

OSIsoft PI Integrator for Esri ArcGIS

Hans Otto Weinhold
Sr. Systems Engineer

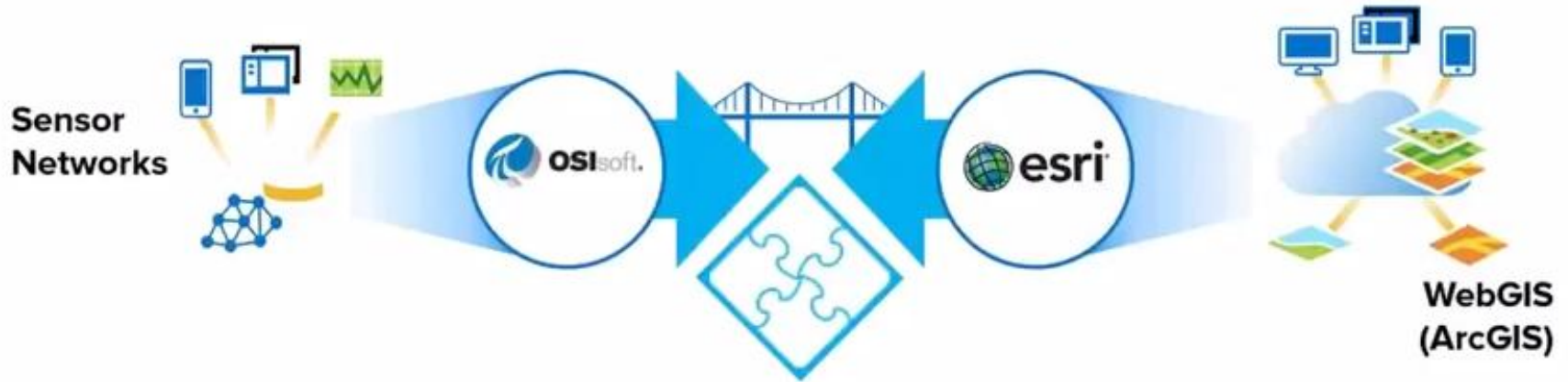
Friday, June 05, 2015





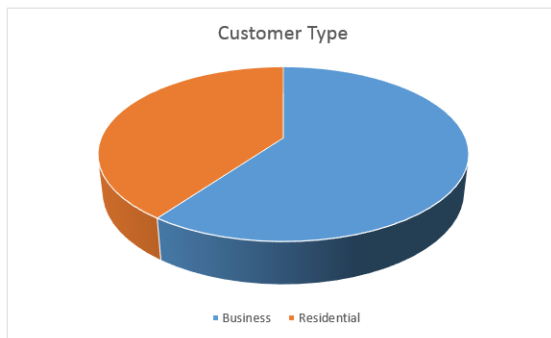
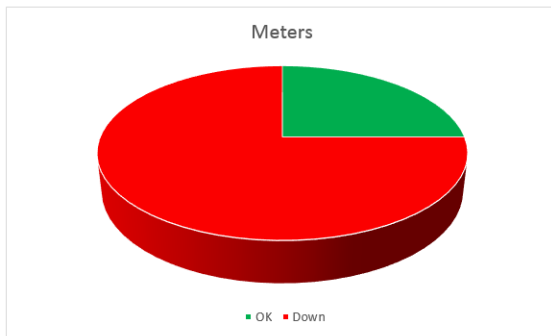
Two Companies One Vision:

We believe data in the hands of smart people can create amazing insights, business improvements, and value



Location as Organization

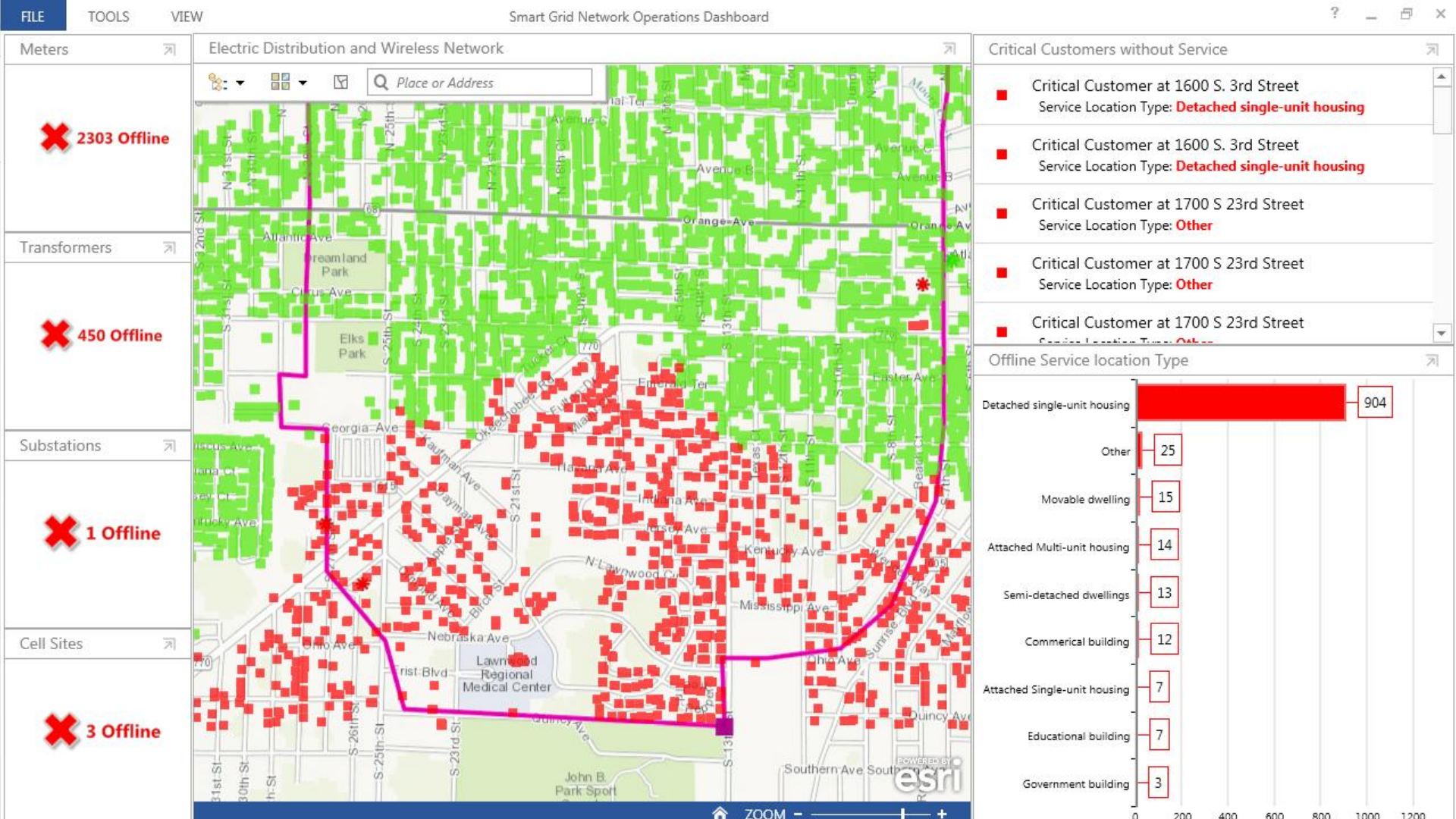
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3899763536	Down	9	Business
1568530205	OK	45	Residential
2456619093	Down	45	Business
4454819091	Down	69	Business
3011674648	Down	9	Business
3233696870	OK	33	Business
4121785758	Down	33	Business
1457519094	Down	33	Business
3122685759	Down	21	Business
5231896868	Down	57	Residential
3344707981	Down	45	Residential
4010774647	OK	21	Residential
5564930201	Down	93	Business
2345607982	OK	33	Business
2567630204	Down	57	Business
4343807980	OK	57	Business
4898863535	OK	21	Residential
4565830202	OK	81	Residential
2789652426	Down	81	Business
3455719092	OK	57	Business
2678641315	OK	69	Business
5453919090	OK	81	Residential
3677741314	Down	81	Residential
2012574649	Down	93	Business
2900663537	OK	93	Business
1679541316	Down	57	Business
3566730203	Down	69	Residential
3788752425	OK	93	Residential
1790552427	OK	69	Business
4787852424	Down	9	Business
1901563538	Down	81	Business

