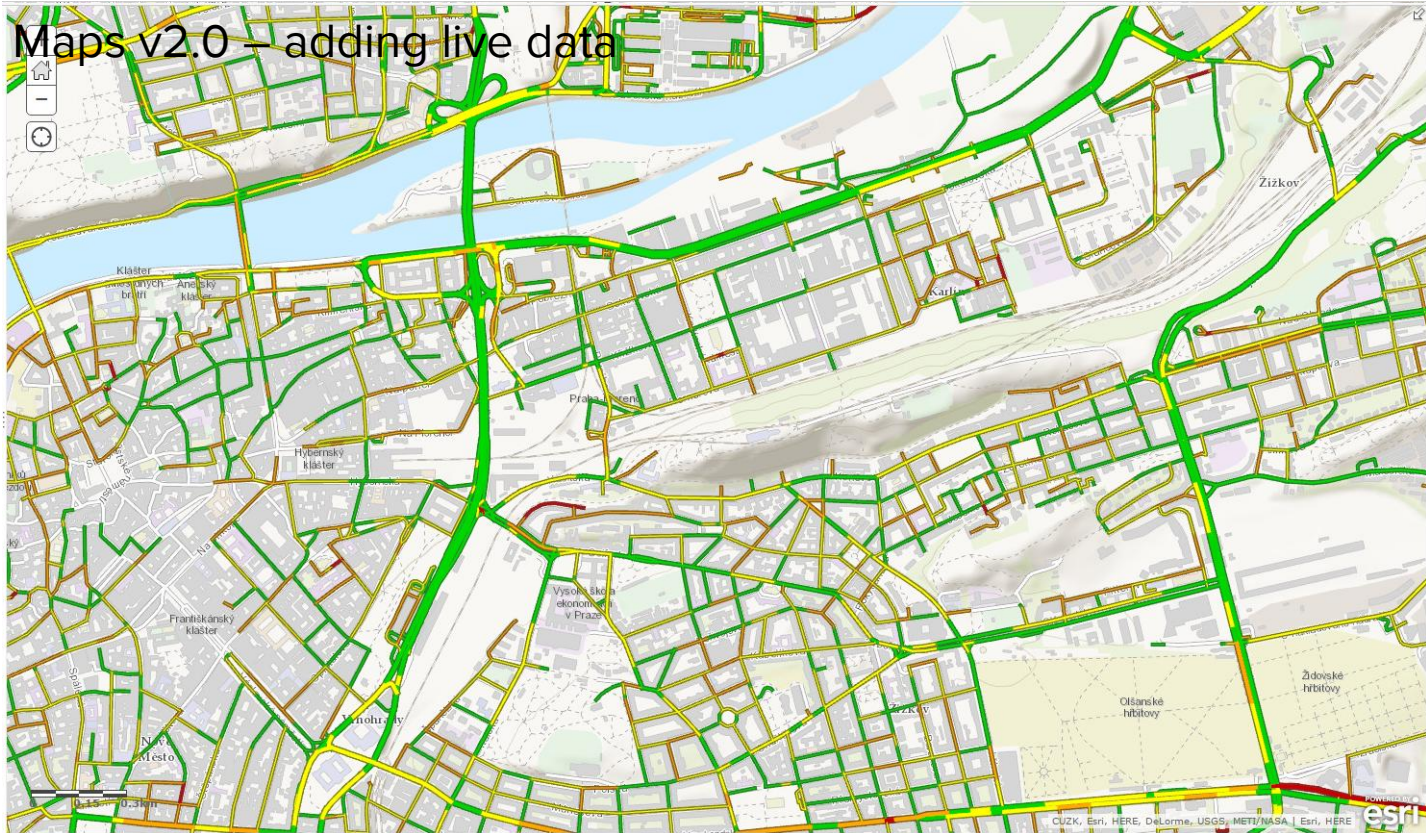


# Bring SPACE & TIME together

## PI Integrator for Esri ArcGIS

Presented by Hans Otto Weinhold - Sr. Systems Engineer  
hans-otto@osisoft.com

# ArcGIS Maps



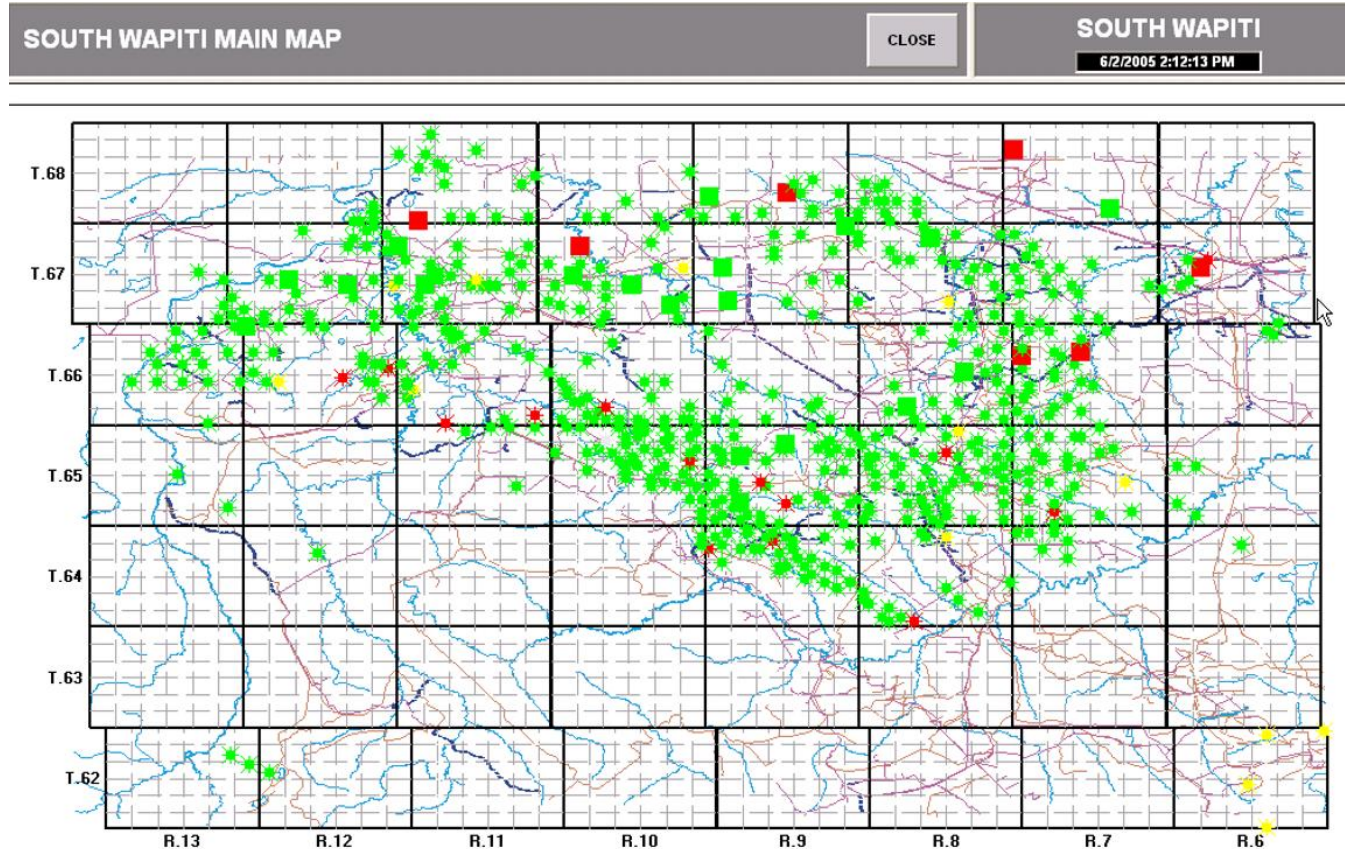


# 2005 OSIsoft Users Conference Presentation

## Oil Field Analytics



- Reference: “Wapiti JV Data Transfer Project”
- BP Canada, Devon Canada, Mera Group
- <http://www.osisoft.com/Templates/item-abstract.aspx?id=1898>

