



OSIsoft®

EMEA USERS CONFERENCE

LONDON, UNITED KINGDOM • OCT 16-19, 2017

TRANSFORM YOUR WORLD



Passport to EMEA — Expo Dinner Reception — TODAY

PASSPORT TO EMEA



FOLLOW THESE SIMPLE STEPS AND ENTER THE DRAWING TO WIN AN IPAD PRO!

1. Fill out the contact information below
2. Visit 12 (or more) OSIsoft Partner Booths and collect a sticker at each of them. **You MUST collect 12 different stickers.**
3. Hand the card in at the main registration desk to be entered to win.

NAME: _____

COMPANY: _____

TITLE: _____

EMAIL: _____

PHONE: _____



PASSPORT TO EMEA

HAND IN YOUR COMPLETED CARD AT THE REGISTRATION DESK BY WEDNESDAY AT 9:00 TO BE ENTERED TO WIN.

- 17:00 – 20:00
- Arora Ballroom and Foyer



OSIsoft®

EMEA USERS CONFERENCE

LONDON, UNITED KINGDOM • OCT 16-19, 2017

TRANSFORM YOUR WORLD





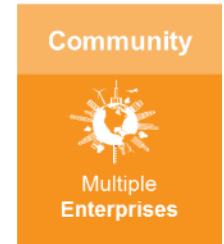
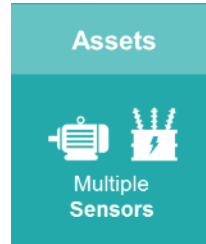
Customer Showcases

The Latest Products and Upcoming Releases
Ray Hall, VP Engineering

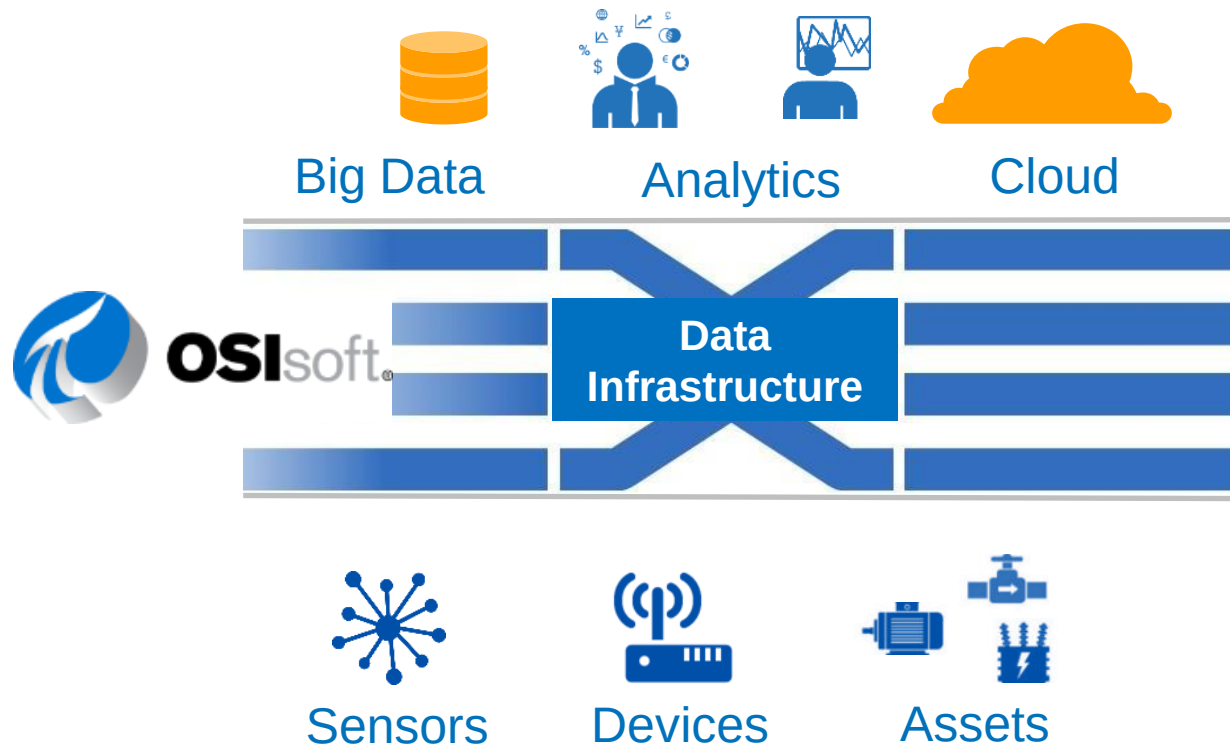


Our Mission

Empower people, industries and communities to **transform their world** using operational data.



Data Infrastructure for Digital Transformation



centrica

PI Integrator for BA



PI Vision 2017



Brüel & Kjær Vibro

PI Server 2017



PI Connectors

Erik Hedvall



Randy Chitwood



Brüel & Kjær Vibro



Emanuele Andrico

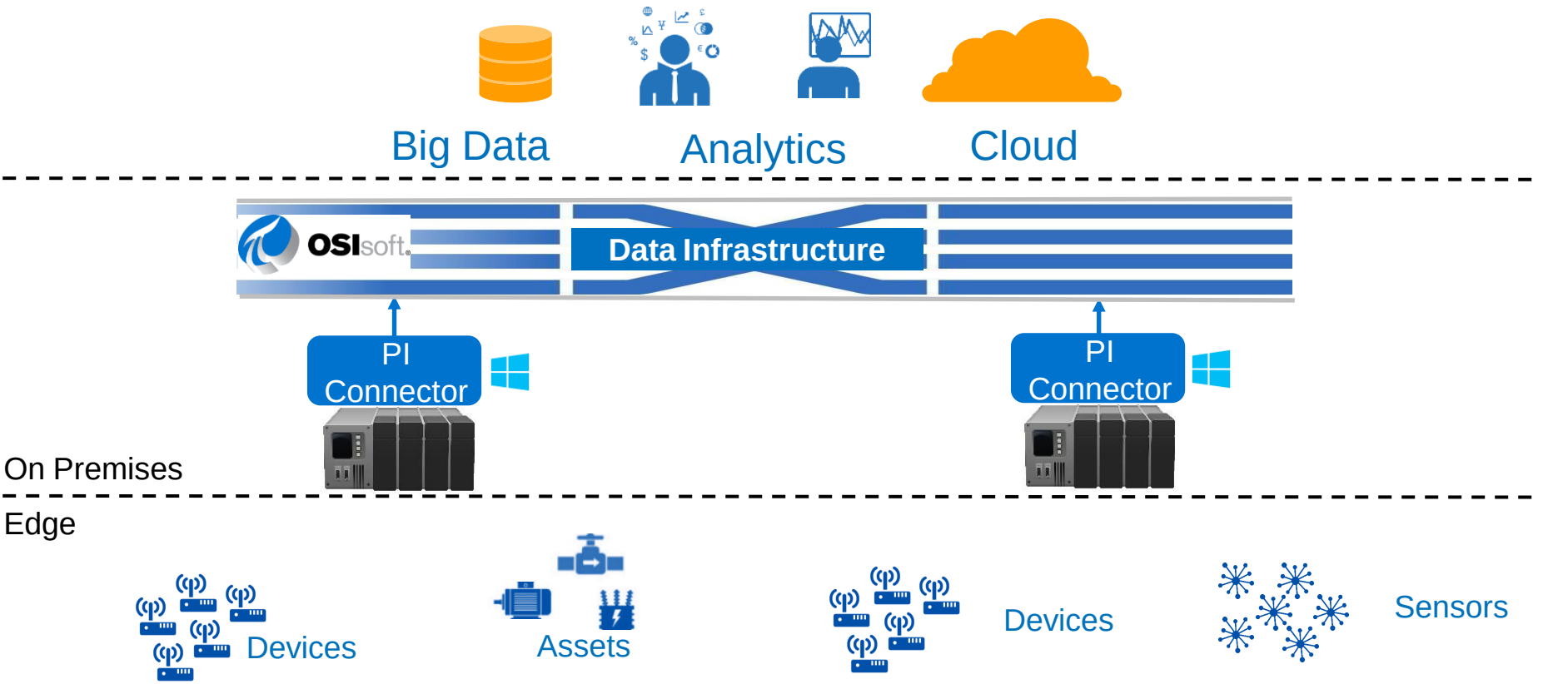


Martin Stanyon

centrica



OSIsoft Data Collection Technologies



Connectivity: Over 450 Interfaces and Connectors

CONNECTOR INNOVATIONS



Time



Flexible



Metadata



Speed



Embedded



Secure



SIEMENS
SIMATIC PCS 7



C Y G N E T

♥ a Weatherford Company



OPC UA

PI System

EtherNet/IP™

HART-IP™

IPMI UFL Ping

PI System Health



60870-5-104

<WITSML/>™
NOV



Featuring PI Connectors

Erik Hedvall

Senior Project Leader



SANDVIK
Coromant

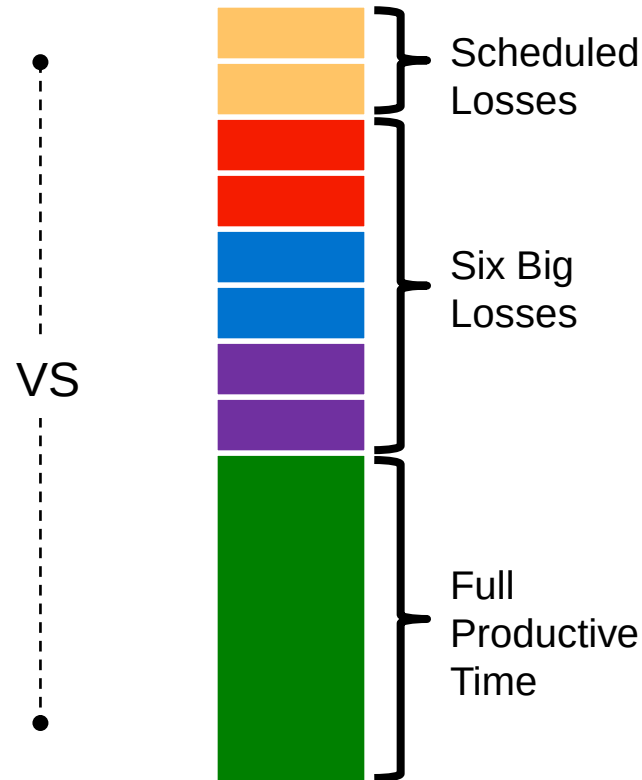
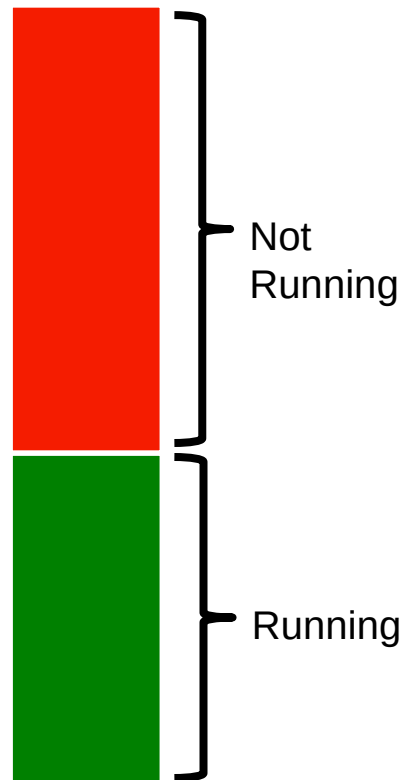
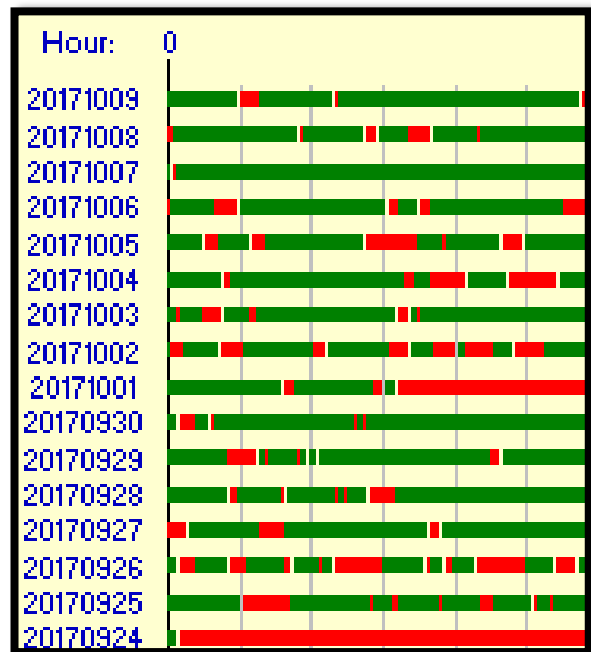
8,000
EMPLOYEES