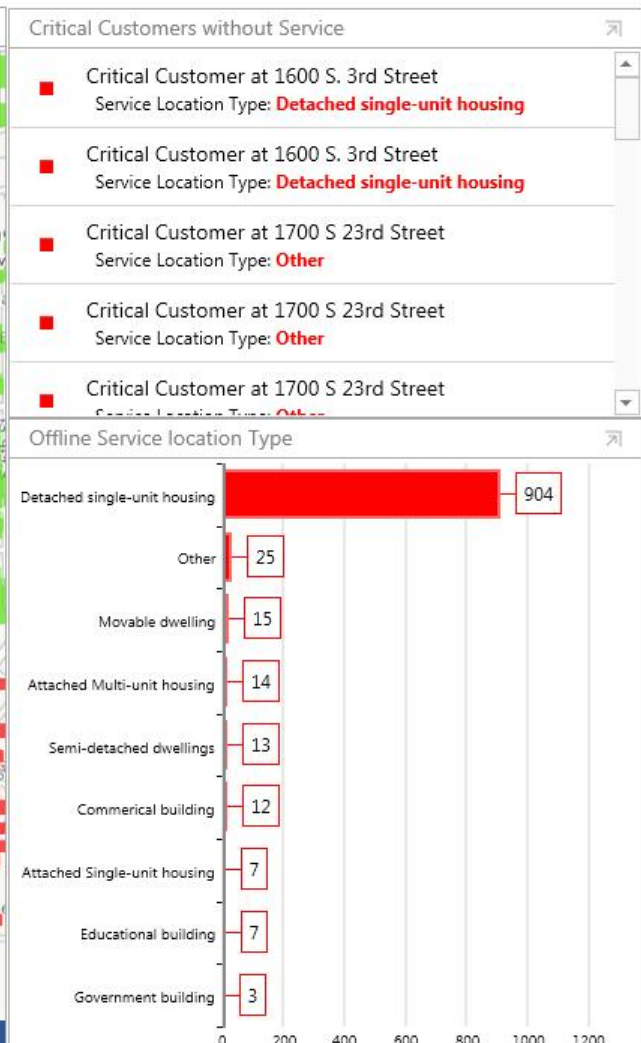


“Everything is related to everything else, but near things are more related than distant things”

-Tobler's First Law of Geography







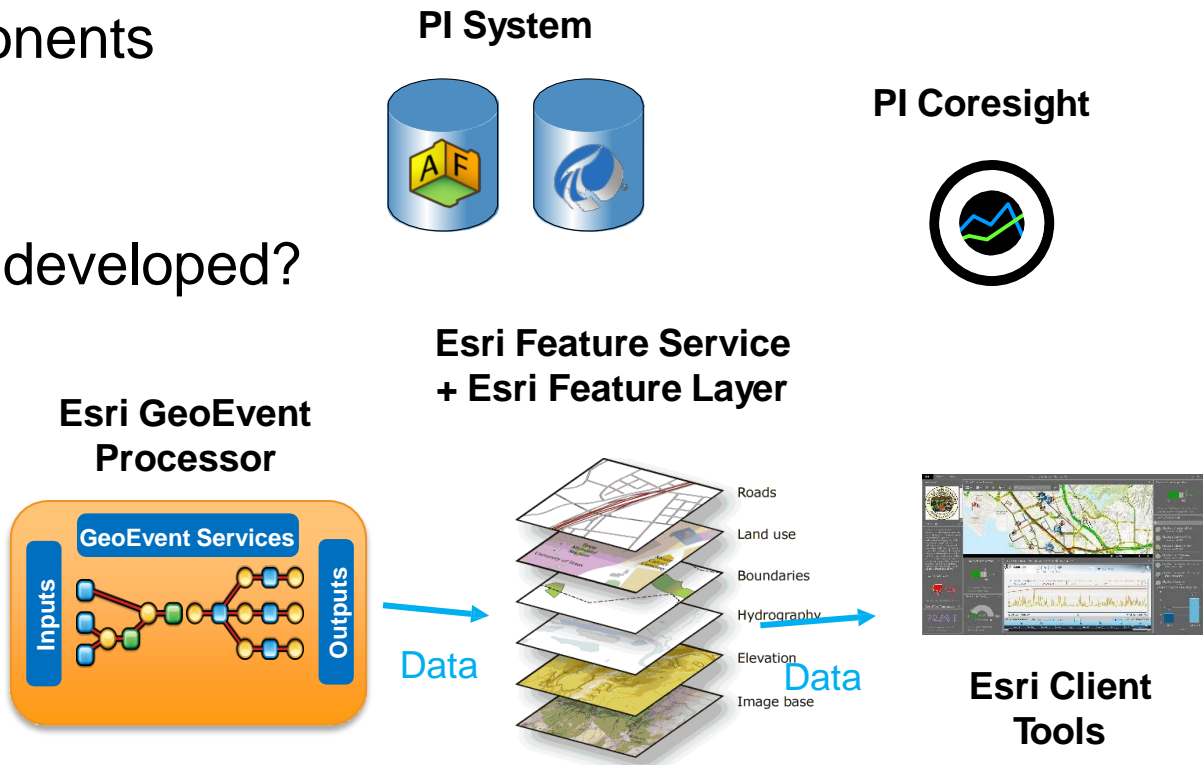
Operational Excellence with Real-Time GIS

- Improving Operational Planning and Daily Activities
 - proactive network & asset management
 - improving process & operational workflows
 - tracking, reporting, & compliance
- Making Immediate and Actionable Decisions
 - situational awareness for emergency response
 - health, safety, and environment

What existed prior to the PI Integrator for Esri ArcGIS?

- Stand alone components
- Published SDKs

What exactly have we developed?



What we have developed?

- Wizard-based configuration experience
- Ability to use the ArcGIS Asset listing to create the PI AF Element Structure
- Ability to invoke and embed PI Coresight displays from within ArcGIS

Configuration Portal Web App



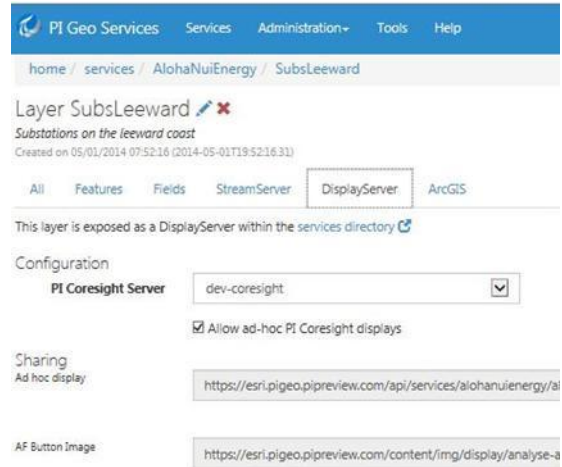
The screenshot shows the 'Create new Geo Service' page in the PI Geo Services portal. The breadcrumb trail is 'home / services / new'. The form includes a 'Name' field with the placeholder 'Name of your Geo Service', a 'Description' field with the placeholder 'Description for your Geo Service', and two checked checkboxes: 'StreamServer' and 'DisplayServer'. A 'Create' button is at the bottom.