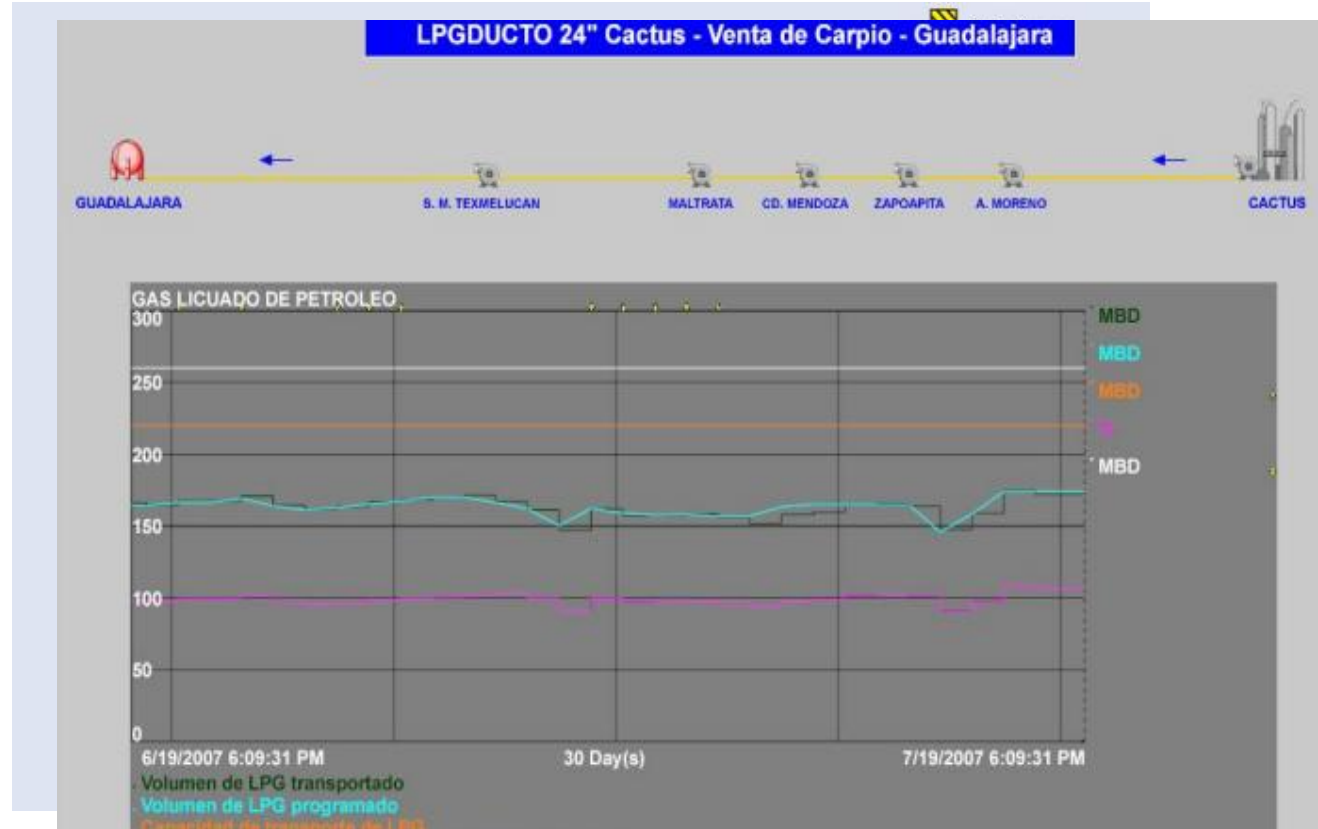


# 2007 OSIsoft Users Conference Presentation

## Oil & Gas “Pipelines Monitoring at Pemex”



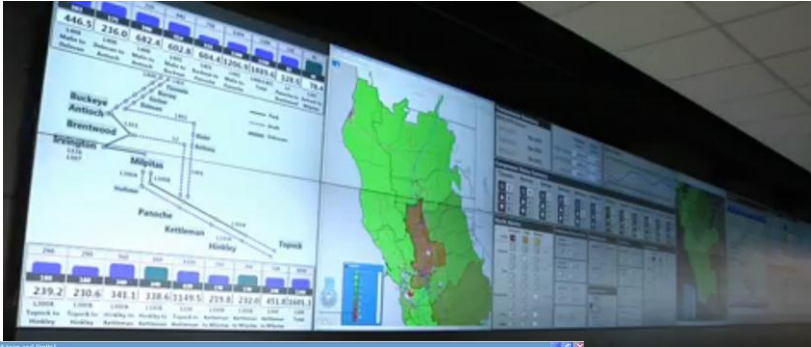
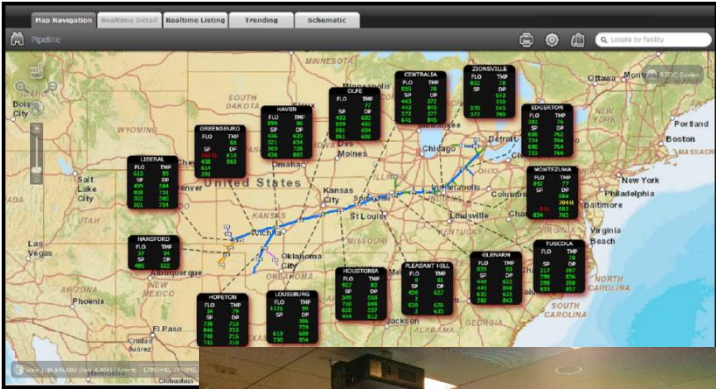
- Don't always get the **real-time status** of equipment and **flows** on a map
- **Modeling pipeline** assets in the PI System is a **challenge**.
- <http://www.osisoft.com/Templates/item-abstract.aspx?id=1926>



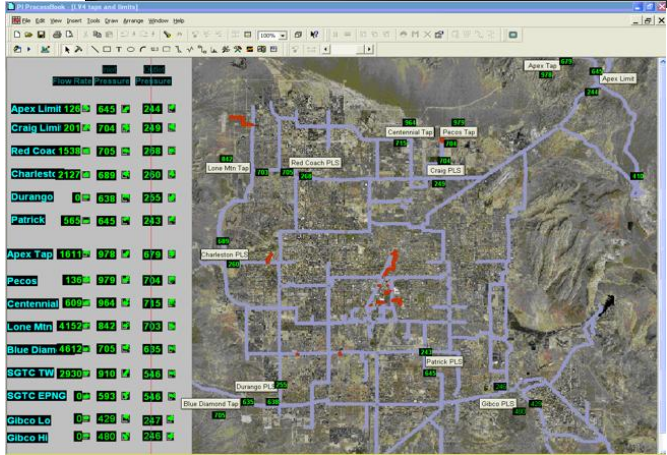
# Pipeline Operational Awareness

Energy Transfer Partners

Pacific Gas & Electric



Southern  
California  
Gas



Southwest  
Gas



# Tracking, Reporting, and Compliance

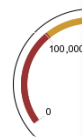


AMI Inventory Daily Status Report

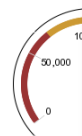
Collectors by Total Meters Not Responding

Collector ID	Number of Reporting Meters (Sum)	Total Days Since Last Report	Total Meters Not Responding
He56125G76124	276	5	41
He56124G76123	160	0	15
He56108G76107	134	2	9
He56106G76105	123	3	5
He56122G76121	74	1	3
He56107G76106	50	3	1
He56100G7699	48	0	0
He56101G76100	94	0	0
He56102G76101	47	0	0
He56103G76102	27	0	0
He56104G76103	148	6	0
He56105G76104	81	0	0
He56109G76108	63	5	0
He5610G769	172	0	0
He56110G76109	99	0	0
He56111G76110	146	0	0
He56112G76111	33	0	0
He56113G76112	79	0	0
He56114G76113	70	0	0
He56115G76114	176	0	0