SALES IN OVER

130
COUNTRIES
AROUND THE GLOBE



Our Objective – Standardize OEE



Challenge – Wide Variety of Machines

118

CNC Machines

2

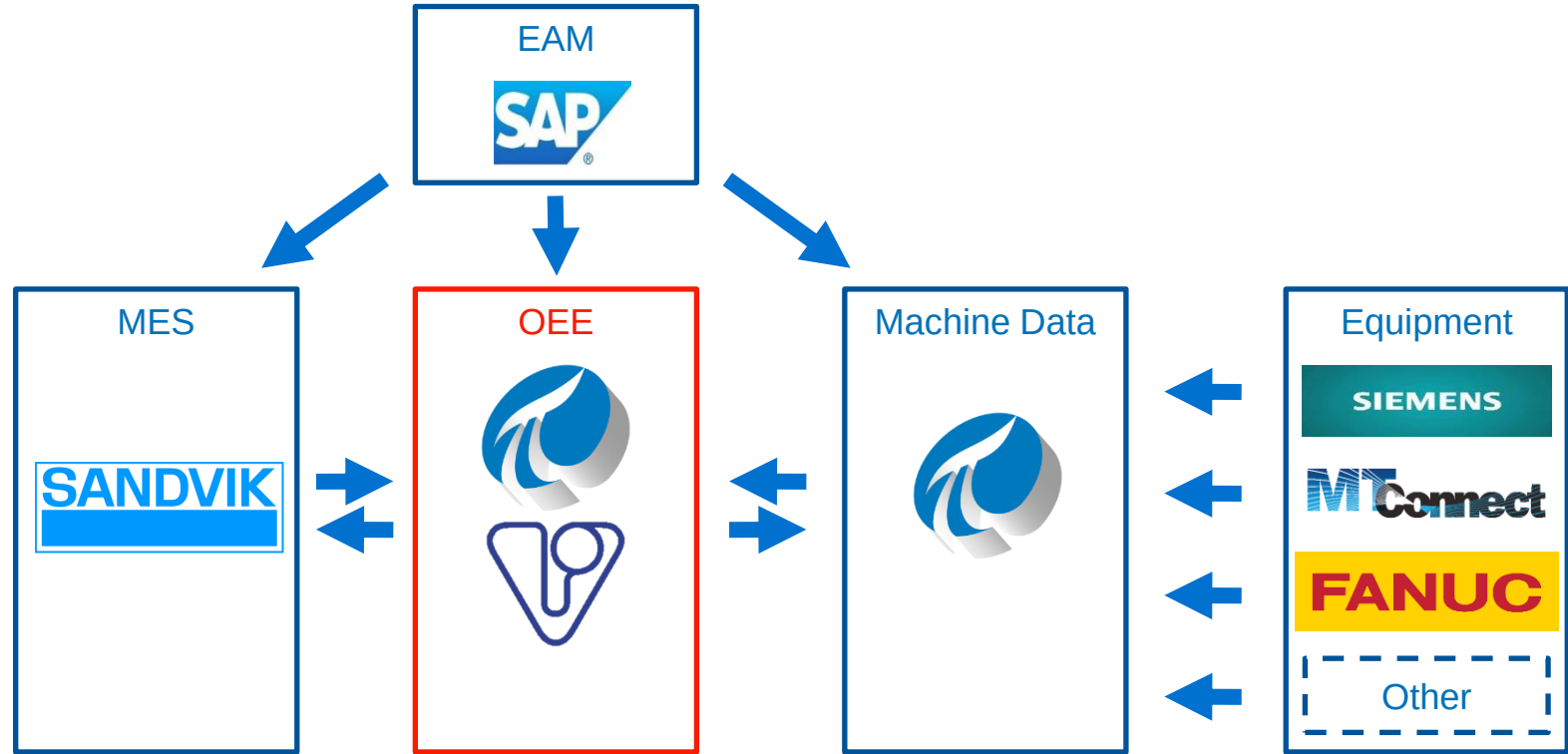
Sites

5 +

CNC Controllers

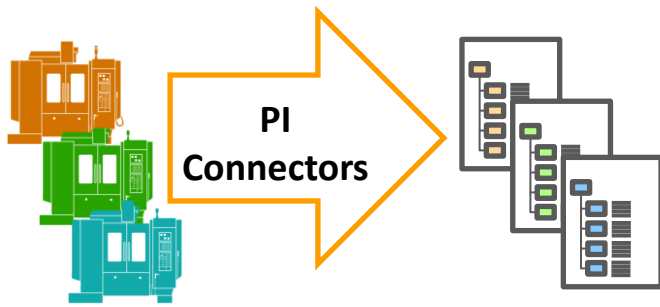


Solution – Our System Architecture



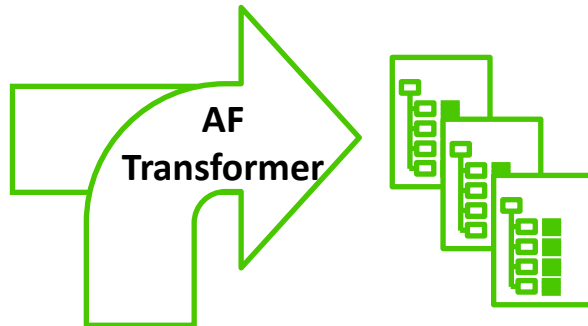
The Role of the PI System

Connect



Data Collection Manager

Standardize

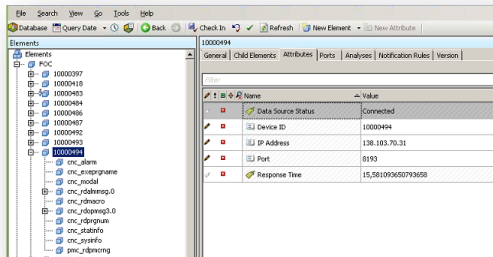
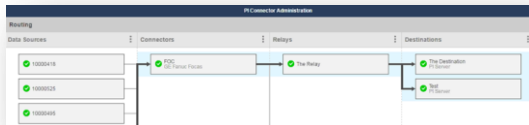


Standardized Templates

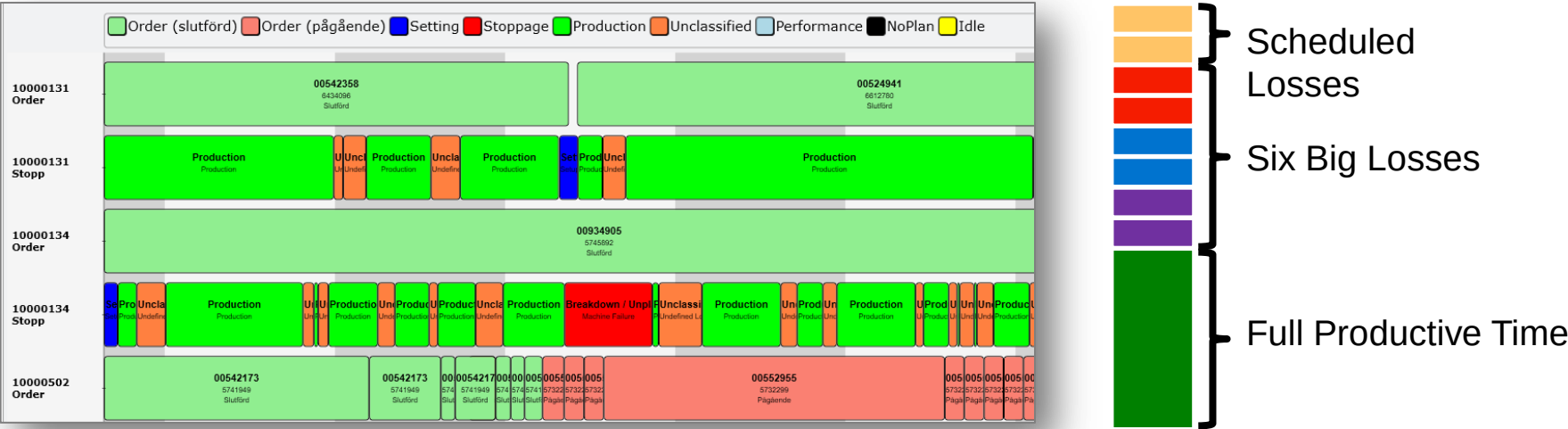
Deliver & Store



Standardized OEE Dashboard



Our OEE Dashboard



Improve Asset Utilization



Global and Local Improvements



Real Time Feedback



Les
Daley



Chris
Coen



Ivan
Datskov



Dan
Riddell



Kevin Shu



Bo Ning

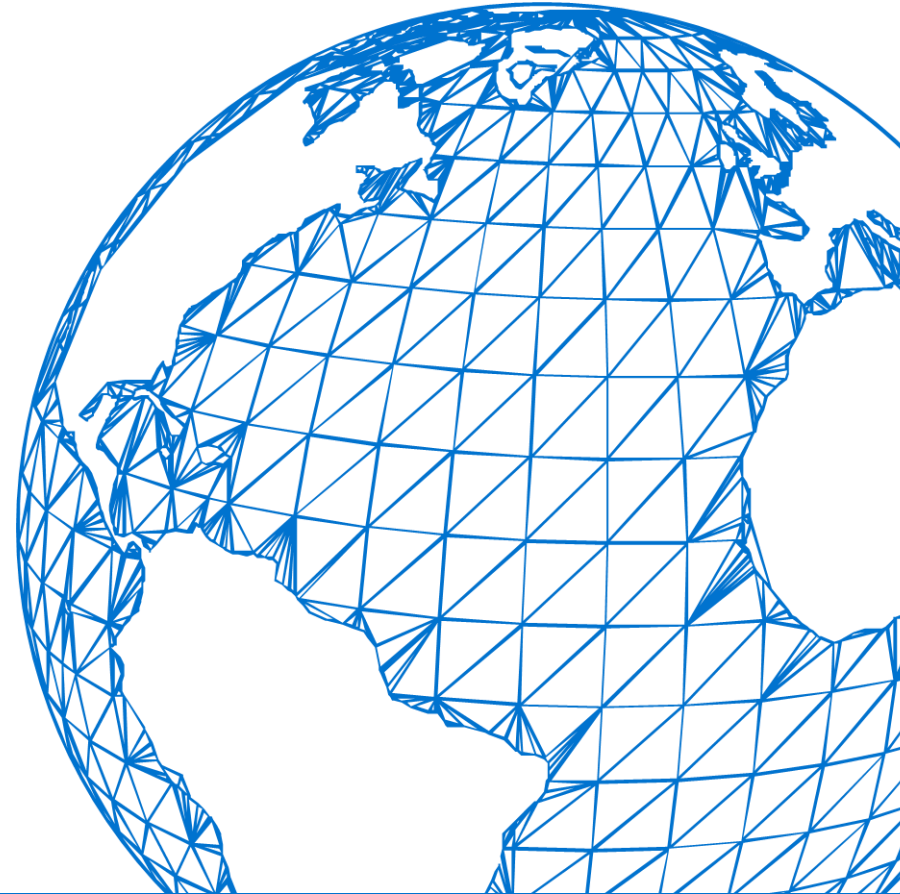


Navid
Farhadi

Our Next Steps

800 +
CNC Machines

20
Production Units



OSIsoft Data Collection Technologies Extended to the Edge



Big Data



Analytics



Cloud



PI
Connector

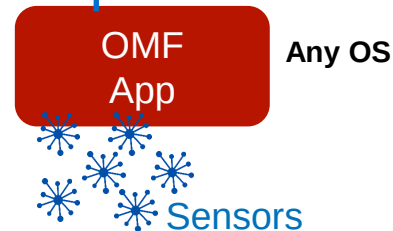
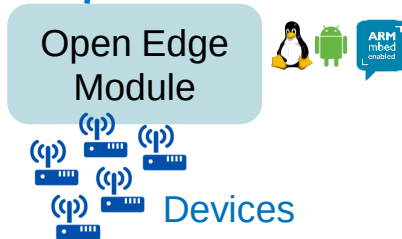
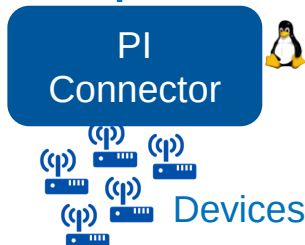