AF Asset Extractor



The screenshot shows the 'PI Asset Extractor for Esri ArcGIS' page. The breadcrumb trail is 'home / services / AlohaNuiEnergy / SubsLeeward'. The title is 'PI Asset Extractor for Esri ArcGIS' with the subtitle 'Extract your Esri ArcGIS map features as PI AF assets'. The 'Load features' section instructs the user to 'Read assets automatically from a Feature Layer URL' and provides a text area for the 'Address'. Below the text area, it states 'No features loaded yet' and offers a link to 'Or, manually provide feature JSON (advanced) >>'. There are 'Apply' and 'Next' buttons at the bottom.

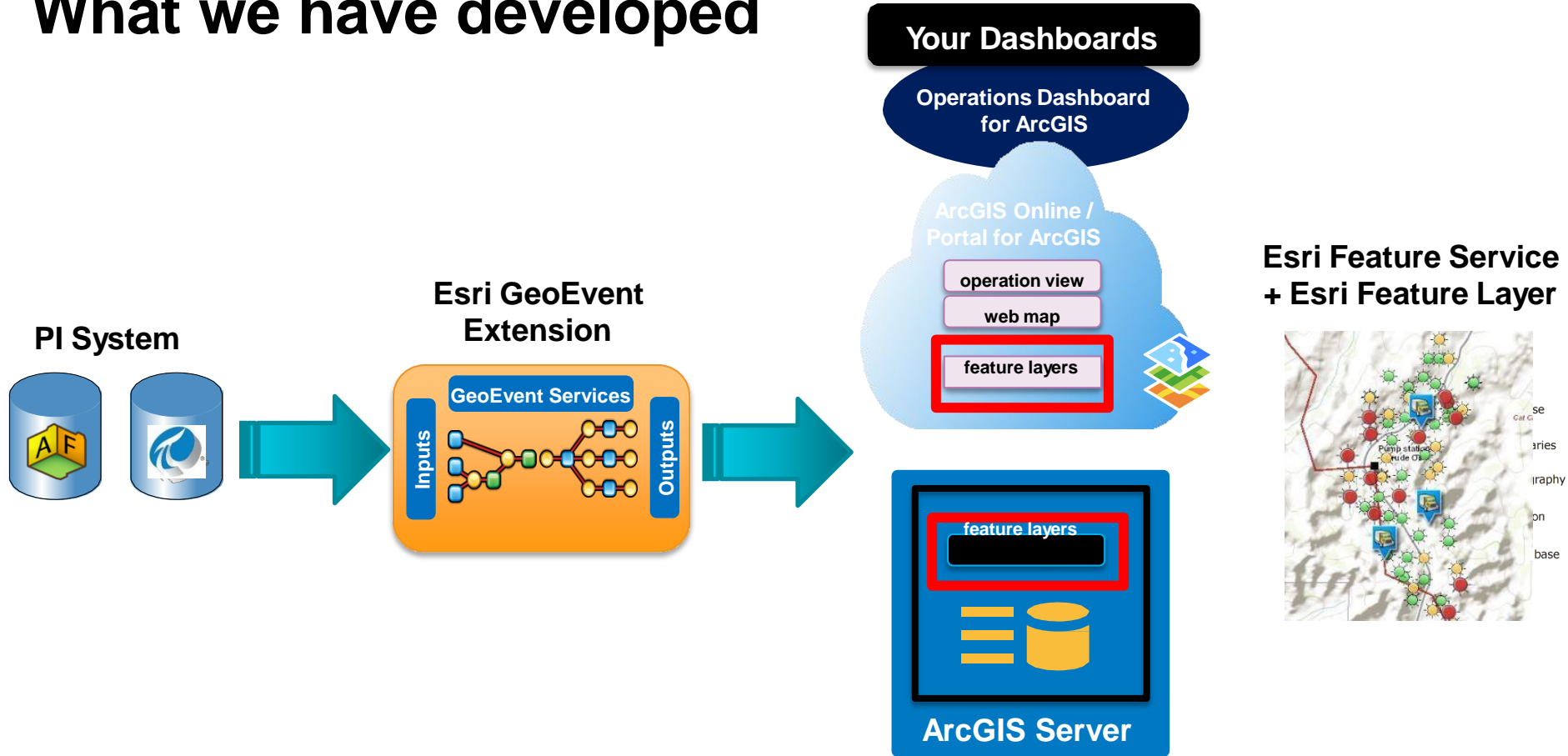
PI Coresight Endpoint Creation



The screenshot shows the 'PI Coresight Endpoint Creation' page. The breadcrumb trail is 'home / services / AlohaNuiEnergy / SubsLeeward'. The title is 'Layer SubsLeeward' with the subtitle 'Substations on the leeward coast' and a creation timestamp. There are tabs for 'All', 'Features', 'Fields', 'StreamServer', 'DisplayServer', and 'ArcGIS'. The 'DisplayServer' tab is selected, showing the text 'This layer is exposed as a DisplayServer within the services directory'. The 'Configuration' section has a dropdown for 'PI Coresight Server' set to 'dev-coresight'. The 'Sharing' section has a text field for 'Ad hoc display' containing a URL. The 'AF Button Image' section has a text field containing another URL.



What we have developed



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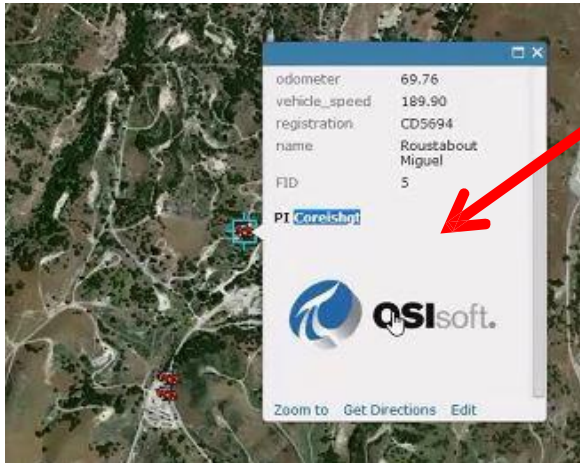
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Embed PI Coresight in to ArcGIS Visualization