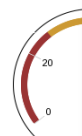
Total Trans



Total Trans



Total Meters



Collectors by Total Meters Not Responding

Collector ID	Number of Reporting Meters (Sum)	Total Days Since Last Report	Total Meters Not Responding
He56125G76124	276	5	41
He56124G76123	160	0	15
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He56107G76106	50	3	1
He56100G7699	48	0	0
He56101G76100	94	0	0
He56102G76101	47	0	0
He56103G76102	27	0	0
He56104G76103	148	6	0
He56105G76104	81	0	0
He56109G76108	63	5	0
He5610G769	172	0	0
He56110G76109	99	0	0
He56111G76110	146	0	0
He56112G76111	33	0	0
He56113G76112	79	0	0
He56114G76113	70	0	0
He56115G76114	176	0	0

AMI Inventory Daily Status Report



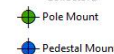
Meters by Days Since Last Report



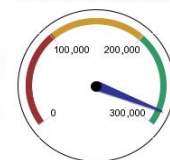
Meters by Total Number of Jumps



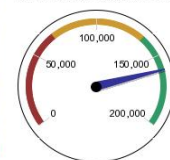
Collectors



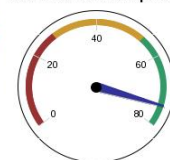
Total Transmissions Sent



Total Transmission Errors



Total Meters Not Reporting



Tracking, Reporting, & Compliance

# Sample industry use cases



Electric

- Events affecting your network
- Field communication
- Emergency operations



Oil & Gas

- Well performance
- Pressure differentials
- Product quality in delivery network
- Asset integrity
- Vulnerability assessment



Facilities

- Energy management
- Sustainability performance tracking
- Environmental & demographic influences



Mining

- Vehicle & road maintenance
- Ore tracking
- Dispatching and logistics



Water

- Proactive leak maintenance
- Water flow detection
- Combined sewer overflow prevention