PI
Connector



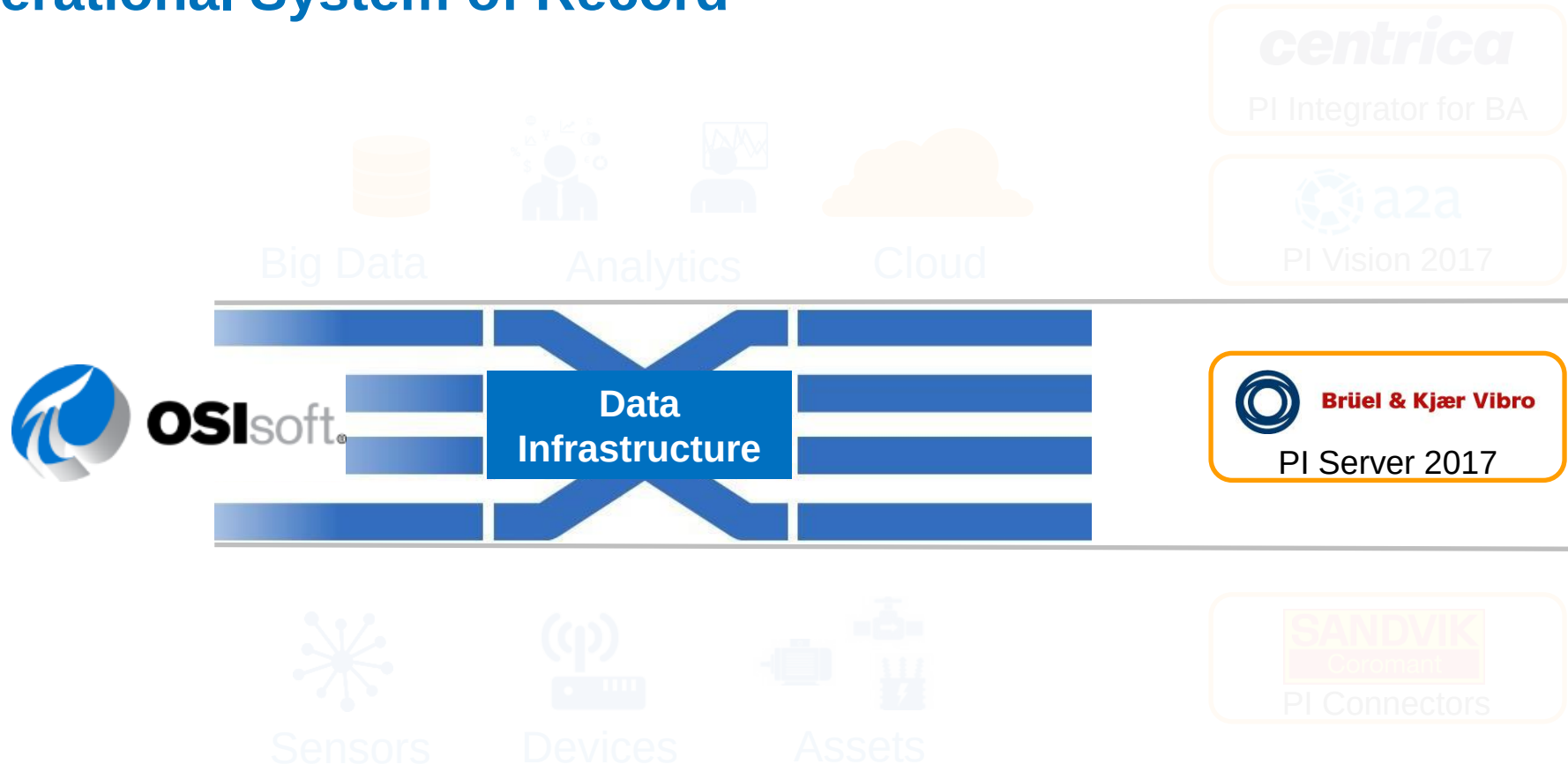
On Premises

Edge



Any OS

Operational System of Record



Featuring PI Server 2017

Randy Chitwood

Vice President - SETPOINT



Brüel & Kjær Vibro









Brüel & Kjær Vibro

SERIOUS ABOUT YOUR VIBRATION MONITORING?



MAYBE IT'S TIME YOU SERIOUSLY UPGRADE

If you're in the market for API 670-compliant condition monitoring and machinery protection, SETPOINT® system from Brüel & Kjær Vibro.

Designed and built by the very same engineers that designed the Bentley Nevada™ systems you're probably using right now, SETPOINT embodies extraordinary, game-changing capabilities that your incumbent system can only dream about.

Learn more on our informative website where you'll discover 15 compelling reasons to make SETPOINT your next monitoring system - and leave yesterday's technology behind.

www.bkvb.com/setpoint

- Embedded flight recorder with up to two full years of complete OI data.
- Redundant data storage right in the rack on independent SSDs (up to 480 GB).
- Captures data whenever it changes - same lossless compression concepts as video streaming.
- Full integration with OIsoft P1 System® eliminates the need for separate software like GE's System 1™.
- Truly universal hardware - a single module supports more than 45 different channel types, including aeroderivatives, recip and hydro.

Visit us at Booth 3049
Turbomachinery • Dec 12-14 • Houston



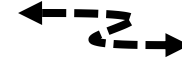
**VIBRATION
DATA**



~~VIBRATION~~
~~DATA~~

1

Establish physical connection
from rack(s) to PI Server..



2

Launch SETPOINT-to-PI Adapter S/W
to automatically build AF hierarchy
and map tags...



MACHINES



File Home

 Add  Edit  Delete

 Check Connections  Import CMS DB

Edit Tools

Status	Check IP Address	PI Server
 Stop  Demonet1 (5.0.1517)  AF	192.168.0.103	DEMONET_PI

DEMONET_PI\DemoNet - PI System Explorer Legacy 32-bit (Administrator)

File Search View Go Tools Help

Database Query Date Back Refresh New Element New Attribute

Search Elements

Elements

Elements

Demonet1

- Temperature
- Temperature
- Turbine Axial
- Turbine Vib
- SPEED
- TIB
 - Bearing TIBY 63VE2902A - TIBX 63VE2902B
 - TIBX 63VE2902B
 - 1X Amplitude
 - 1X Phase
 - 2X Amplitude
 - 2X Phase
 - Async Waveform
 - Bandpass Disp 1
 - Direct
 - Gap
 - nX Amplitude
 - nX Phase
 - Speed
 - Sync Waveform
 - TIBY 63VE2902A
- TOB
- Setpoint Racks
 - Setpoint - PI Adapter.DEMONET_PI
 - Demonet1
 - Diagnostics
 - System Status

Element Searches

Direct

General Child Elements Attributes Ports Analyses Notification Rules Version

Filter

Name	Value
Alert	--
Alert Method	Over
Alert Over	6 mil
Alert Under	0 mil
Danger	--
Danger Method	Over
Danger Over	8 mil
Danger Under	0 mil
Data	0.02961949 mil
Data Status	2
Data Status Mask	201326658
Is Primary	True
Maximum	10 mil
Measurement Index	0
Measurement Status	2
Measurement Type	Direct
Measurement Type Id	dce1654e-0968-4a7a-b418-fa250a571d4a
Minimum	0 mil
N	0
Scale Id	fs08c7d1-c18c-49c3-a43a-db9ec72699fc
ScaledData	0.1480974 mil
Slowroll Data	0.02961949 mil
Speed Reference	Speed
Subunit	pp

Name: Data

Description: Value

Properties: <None>

Categories:

Default UOM: <None>

Value Type: Single

Value: 0.02961949 mil

Data Reference: PI Point

Settings...

\\DEMONET_PI\Demonet1.3.2.Direct.0;UOM=mil

3

Marvel at just how easy that was...

4

View collected data with PI Vision and SETPOINT CMS Display...

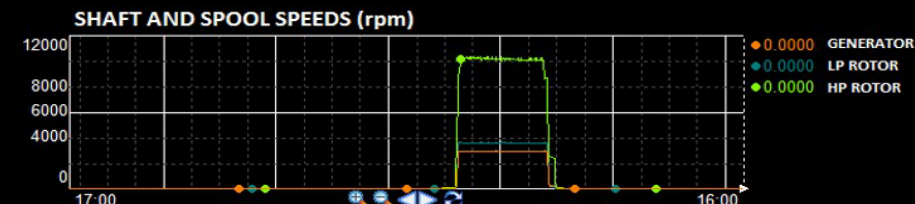
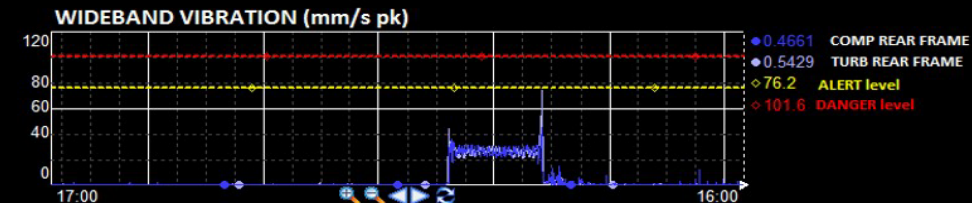
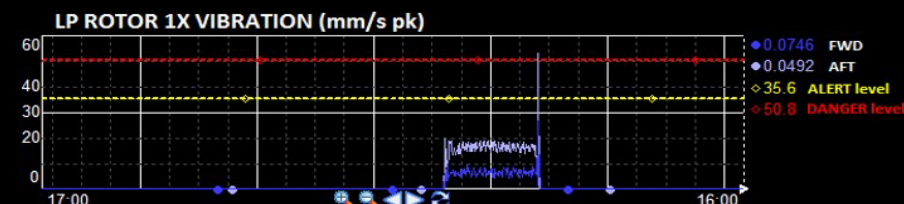
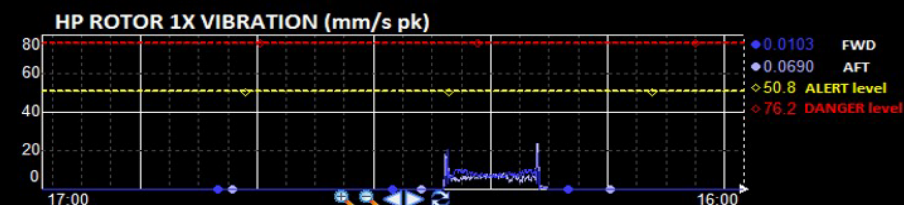
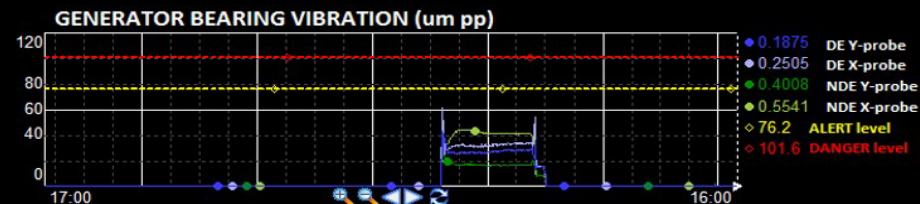
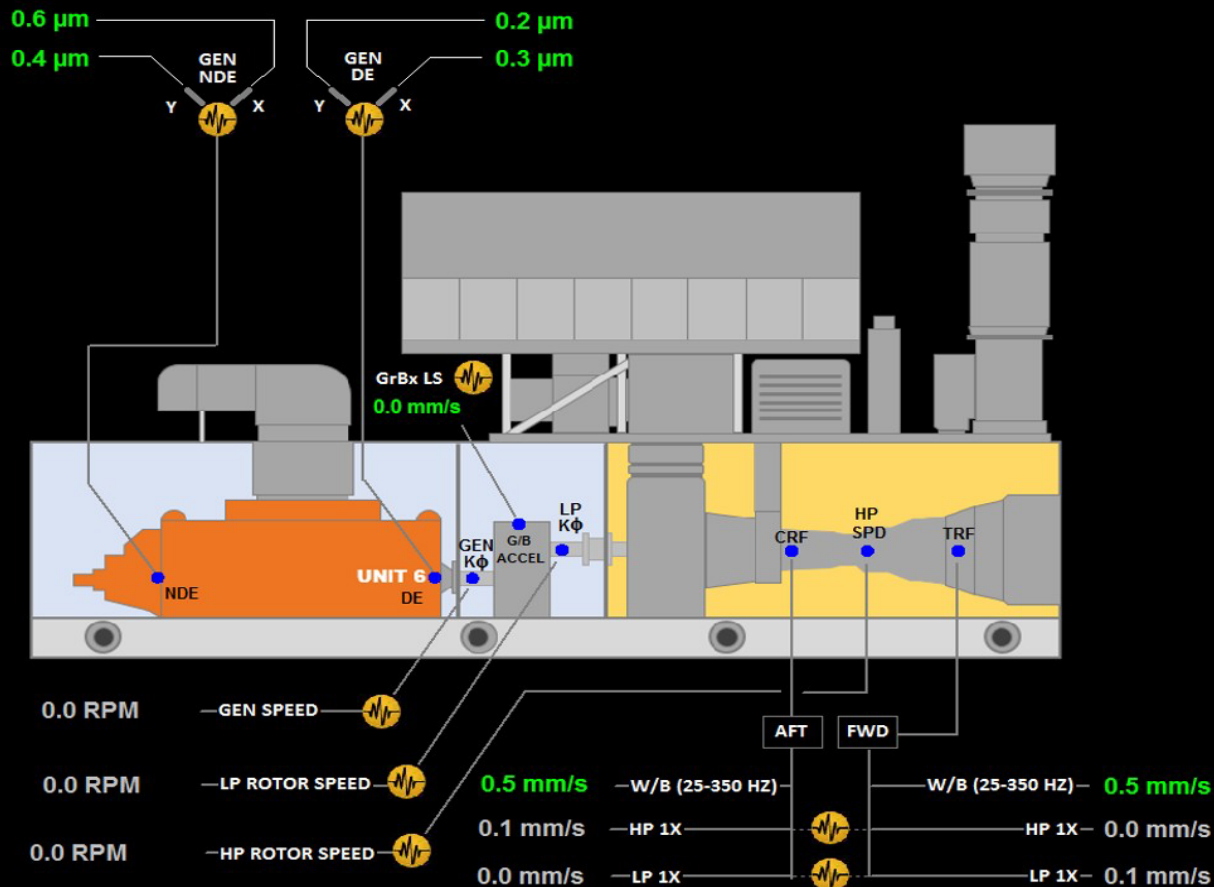
Limits