- Display Pop-ups OR
- In Esri ArcGIS Operations Dashboard

PI Coresight



PI Coresite Link inside of ArcGIS Pop-up



Esri Operations Dashboard



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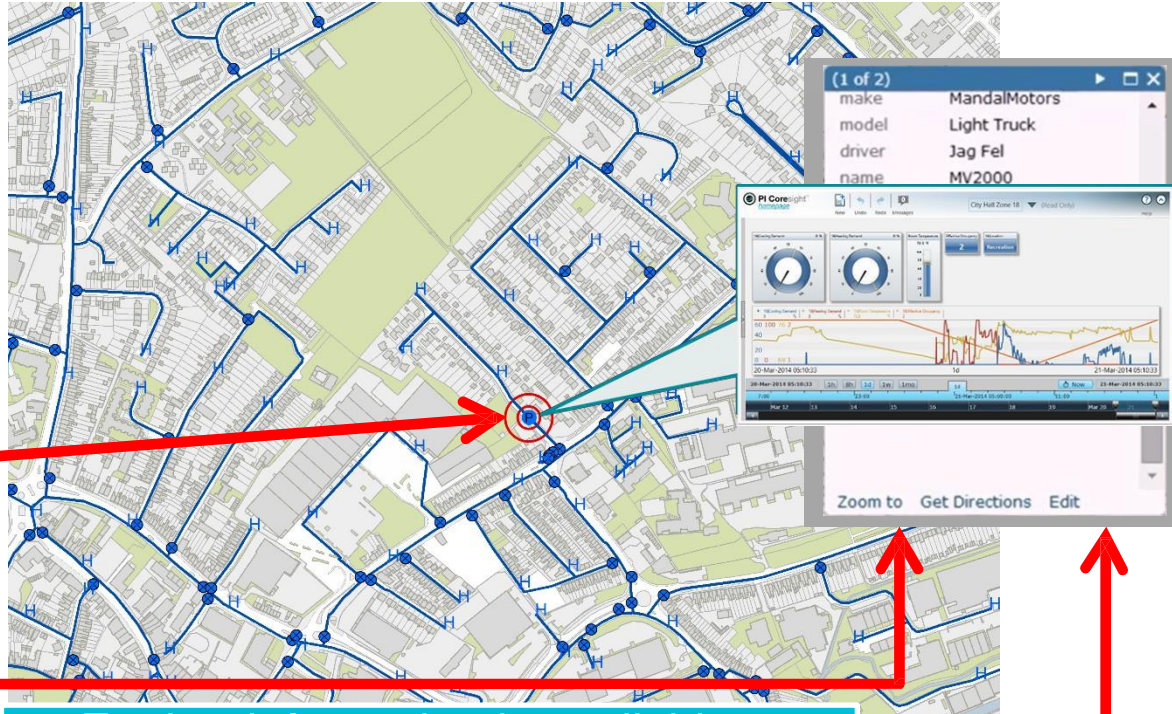
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Integrated Real-time Information



Operator clicks on the Asset on GIS display

Real-time information from the PI System for this Asset is displayed



Further information is available - single click to access



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What are Utilities doing with PI System and ArcGIS?

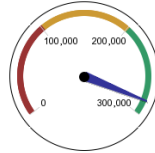
Location Analytics

AMI Inventory Daily Status Report

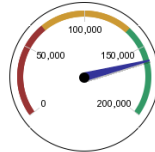
Collectors by Total Meters Not Responding

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
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He56114G76113	70	0	0
He56115G76114	176	0	0

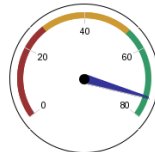
Total Transmissions Sent



Total Transmission Errors



Total Meters Not Reporting



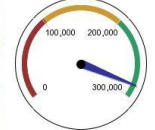
AMI Inventory Daily Status Report

Collectors by Total Meters Not Responding

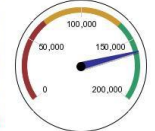
Collector ID	Number of Reporting Meters (Sum)	Total Days Since Last Report	Total Meters Not Responding
He56125G76124	276	5	41
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He56106G76105	123	3	5
He56122G76121	74	1	3
He56107G76106	50	3	1
He56100G7699	48	0	0
He56101G76100	94	0	0
He56102G76101	47	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
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He56114G76113	70	0	0
He56115G76114	176	0	0