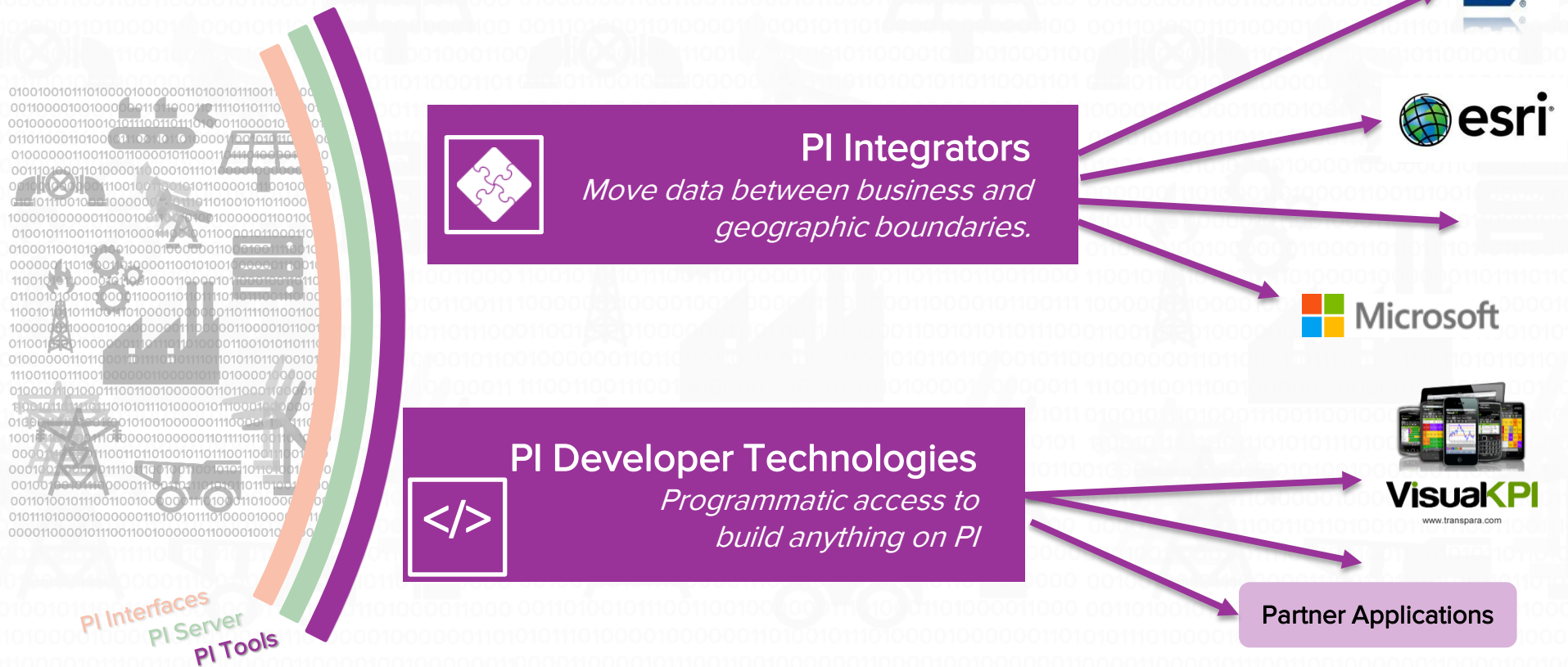
# ArcGIS is a Platform ▶

Making mapping and location aware apps available across your organization



# Boundless

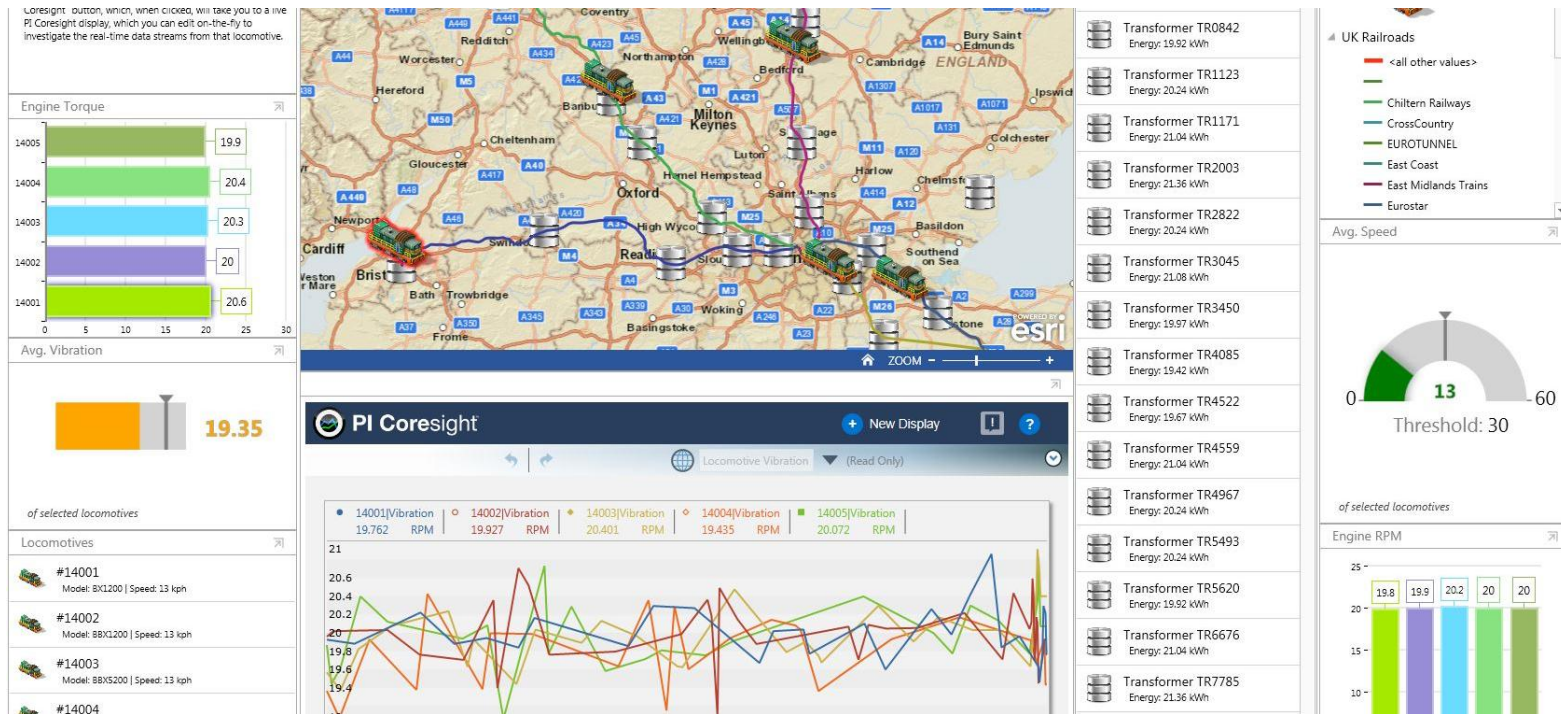
## Open data export



# Improving Process & Operational Workflows


## Decision-Ready Data for your Smart Field projects

Pull PI System Data to update features and widgets





# User Configurable Integrator

 PI Integrator for Esri ArcGIS

ServicesAdministrationToolsHelp

Kuiee, Michelle | Log Off

home / services / SanDiegoAirport

Service SanDiegoAirport

Sample San Diego Airport demo

Created on 06/18/2014 07:16:19 (9 months ago)

View in services directory

Layers (9)

Layers allow you to select data from the PI System and connect to the ArcGIS Platform. Layer data can be exposed in different ways and can be configured to meet your needs. These capabilities are available once you have created a layer.