Forecasts

Southmore Power Station – Unit 6

RACK CONNECTION STATUS: 05/23/2017 4:39:41.38875 PM 1

SETPOINT™
CONDITION MONITORING SOFTWARE



File Home View Plot Tell me what you want to do

Select Points Trend Data Table Orbit Time Bode Polar Shaft Spectrum Waterfall Cascade Crank Angle Displace Volume Rod Compressor Map Reference Data Add Reference Compensate Overlay

Plots Adjust

Navigation

Assets

Unit 6

Points

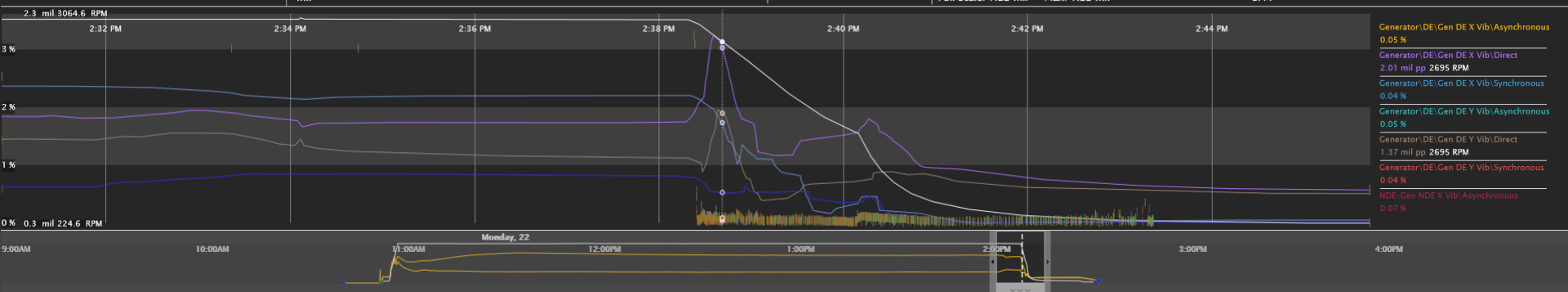
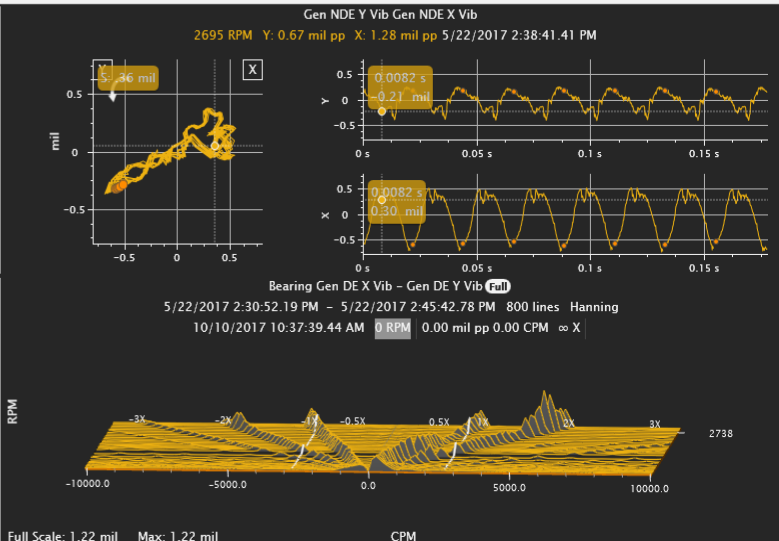
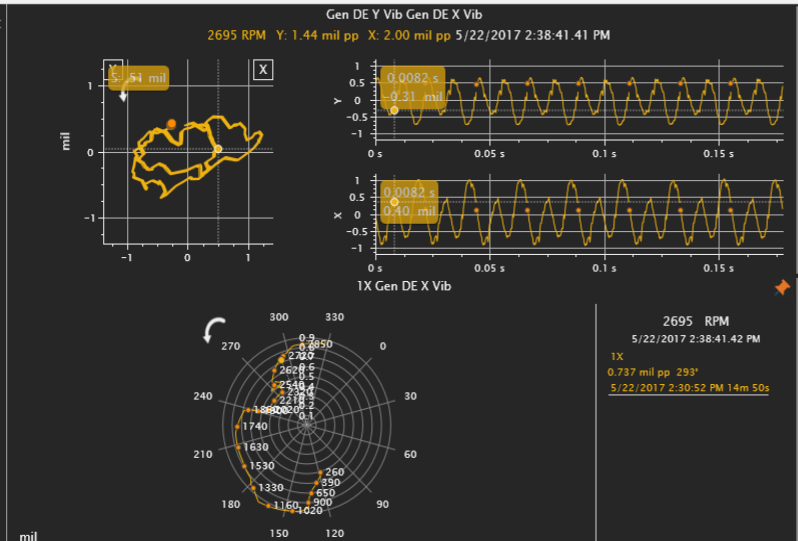
☒ Gearbox Output ☒ Gen DE X Vib ☒ Gen DE Y Vib
☒ Gen NDE X Vib ☒ Gen NDE Y Vib ☒ Generator KPH
☒ GrBx LP Rotor Speed ☒ HP Rotor Speed
☒ HP Rotor Vib AFT ☒ HP Rotor Vib FWD
☒ LP Rotor Vib AFT ☒ LP Rotor Vib FWD

Attributes

Selected

Unit 6\Generator\DE\Gen DE X Vib
 Unit 6\Generator\DE\Gen DE Y Vib
 Unit 6\Generator\NDE\Gen NDE X Vib
 Unit 6\Generator\NDE\Gen NDE Y Vib

Clear All

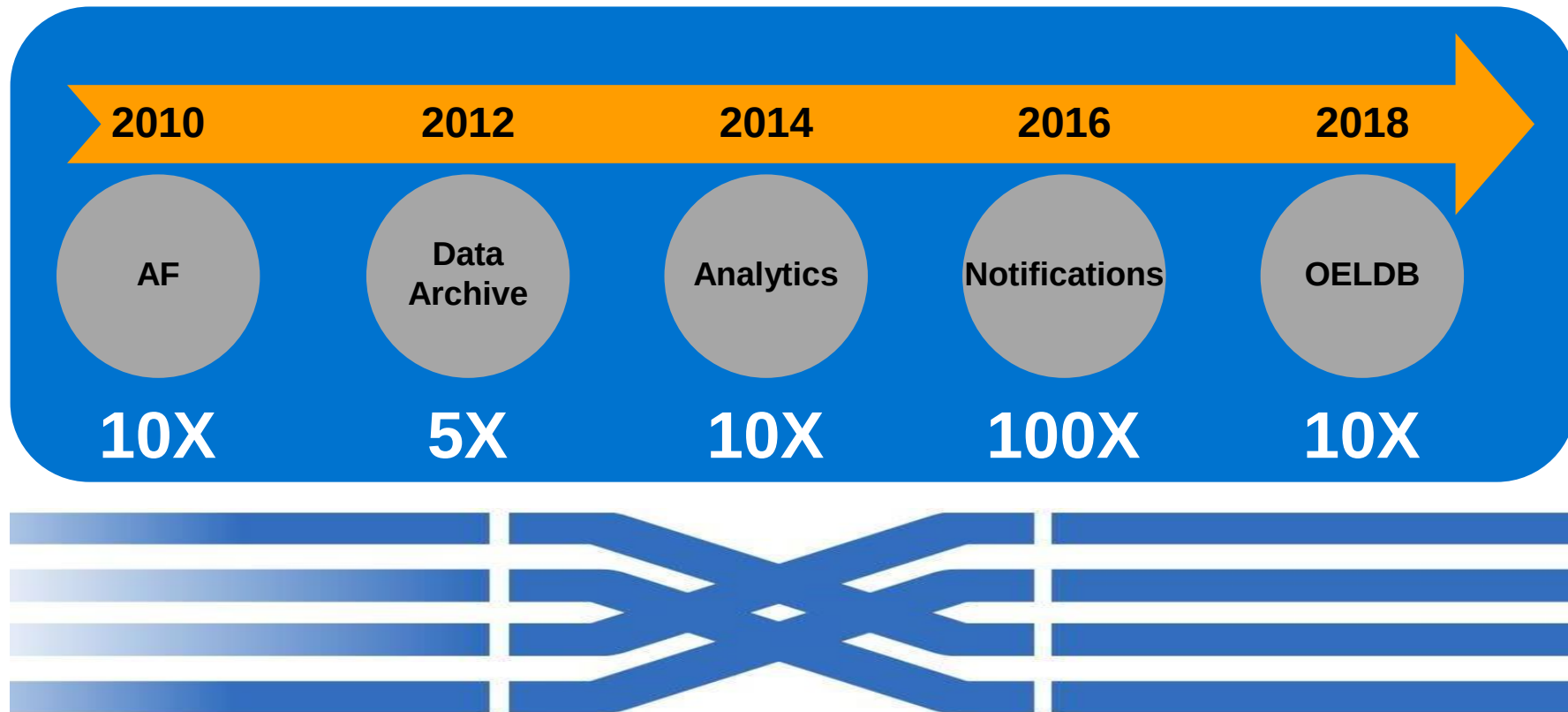




 **BASF**

The Chemical Company

Expanding the PI System



Utilizing Data with Visualization and Analytics



Big Data



Analytics



Cloud



centrica

PI Integrator for BA



PI Vision 2017



OSIsoft.

Data
Infrastructure



Brüel & Kjær Vibro

PI Server 2017



Sensors



Devices



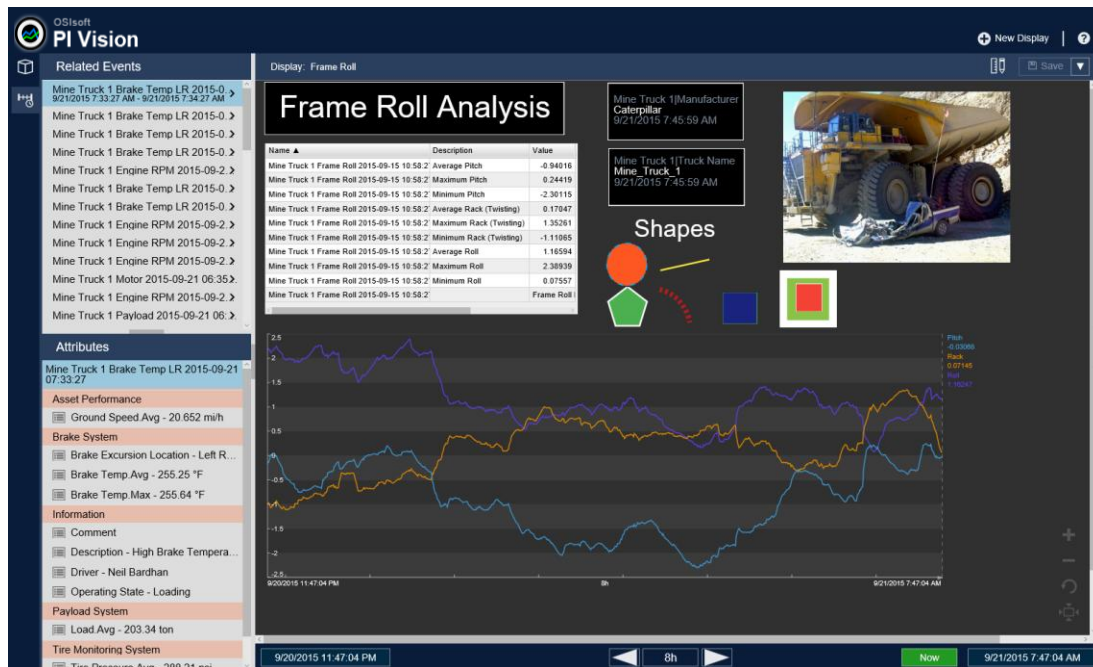
Assets



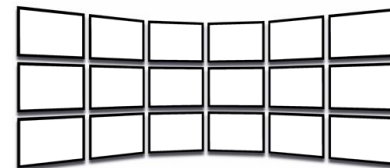
PI Connectors

Next Generation Integrated Visualization

Process monitoring | Ad-hoc analytics | Dashboards | Data entry



Anywhere



Time series | Events | Assets | Analytics | Notifications



Featuring PI Vision 2017



Emanuele Andrico
IT Manager

A2A Company

A2A is the largest Italian multi-utility company, a leader in the energy, environment, heat and networks sectors.

- **Italian leader** in environmental services & district heating
- **Second-largest** domestic producer of energy, with a product mix geared to renewable sources
- **Second-largest** operator in electricity distribution networks
- **One of the largest** in gas and water cycle networks



Hydroelectric Power Plants: Managing water...



at a massive scale!