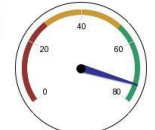
Total Transmissions Sent



Total Transmission Errors

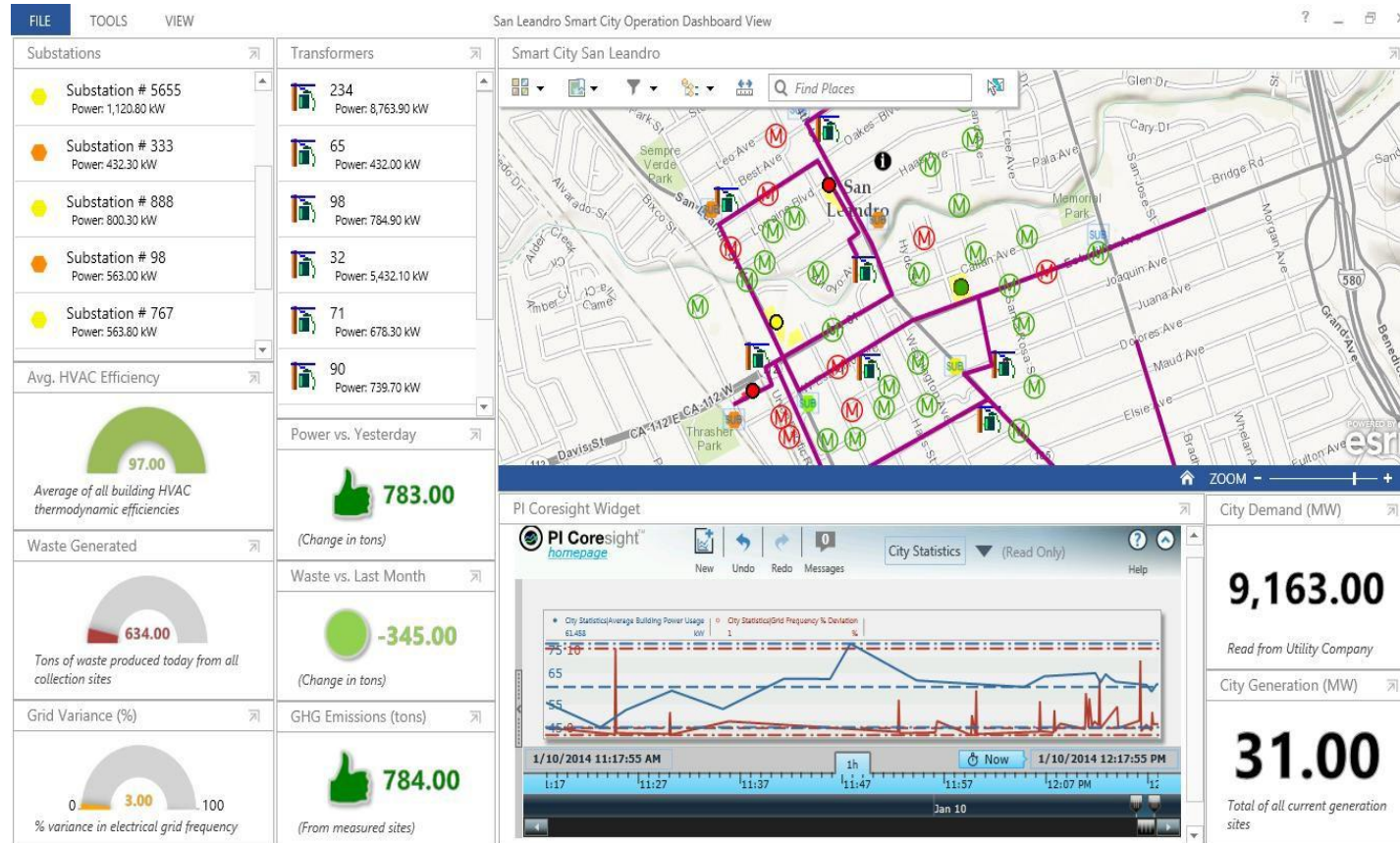


Total Meters Not Reporting



The 'blind' spot

Operational Performance View

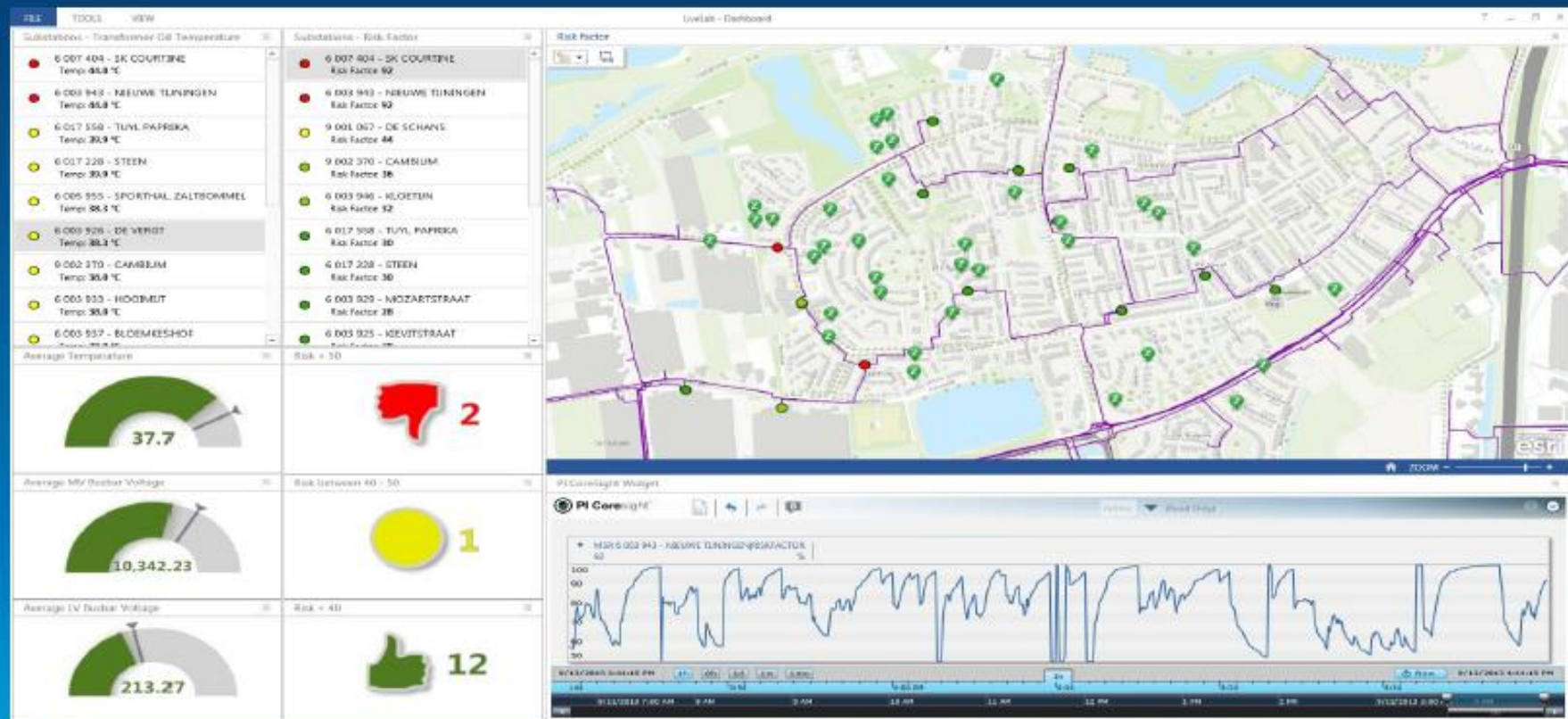


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Alliander Experience Center



FINGRID

Assets from Maximo
and locations from ArcGIS



Events from PI Integrator



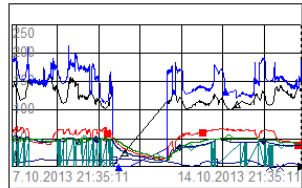
Naennäisteho HV: 184 MVA
Naennäisteho max (1 vuosi): 325 MVA
Kuorma: 46 %

Naennäisteho MV: 134 MVA
Naennäisteho max (1 vuosi): 311 MVA
Kuorma: 34 %

Kuormustiedot

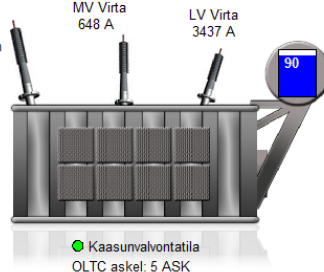
Ilmankuivaimet

Lämpötilat



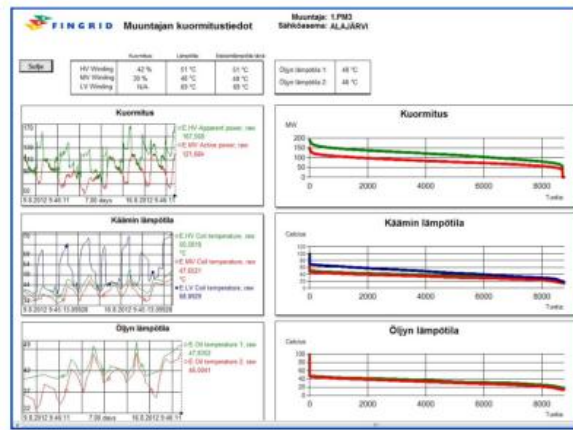
Öljyn lämpötila 1: 41 °C
Öljyn lämpötila 2:
HV kaämin lämpötila: 37 °C
MV kaämin lämpötila: 38 °C
LV kaämin lämpötila: 49 °C
Ulkolämpötila: 4 °C