Create LayerTile view

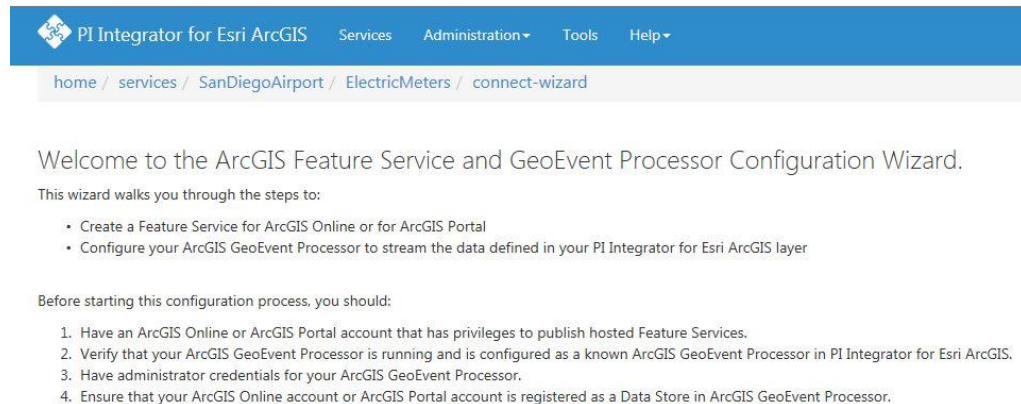
Name	Description	Created	Modified	Active connections	
Airplanes	Sample airplanes	06/18/2014 07:17:04	06/18/2014 07:17:04	6	
Circuits	SDGE distribution lines	09/16/2014 07:12:14	09/16/2014 07:12:14	11	
ElectricMeters	SanDiegoAirport_ElectricMeters	07/20/2014 09:48:10	07/20/2014 09:48:10	0	
MobileAssets	Sample vehicle locations	06/18/2014 07:22:35	06/18/2014 07:22:35	8	
NoiseSensors	Sample noise data	06/18/2014 07:24:16	06/18/2014 07:24:16	8	
RealPressureSensors	Real pressure transducers	12/08/2014 08:13:20	01/29/2015 05:43:17	1	
SmartElectricit...	Sample electricity meters	06/25/2014 04:27:15	06/25/2014 04:27:15	10	
Substations	SDGE Substations	09/16/2014 07:31:52	09/16/2014 07:31:52	13	
WeatherStations	Real weather from NOAA	06/18/2014 07:25:08	06/18/2014 07:25:08	7	

“Not a Speck of Code!”

Devon Energy

# What was delivered with PI Integrator for Esri ArcGIS 2014

- current PI System values published to the map
- Wizard that configures ArcGIS Platform Integration
- PI Coresight link to map
- Map Extractor Tool



# The ArcGIS Platform Wizard

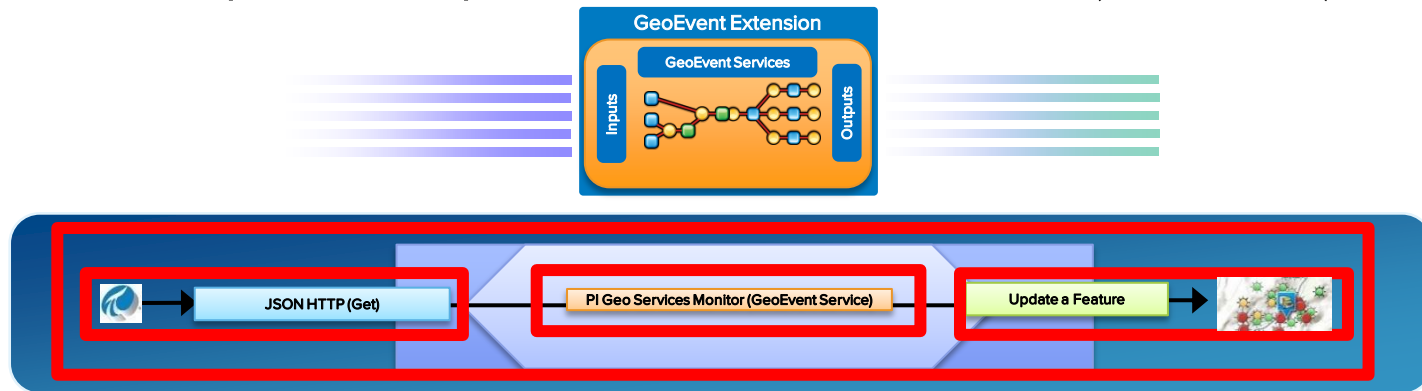
Let us do the work for you!

Create a Feature Service in Portal or ArcGIS Online

Create the Input Connector - JSON HTTP (get)

Create the Output Connector - Update Feature Service

Connect Input to Output with GeoEvent Service (Workflow)