Goal: Manage water flow and energy production



Buy & sell energy
onto market

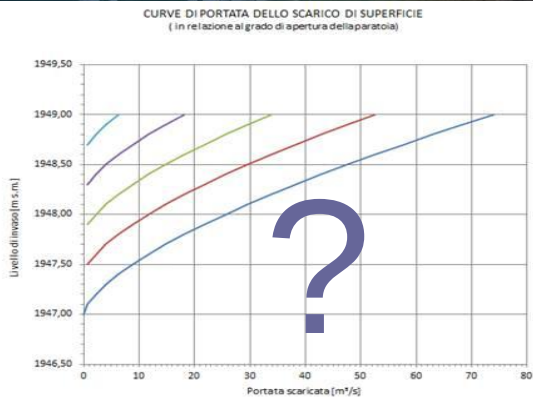
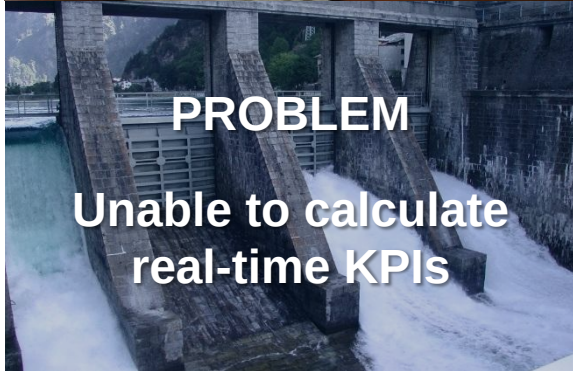
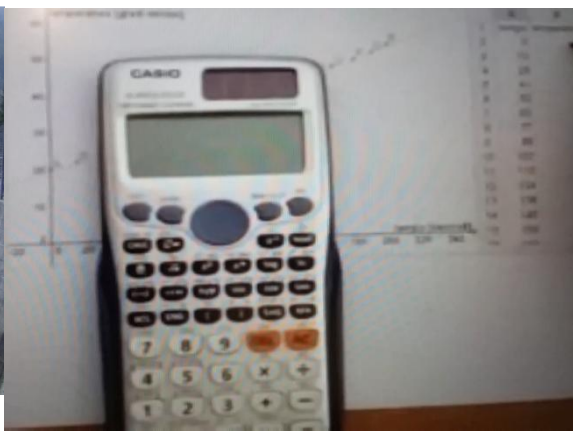
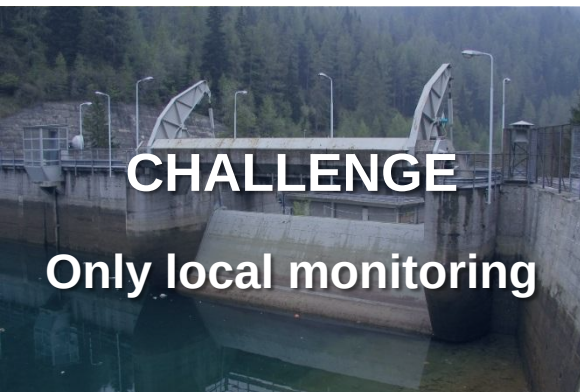


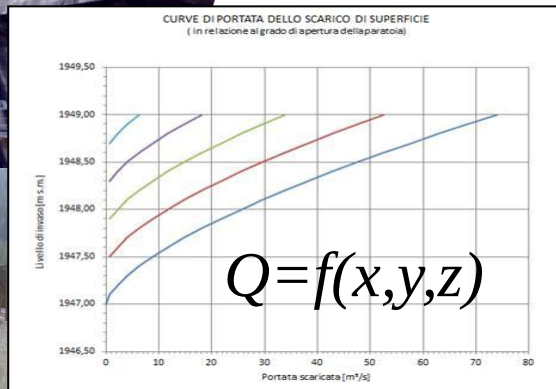
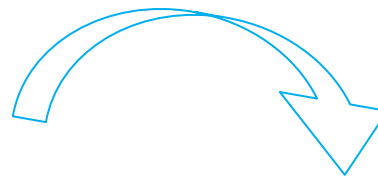
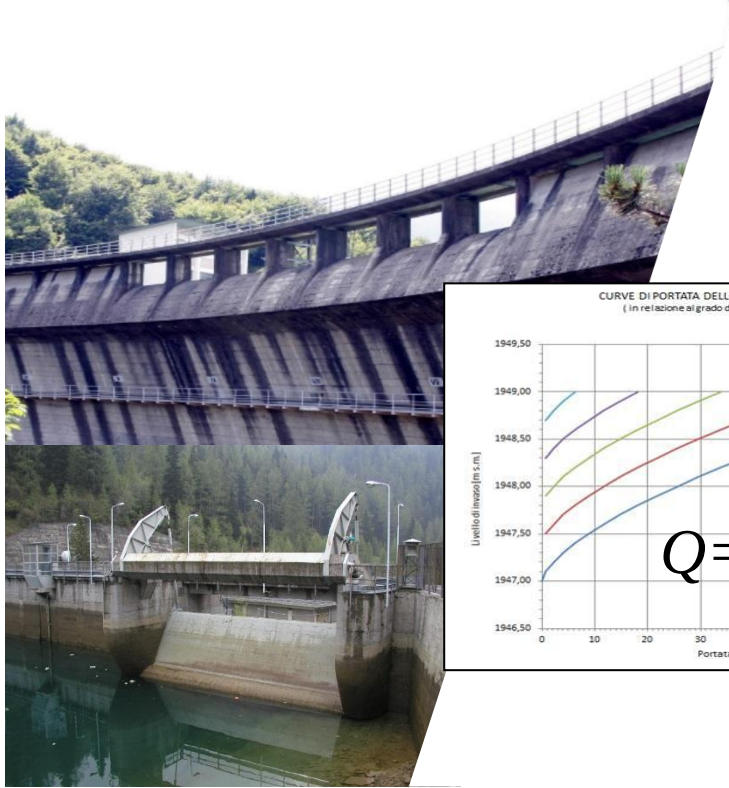
Predict & control
power generation



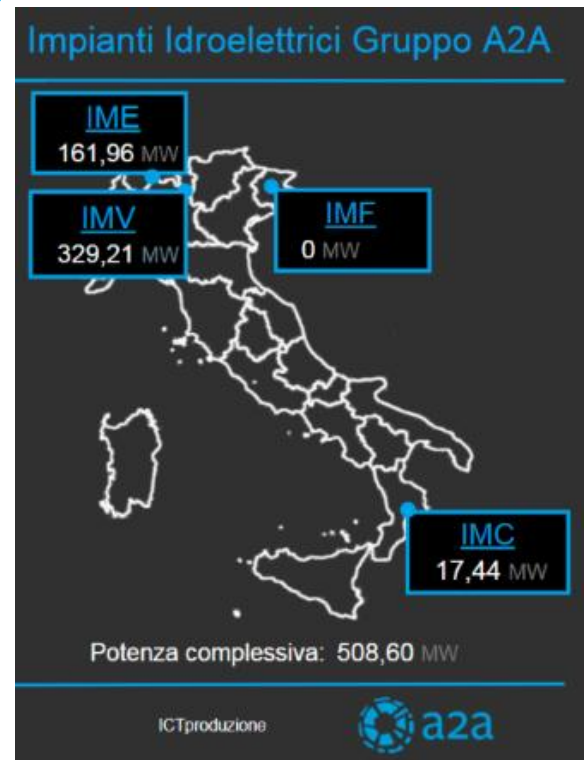
Closer we are to
target, the better

How to manage distributed hydro plants when 500 km away?

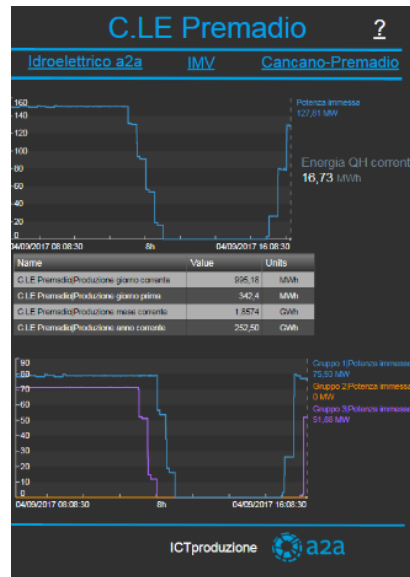
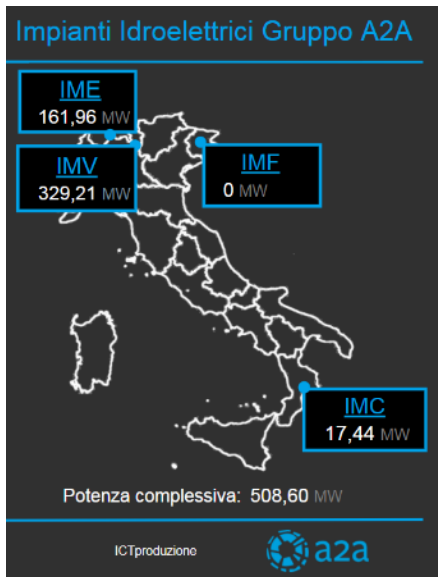




HYDRO PLANT PORTAL



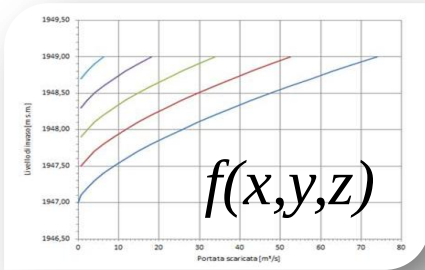
Quickly see all real-time information with Hydro Plant Portal



PI System Components



Real Time Data

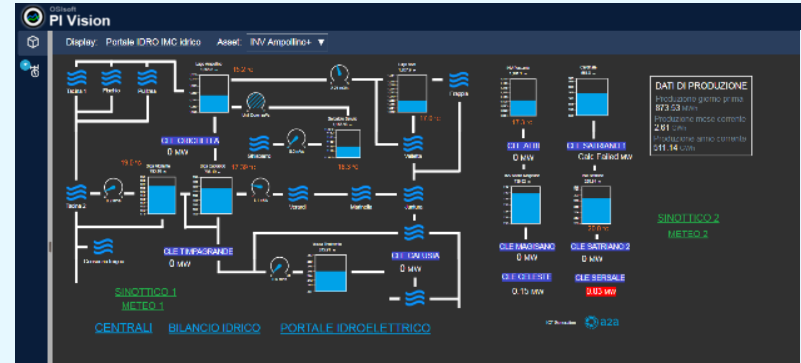


Model Function

Data
Archive

Asset
Framework

PI Server



PI Vision: Real-Time Mobile KPI Monitoring

PI Interface for OPC:
Control optimization



Benefits



Give all users **secure access** to **real-time data**

01

No special software on user's PC or smart phone

02

See **critical KPIs** that you can **trust**

03

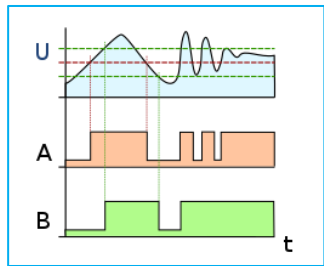
Produce energy efficiently to **save water & improve revenue**

04

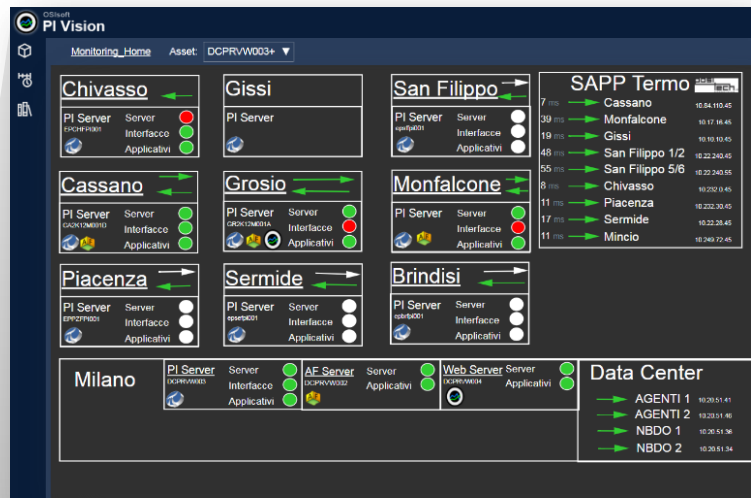
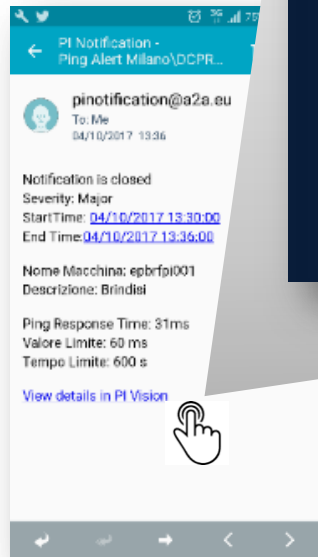
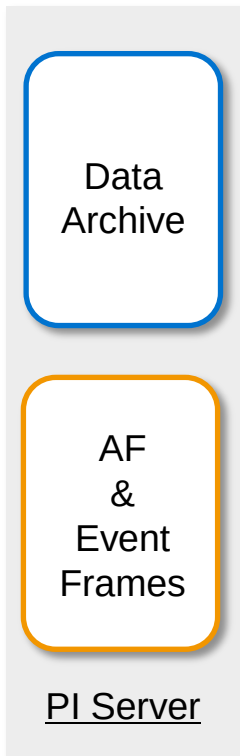
Supporting project monitors information communication technology (ICT)



CPU, Ping, Health status



Events & triggers



Notification for
Mobile Alerting &
Troubleshooting



Future plans

Add forecasting data for

- Dam level and flow rates
- Energy predictions

One Vision:

A unified visualization infrastructure to support your needs across the enterprise in a seamless, powerful, extensible environment.