N
Sähk

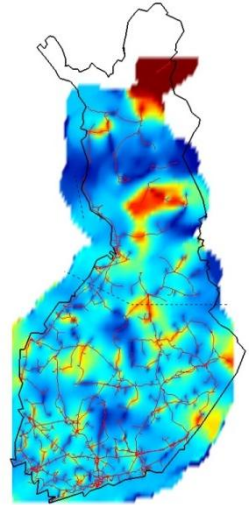


● Kaasunvalvonta
OLTC askel: 5 ASK
Kaämik. toim.kerrat: 1062

Tapahtuma- / hälytyslista

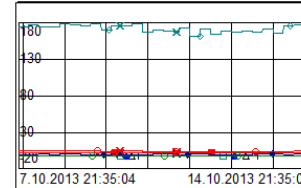


Real time visualization

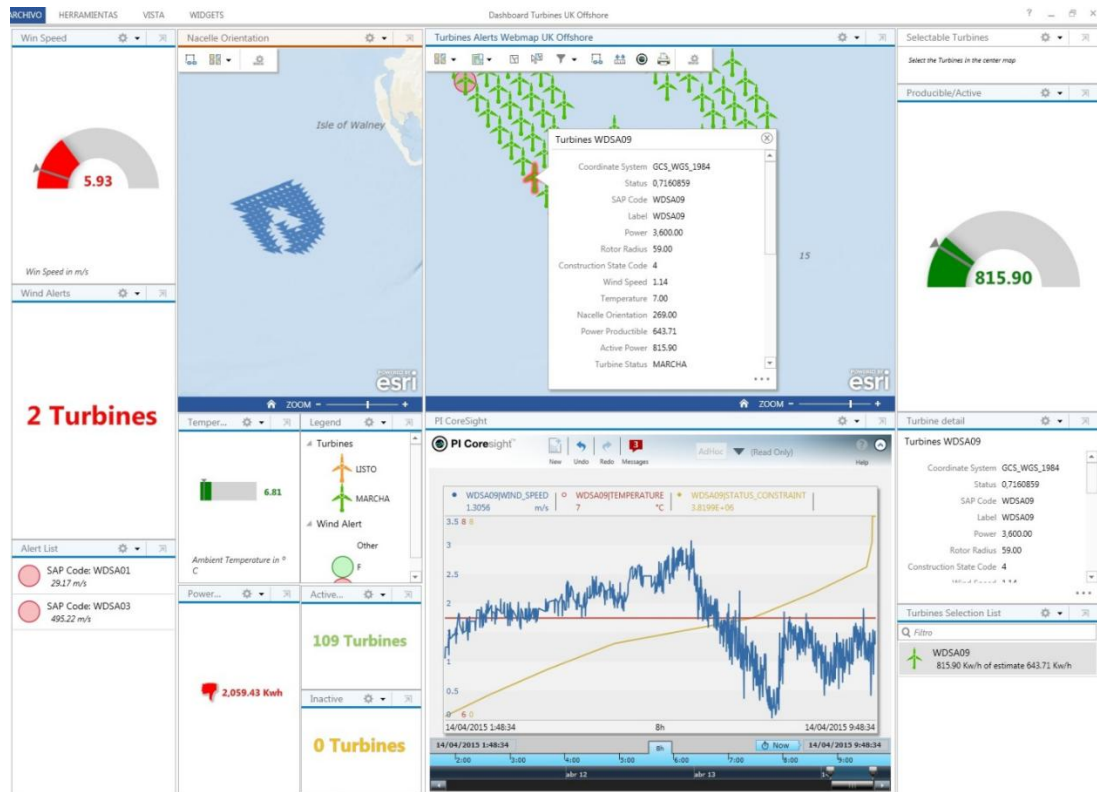


H2 Vety	● 4 ppm	4 ppm
CO Hiilimonoksidi	● 166 ppm	172 ppm
C2H2 Asetyyleeni	● 0 ppm	0 ppm
C2H4 Etyyleeni	○	
CH4 Metaani	○	
C2H6 Etaani	○	
O2 Happi	○	
CO2 Hiidioksi	○	
H2O Kosteus	● 2 ppm	2 ppm
Kaasupitoisuus	○	

Kaasunvalvonta

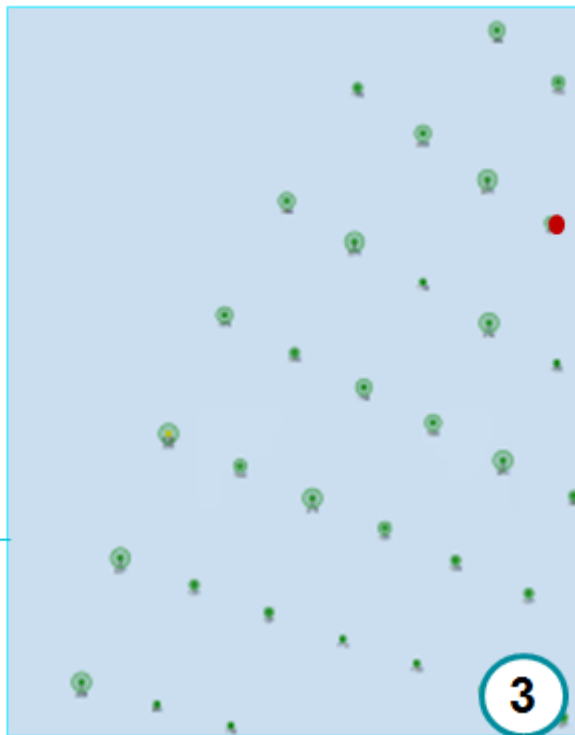
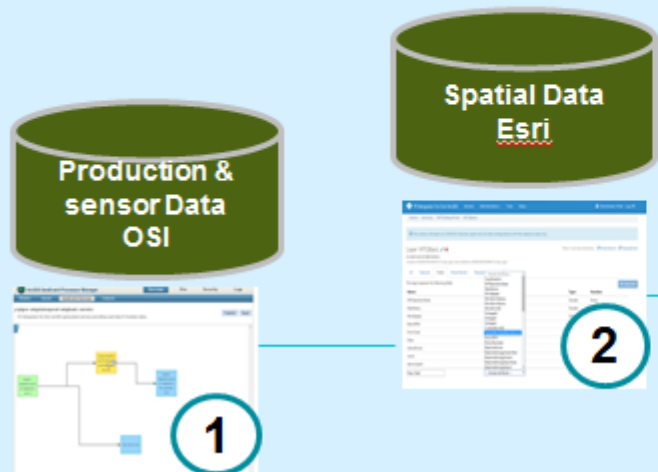


Iberdrola Renewables

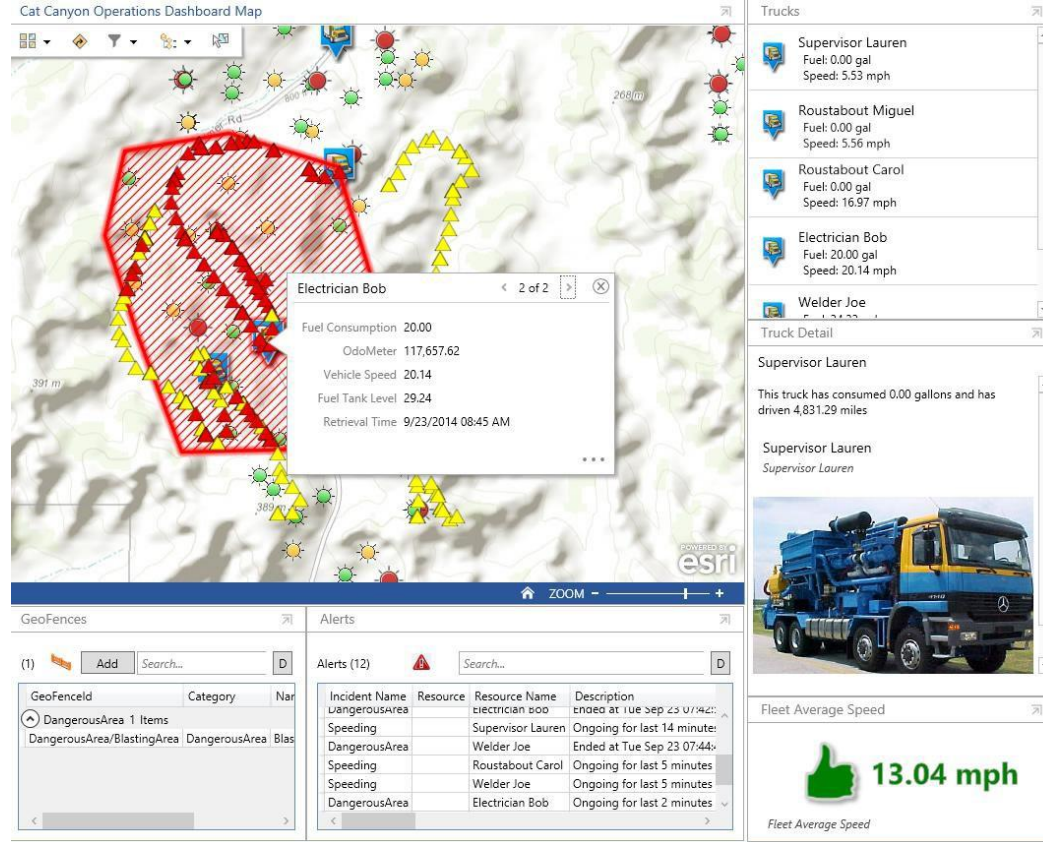


DONG Energy

- OSIsoft PI integration with Esri GeoEvent Processor
- Display production and spatial asset location on maps