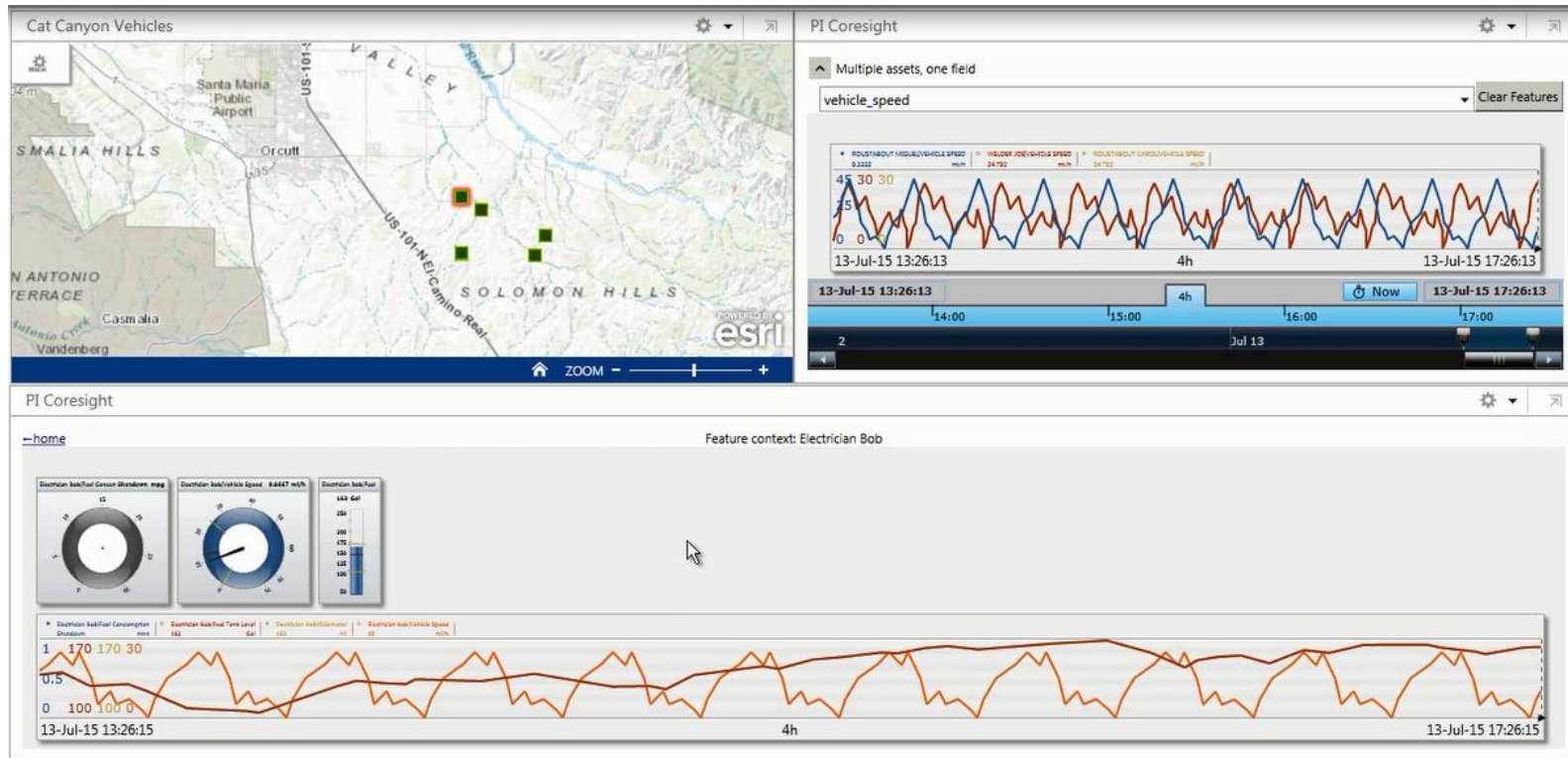
## New features in the 2014 SP1 Version – March 2015

1. ArcGIS v 10.3.0 support
2. Support for Sub-Attributes
3. Oracle support
  - a) set attribute names to uppercase automatically
  - b) No need for field mapper in GeoEvent Extension
4. Bug fixes (of course 😊 )

## Coming to the PI Integrator for Esri ArcGIS 2015 (4Q 2015)

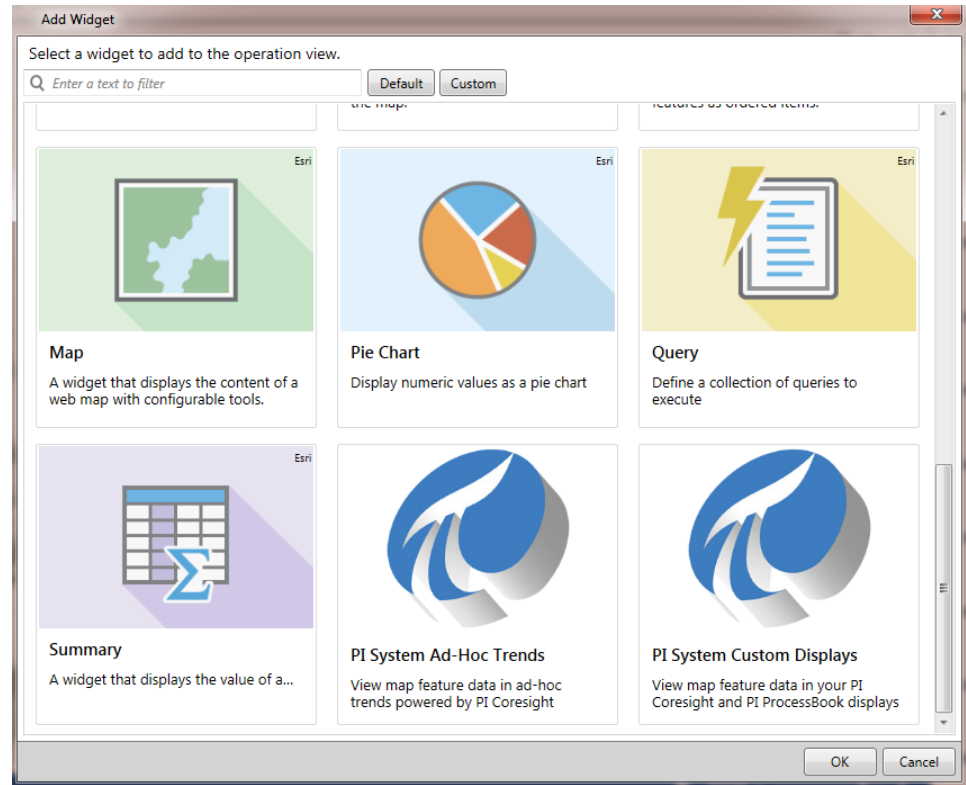