Advanced Integrations – Supported Systems

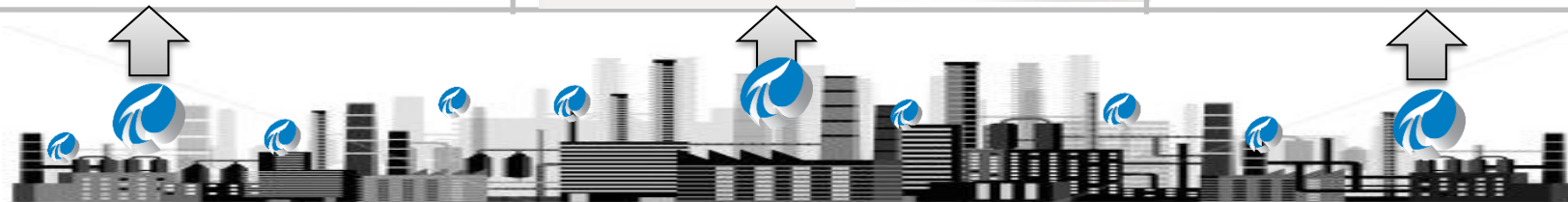
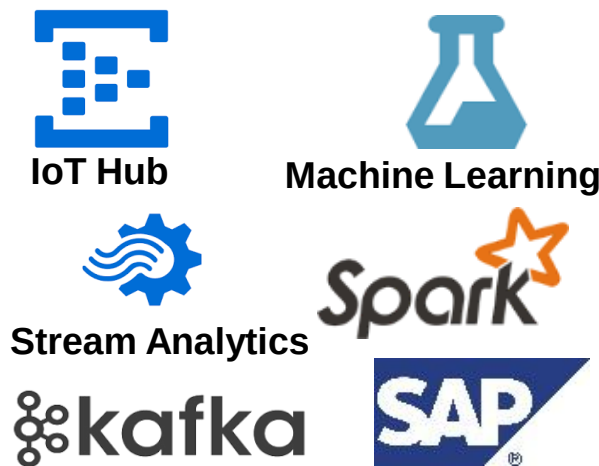
Visual Analytics



Data Warehouse / Data Lake



Streaming Analytics – 2017



Featuring PI Integrator for BA

Martin Stanyon

Data and Analytics Manager

centrica



We are an energy and services company

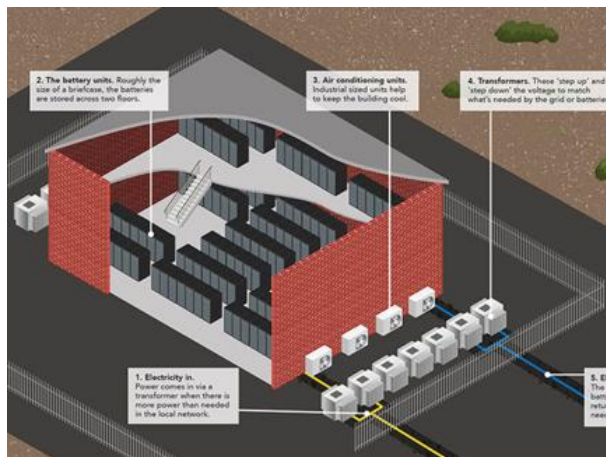
Everything we do is focused on
satisfying the changing needs of our
customers

Existing Plant



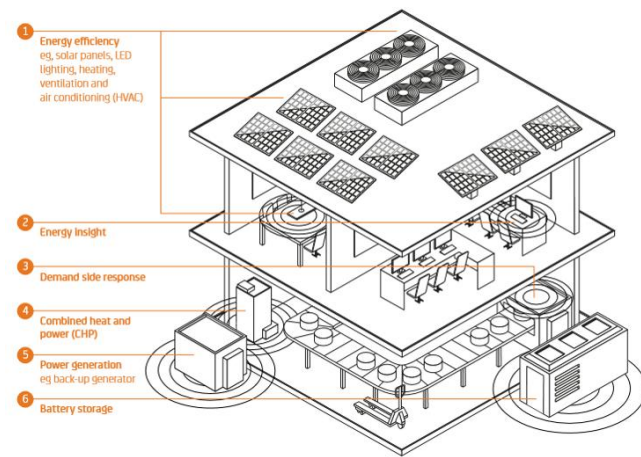
Barry Power Station

Construction Projects



Roosecote 49MW
Battery

Distributed Energy



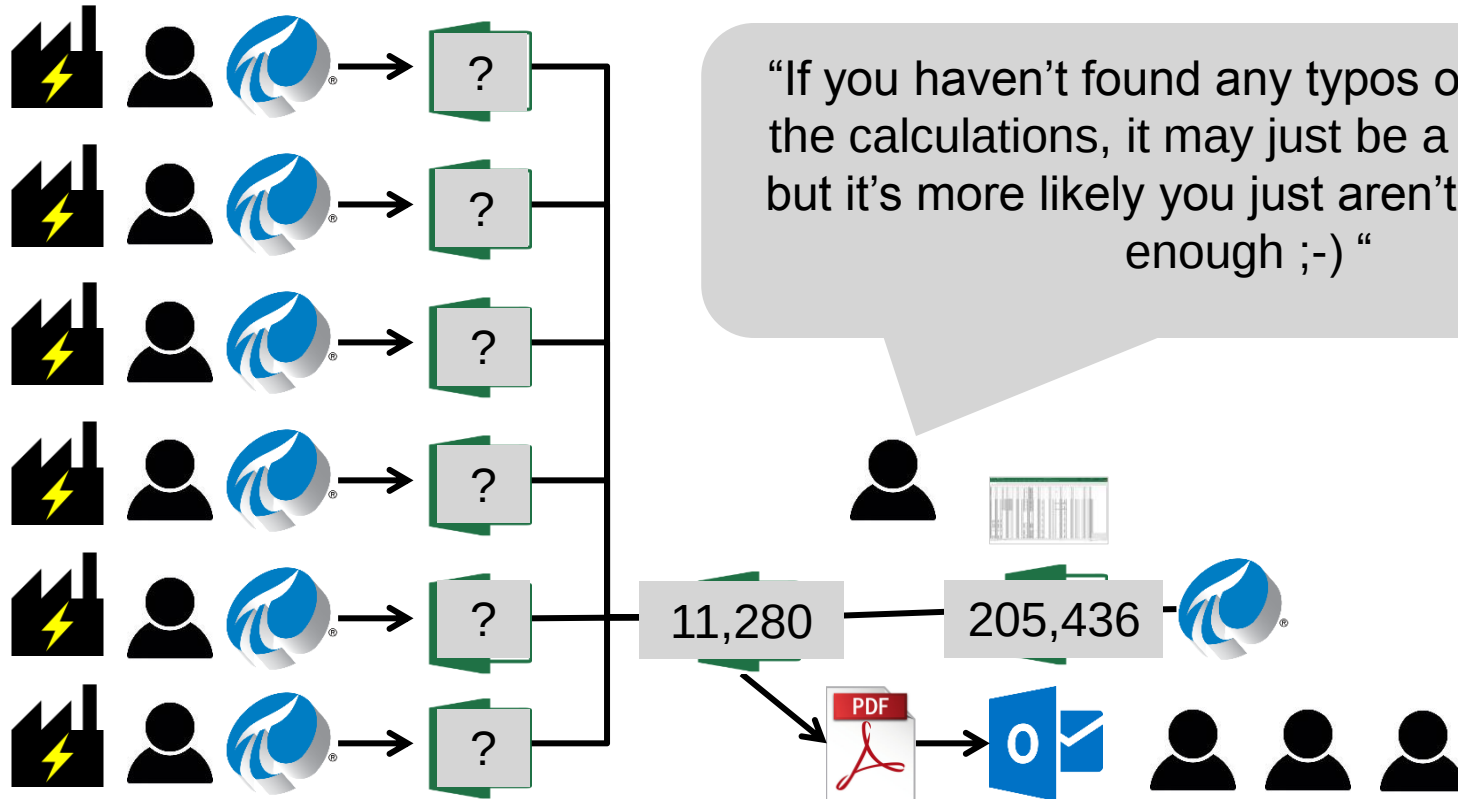
The Challenge

centrica



The Challenge – Monthly Reporting

centrica





FileHomeInsertPage LayoutFormulasDataReviewViewDeveloperPI DataLinkPI BuilderPower PivotDataGeniTell me what you want to do

A7: =A8-A4

	A	B	C	D	E	F	G	H	I	J
7	42248	Metered Active HH	Electrical Export	Electrical Import	Tag not found	Gas Volume	Tag not found	Lower CV	Tag not found	Higher CV
135	03/09/2015 16:00	-1.200000048	0	0	0	0	35.62799835	35.62799835	39.47999954	39.4799
136	03/09/2015 16:30	-1.179999948	0	0	0	0	35.61999893	35.61999893	39.47100067	39.4710
137	03/09/2015 17:00	-1.149999976	0	0	0	0	35.57500076	35.57500076	39.42300034	39.4230
138	03/09/2015 17:30	-1.159999967	0	0	0	0	35.57600021	35.57600021	39.42399979	39.4239
139	03/09/2015 18:00	-1.149999976	0	0	0	0	35.39300156	35.39300156	39.22700119	39.2270
140	03/09/2015 18:30	-1.149999976	0	0	0	0	35.32099915	35.32099915	39.15000153	39.1500
141	03/09/2015 19:00	-1.149999976	0	0	0	0	35.34899902	35.34899902	39.18099976	39.1809
142	03/09/2015 19:30	-1.149999976	0	0	0	0	35.34500122	35.34500122	39.17599869	39.1759
143	03/09/2015 20:00	-1.149999976	0	0	0	0	35.35100174	35.35100174	39.18299866	39.1829
144	03/09/2015 20:30	-1.149999976	0	0	0	0	35.33900007	35.33900007	39.16999817	39.1699
145	03/09/2015 21:00	250	250	0	0	0	35.47999954	35.47999954	39.32199986	39.3219
146	03/09/2015 21:30	250	250	0	0	0	35.57400131	35.57400131	39.42300034	39.4230
147	03/09/2015 22:00	-1.149999976	0	0	0	0	35.60699844	35.60699844	39.45899963	39.4589
148	03/09/2015 22:30	-1.149999976	0	0	0	0	35.60699844	35.60699844	39.45899963	39.4589
149	03/09/2015 23:00	-1.149999976	0	0	0	0	35.58499908	35.58499908	39.43500137	39.4350
150	03/09/2015 23:30	-1.149999976	0	0	0	0	35.61600113	35.61600113	39.46799985	39.4679
151	04/09/2015 00:00	-1.149999976	0	0	0	0	35.61800003	35.61800003	39.47100067	39.4710
152	04/09/2015 00:30	-1.149999976	0	0	0	0	35.61500168	35.61500168	39.46699905	39.4669
153	04/09/2015 01:00	-1.149999976	0	0	0	0	35.61999893	35.61999893	39.47299957	39.4729
154	04/09/2015 01:30	-1.149999976	0	0	0	0	35.61600113	35.61600113	39.46799985	39.4679
155	04/09/2015 02:00	-1.149999976	0	0	0	0	35.60699844	35.60699844	39.45800018	39.4580
156	04/09/2015 02:30	-1.149999976	0	0	0	0	35.61600113	35.61600113	39.46900177	39.4690
157	04/09/2015 03:00	-1.149999976	0	0	0	0	35.61999893	35.61999893	39.47299957	39.4729
158	04/09/2015 03:30	-1.149999976	0	0	0	0	35.61700058	35.61700058	39.47100067	39.4710
159	04/09/2015 04:00	-1.149999976	0	0	0	0	35.62300111	35.62300111	39.47800064	39.4780
160	04/09/2015 04:30	-1.149999976	0	0	0	0	35.62300111	35.62300111	39.47900009	39.4790
161	04/09/2015 05:00	-1.149999976	0	0	0	0	35.62400055	35.62400055	39.47900009	39.4790
162	04/09/2015 05:30	-1.149999976	0	0	0	0	35.59400177	35.59400177	39.44699986	39.4469
163	04/09/2015 06:00	-1.149999976	0	0	0	0	35.59200085	35.59200085	39.44500015	39.4450

1,521 Hard-coded cells!