Worker dispatch

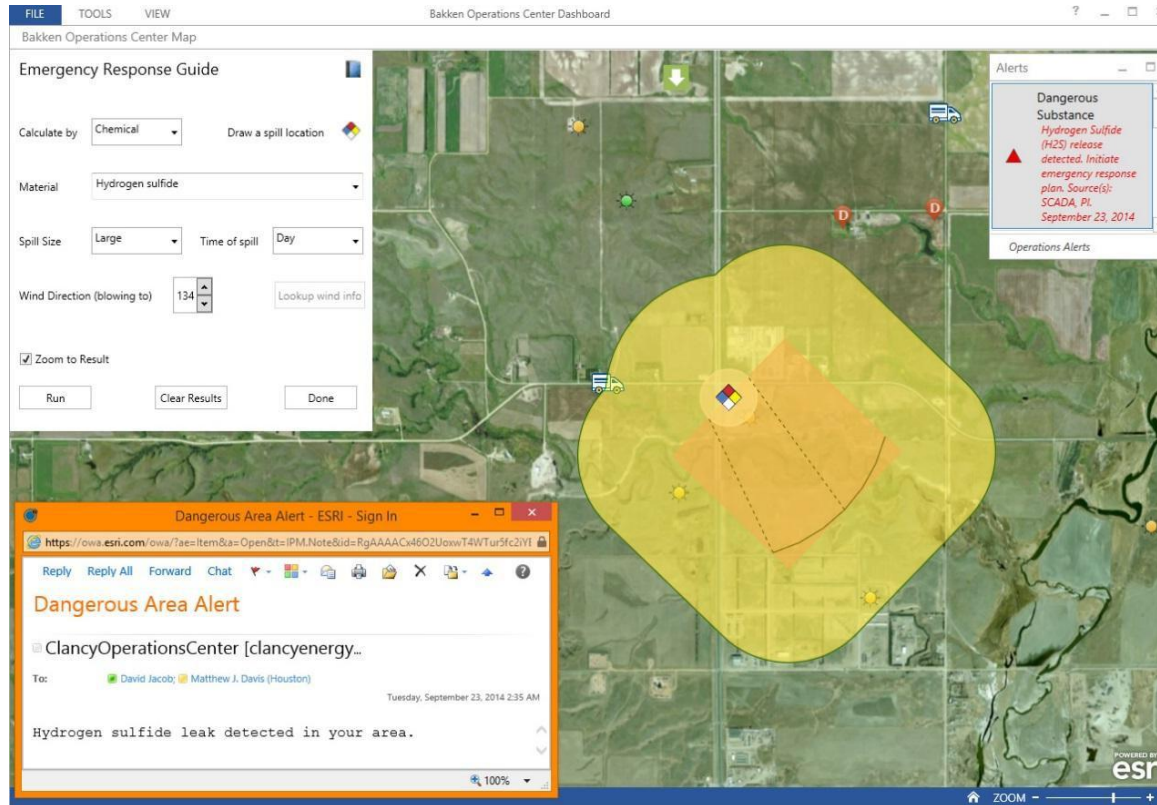


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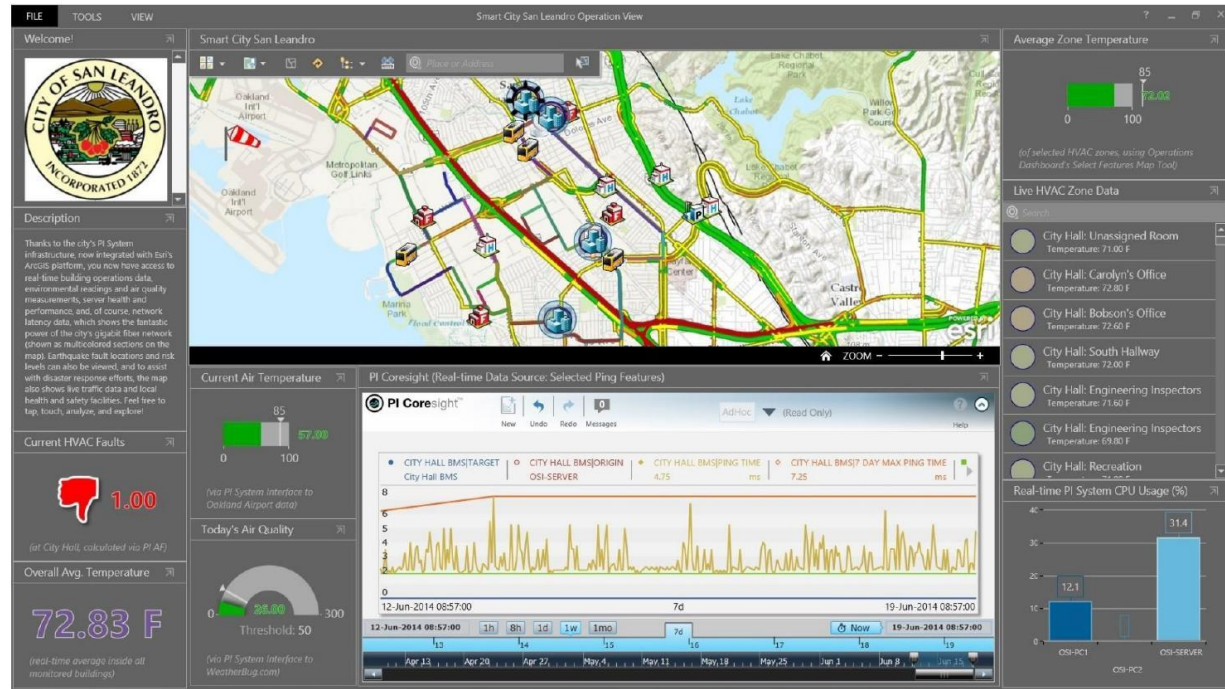
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Environmental Health & Safety



What are Cities doing with PI System & ArcGIS

- Facilities
- Mobile Assets
- Utilities
 - Power
 - Water
 - Gas
- Environmental Monitoring
 - Air quality
 - Noise levels