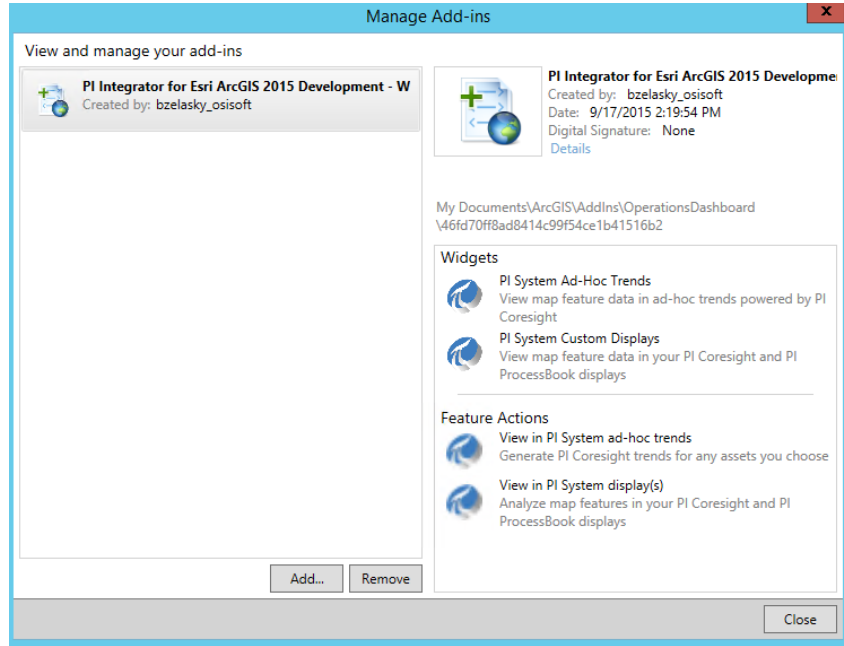
1. Support for ArcGIS 10.3.1 authentication
2. Performance Counters
  - a) Application Server
  - b) Data Relay service
3. Operations Dashboard Add-In for desktop version
  - a) Ad-Hoc Trend Widget
  - b) Saved Display Widget (native PI Coresight or PI ProcessBook display)