EOM SummaryPI input

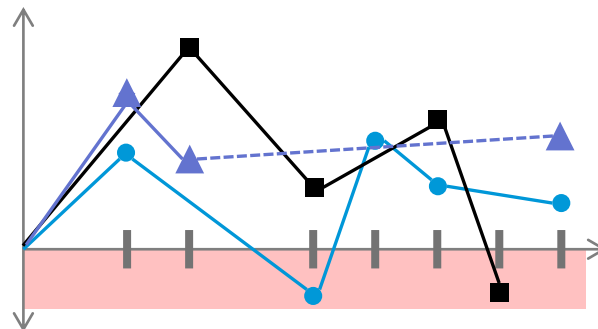
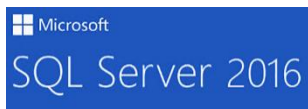
ReadyCalculate

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That's not all

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Uneven spacing
Out-of-range values
Different start times
Communication failure
and more...

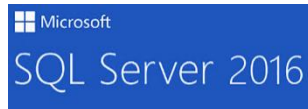
	●		▲
		■	▲
	●	■	?
	●		?
	●	■	?
		■	?
	●		▲

Challenge

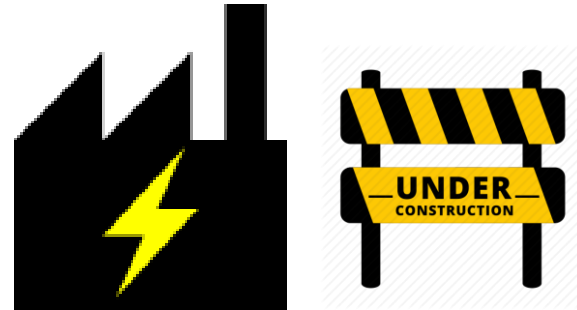
Join operational data
with relational data

That's not all

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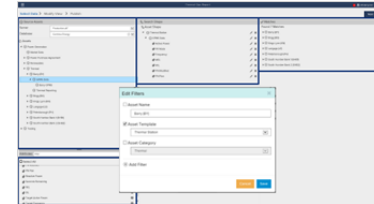
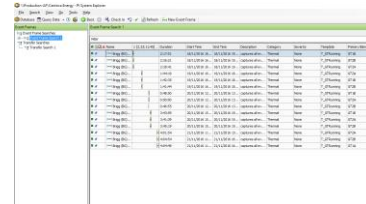
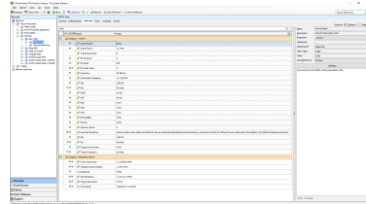
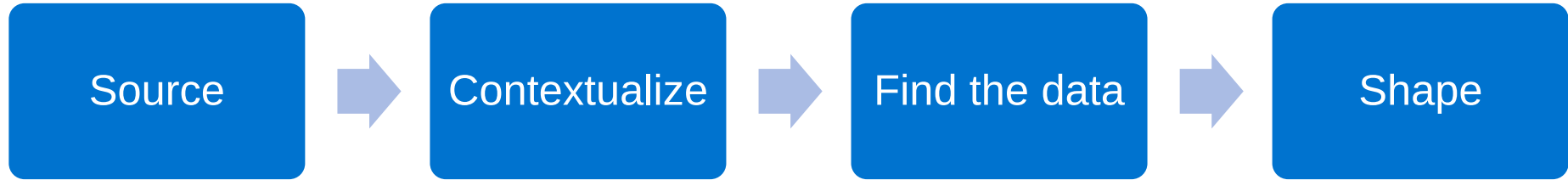


Our Businesses Change



The Solution – Data Preparation

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[Select Data](#) > [Modify View](#) > [Publish](#)[Next](#)

Source Assets

Server

Database

Assets

- Power Generation
 - Market Data
- Power Purchase Agreement
- Renewables
- Thermal
 - Barry (BY)
 - GPMS Data**
 - Barry GPMS
 - Thermal Reporting
 - Brigg (BG)
 - Kings Lynn (KN)
 - Langage (LE)
 - Peterborough (PH)
 - South Humber Bank 1 (SHB1)
 - South Humber Bank 2 (SHB2)
- Trading

Attributes

Select All

- PN Plan
- Reactive Power
- Seconds Remaining
- SEL
- SIL
- Target Active Power
- Target Frequency

Search Shape

Asset Shape

- Thermal Station
 - GPMS Data
 - Active Power
 - FR Mode
 - Frequency
 - MEL
 - MIL
 - PN Modified
 - PN Plan



Matches

Found 7 Matches

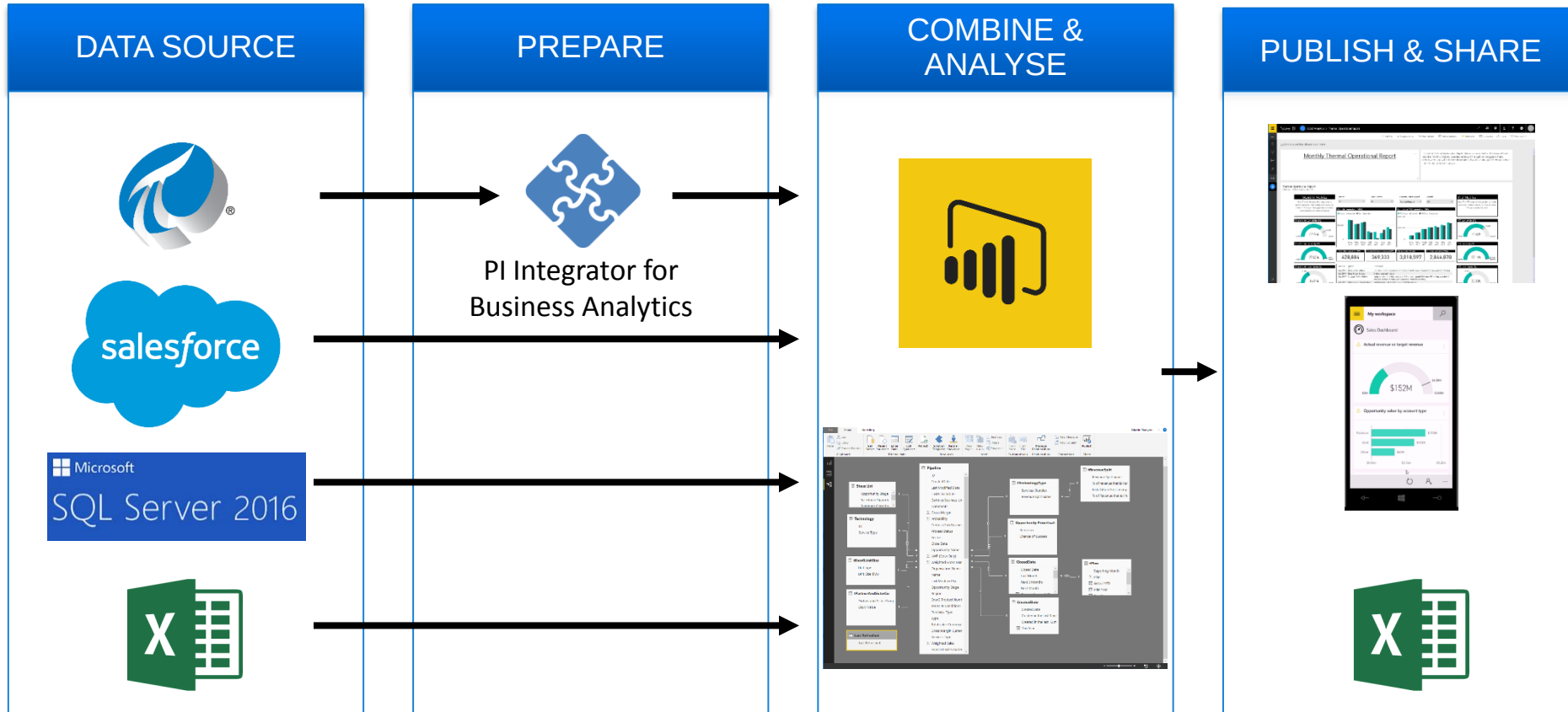
- Barry (BY)
- Brigg (BG)
- Kings Lynn (KN)
- Langage (LE)
- Peterborough (PH)
- South Humber Bank 1 (SHB1)
- South Humber Bank 2 (SHB2)

Edit Filters

☐ Asset Name☒ Asset Template☐ Asset Category

The Solution – Bringing it all together

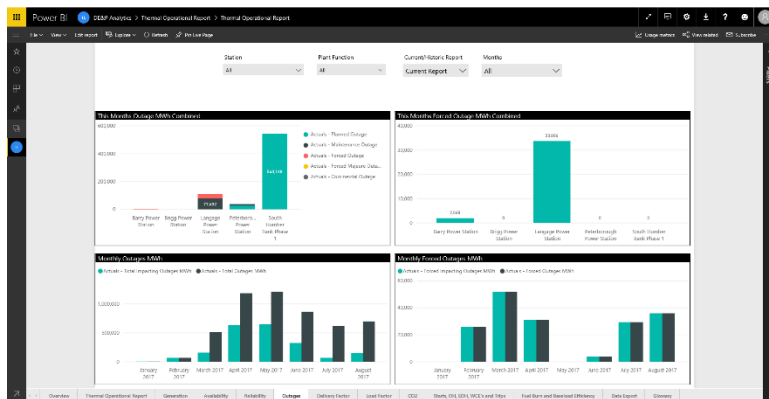
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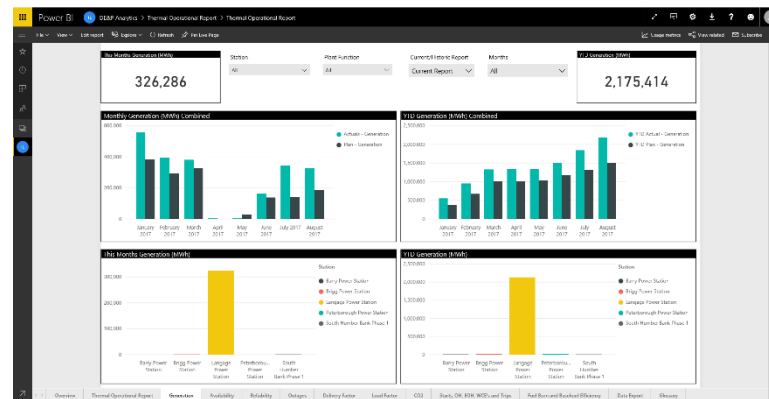
The Solution – Output

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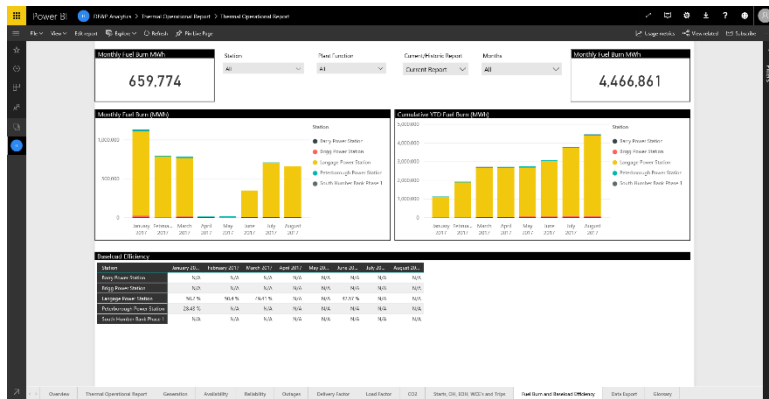
Outage Summary