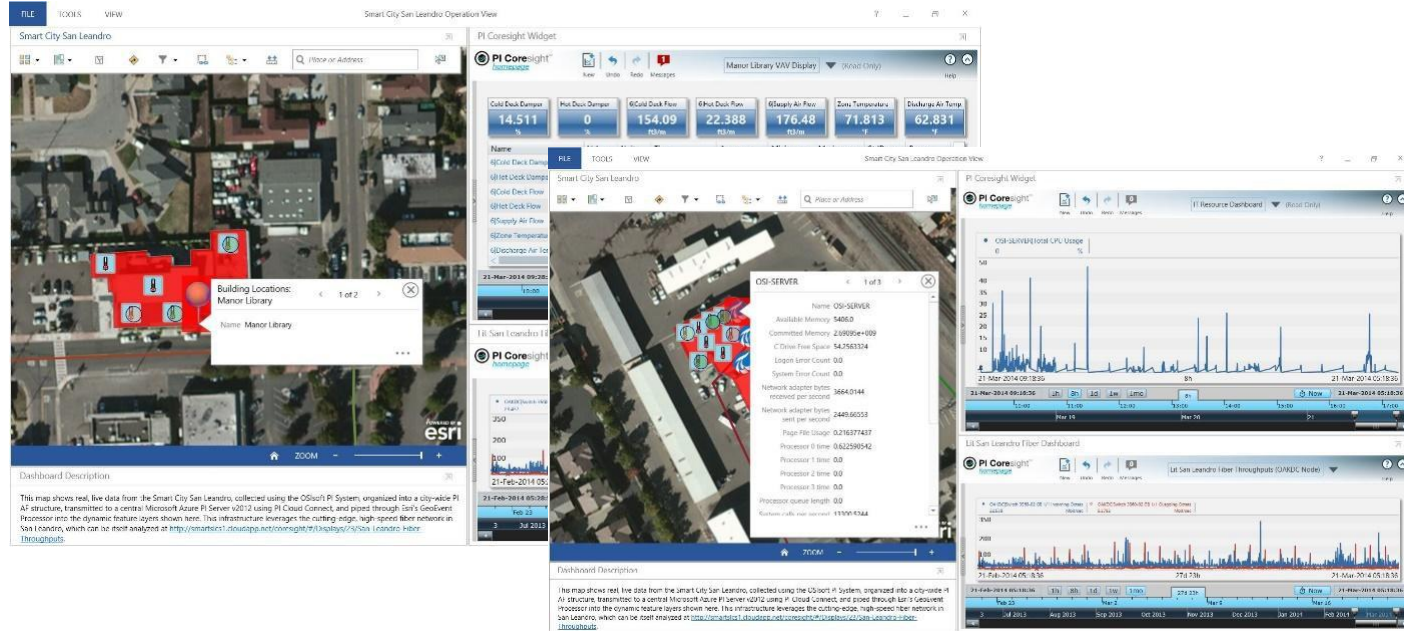


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Facilities & Energy Management

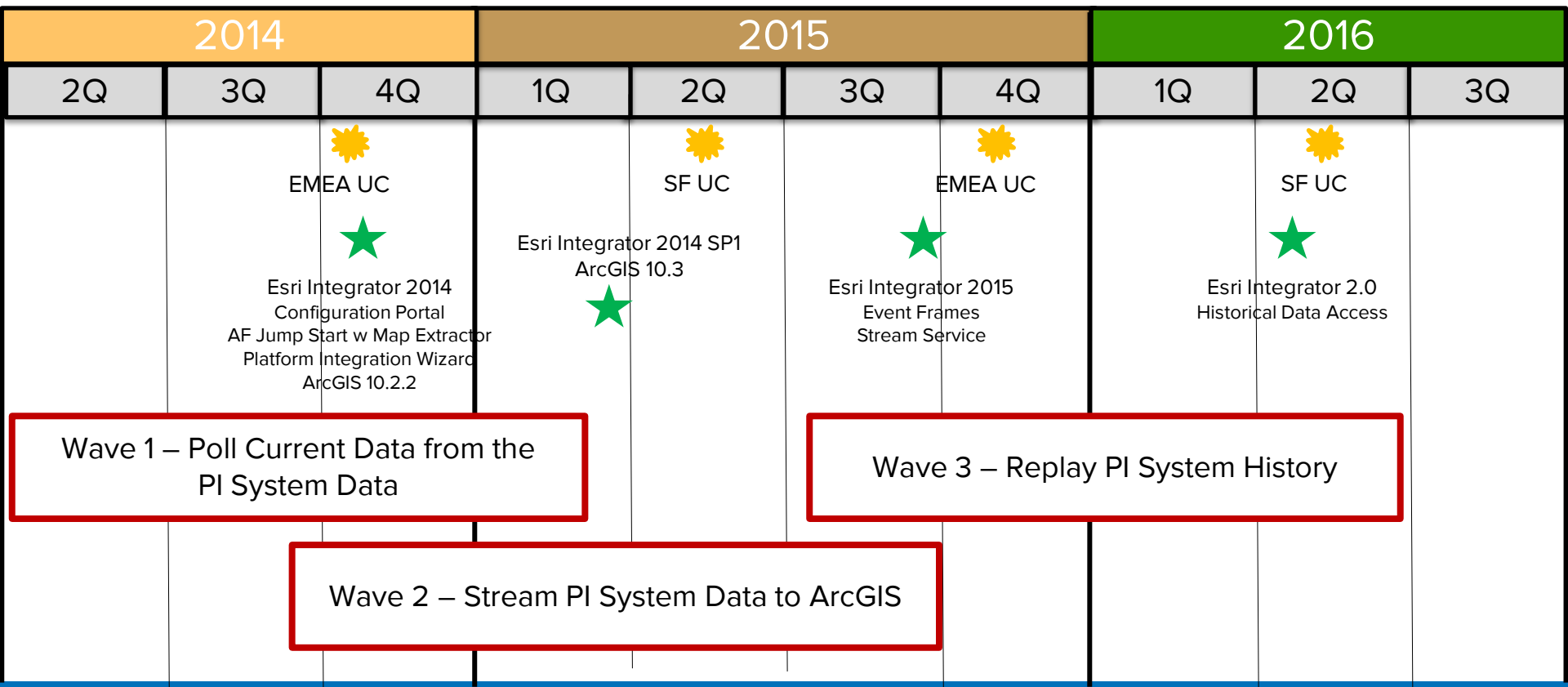


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PI Integrator for Esri ArcGIS - Roadmap

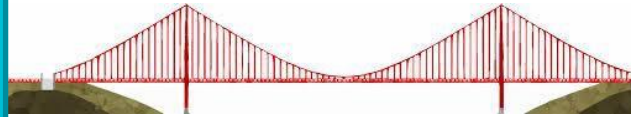
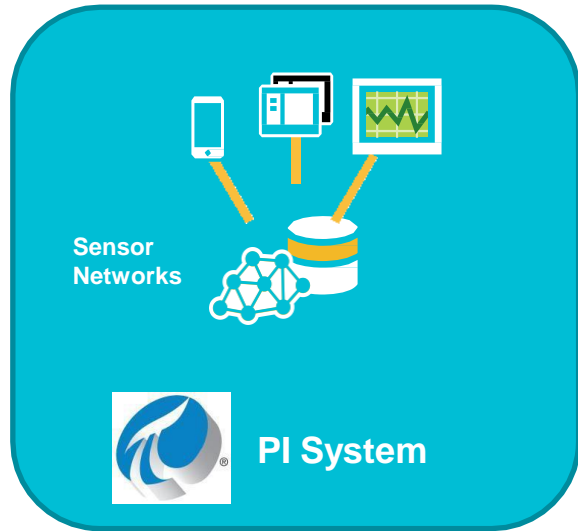


PI Integrator for Esri ArcGIS

1. Configurable Integration
2. Deliver real-time data across the organization on any device, any app, any time
3. Designed for non-technical users
4. Increase speed of deployment
5. Global support at enterprise scale
6. Greater agility to meet evolving business need



Bringing Space and Time Together



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Questions

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

State your
name & company



ありがとう

спасибо

gracias

Thank You

obrigado

danke

감사합니다

谢谢

merci