# ArcGIS Operations Dashboard - PI Coresight Widgets





# Delivered as Add-Ins shared on Portal or AGOL



# Intuitive Configuration

Configure your **Ad-hoc PI Trend Widget**

**PI Integrator Configuration**

Integrator:

Service:

Layer:

**Map Widget Configuration**

Data Source:

Title:

Start time:

End time:

☐ Hide Time Bar ☒ Quick Select

[PI Coresight User Guide](#)

IE Version: 11

Configure your **PI Custom Widget**

**PI Integrator Configuration**

Integrator:

Service:

Layer:

**Map Widget Configuration**

Data Source:

Title:

Start time:

End time:

☐ Hide Time Bar ☒ Quick Select

[PI Coresight User Guide](#)

IE Version: 11










# Demo





# PI Integrator for Esri ArcGIS

2014			2015				2016		
2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
		 EMEA UC 		 SF UC 		 EMEA UC 		 SF UC	
<b>Esri Integrator 2014</b> Configuration Portal AF Jump Start w Map Extractor Platform Integration Wizard ArcGIS 10.2.2			<b>Esri Integrator 2014 SP1</b> ArcGIS 10.3 OracleDB supported as Backend			<b>Esri Integrator 2015</b> ArcGIS 10.3.1 Authentication ArcGIS Operations Dashboard Add-In (Two new PI Coresight Widgets) Performance Counters			
Wave 1 – Current PI Data animates the Map						Wave 2 – How to replay PI Data on a Map			

# Visit our corporate GIS page!

Watch previous joint web casts

Read customer white papers

View industry demos



All of that can be found here:

<http://www.osisoft.com/corporate/gis/>

We also have a Field Service offering (Esri Workshop) – reach out to your Account Manager

# Invitation

Feel free to visit our demo pod  
at the product expo area...

**...for discussions, demo  
and hands on the product!**



# Contact Information

Hans Otto Weinhold

[hans-otto@osisoft.com](mailto:hans-otto@osisoft.com)

Sr. Systems Engineer

OSIsoft Europe GmbH



# Questions

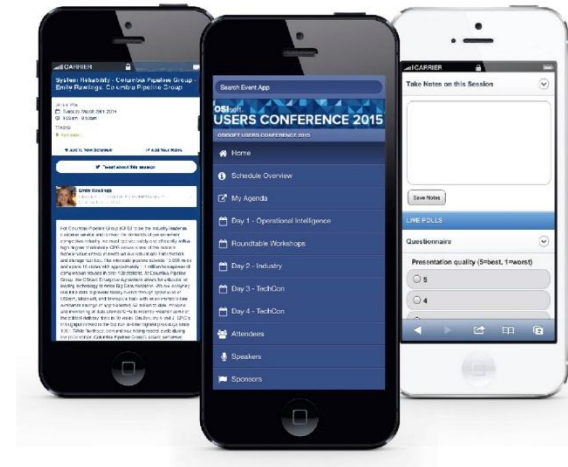
Please wait for the **microphone** before asking your questions



State your  
**name & company**

# Please don't forget to...

Complete the Online Survey  
for this session



<http://eventmobi.com/emeauc15>





감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado

With the PI Integrator for Esri ArcGIS you can bring  
SPACE & TIME together!