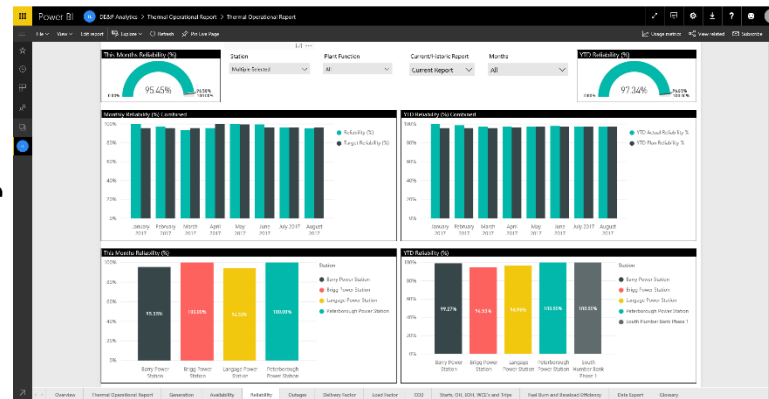
Generation



Fuel Burn & Efficiency



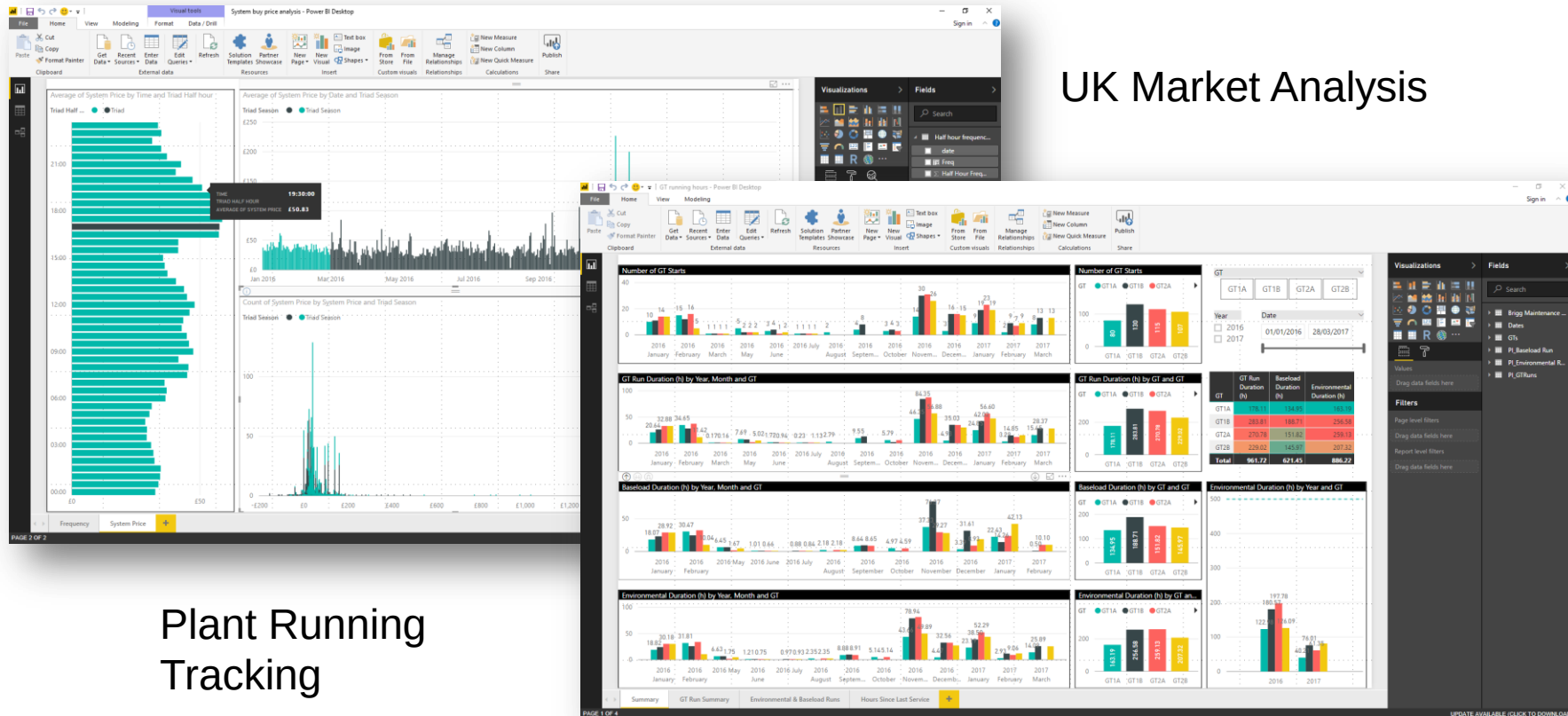
Delivery Factor



What's next?

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UK Market Analysis



Plant Running Tracking

Advanced Integrations – Supported Systems

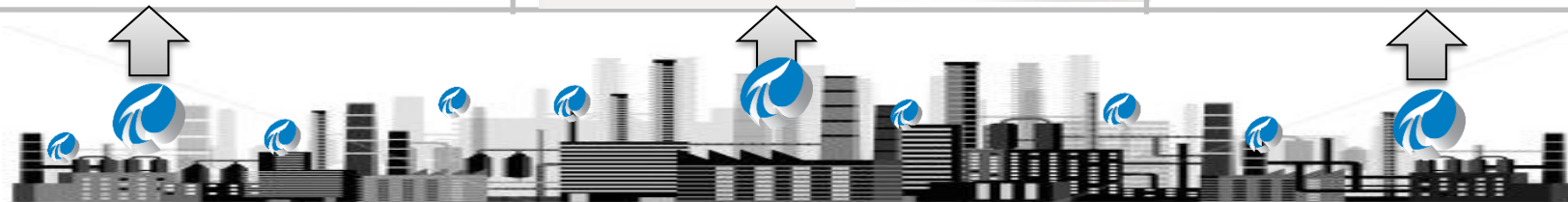
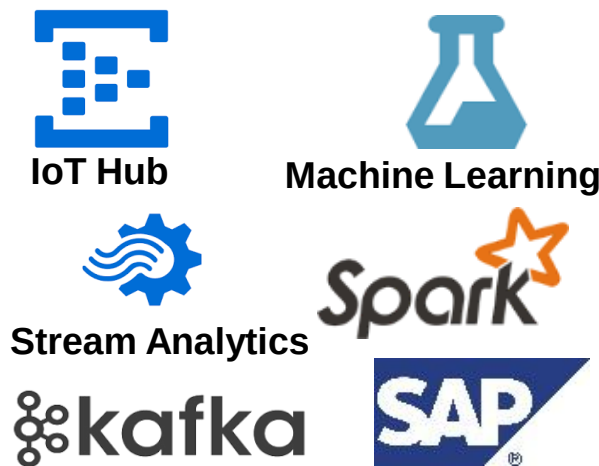
Visual Analytics



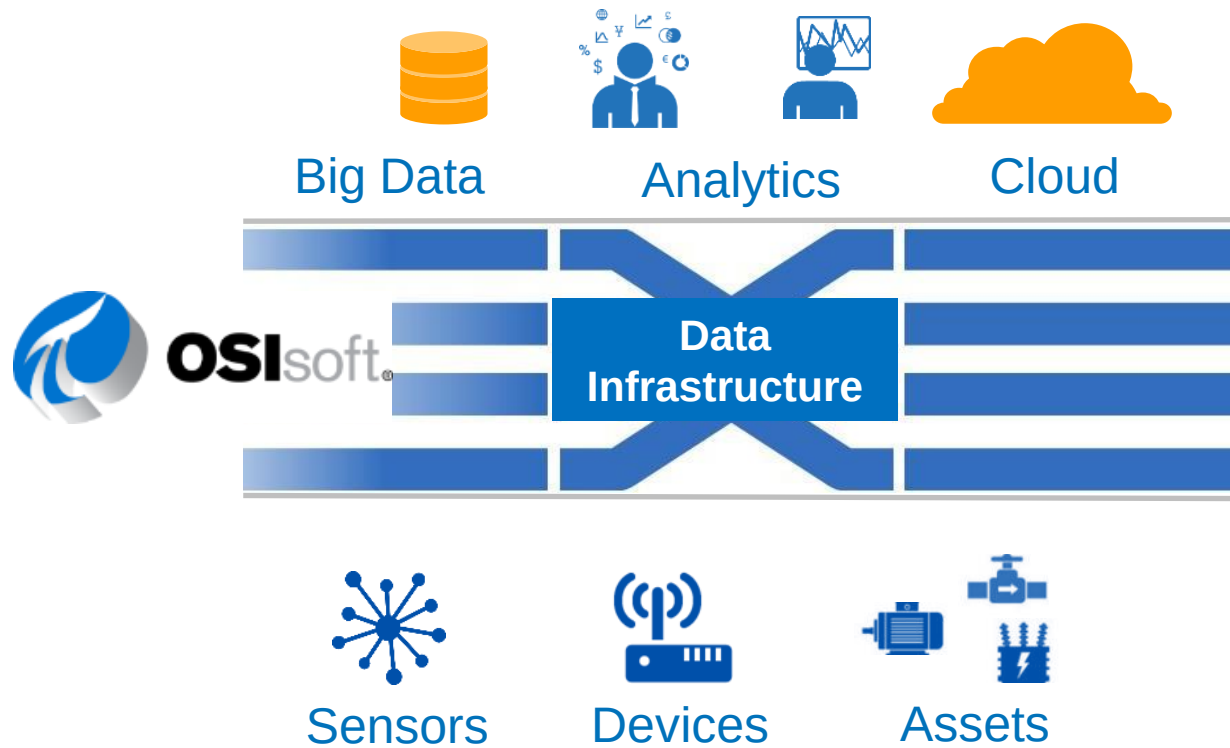
Data Warehouse / Data Lake



Streaming Analytics – 2017



Data Infrastructure for Digital Transformation



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PI Integrator for BA



PI Vision 2017



Brüel & Kjær Vibro

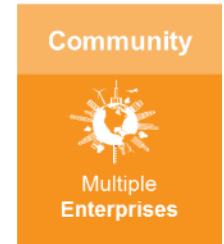
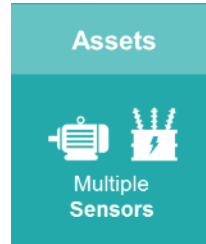
PI Server 2017



PI Connectors

Our Mission

Empower people, industries and communities to **transform their world** using operational data.



감사합니다

Danke

谢谢

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado

Ray Hall

- rhall@osisoft.com
- VP, Engineering
- OSIsoft, LLC



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Lunch Locations:

Arora 7

Main Lunch
Plus Industry
Reserved Tables

Market Brasserie

All Reserved
Lunch Tables
& Meetings

Expo

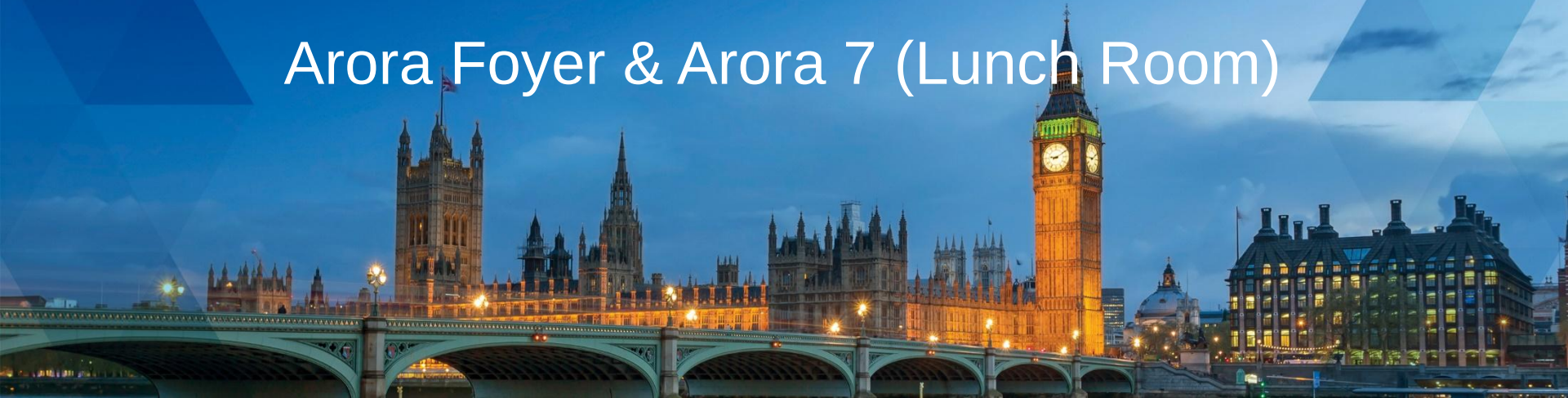
Grab & Go
Style
Lunch



Visit Our Partner & Product Expo!



Arora Foyer & Arora 7 (Lunch Room)





OS/soft Street Feast London -

OS/soft

Eat. Drink. Network. Repeat.

Wednesday OFFSITE — Buses vs. Tube

OSIsoft.
TUBE CHALLENGE
LONDON

**ALL ACCESS
BUS PASS**

Wednesday, October 18th
OSIsoft Street Feast London
— Hawker House

Bus Departures are from the
Intercontinental Hotel ONLY

Meet in the Registration Foyer at the Intercontinental
Hotel for one of the following bus departure times:

- 17:45
- 18:00
- 18:10
- 18:20
- 18:30

Return buses begin at 21:00 – 1:00 and will make stops
at the Canary Wharf Tube Station and the
North Greenwich Tube Station.



OSIsoft.
TUBE CHALLENGE
LONDON

**CANARY WHARF
ROUTE INFO**

Wednesday, October 18th
OSIsoft Street Feast London
— Hawker House

Meeting times at the Canary Wharf Tube Station –
Look for our guides with signs!

- 18:00
- 18:15
- 18:30

GOING ON YOUR OWN FROM CANARY WHARF?

- Take the Jubilee Line towards Stanmore
- 1 stop, get off at Canada Water
- Exit station and follow the signs and our guides
to the Hawker House

Don't forget your Oyster card!

Return buses begin at 21:00 – 1:00 and will make stops
at the Canary Wharf Tube Station and the North Greenwich
Tube Station. OR, you can take the tube on your own.



OSIsoft.
TUBE CHALLENGE
LONDON

**NORTH GREENWICH
ROUTE INFO**

Wednesday, October 18th
OSIsoft Street Feast London
— Hawker House

Meeting times for the Registration Desk
— Intercontinental Hotel O2

- 17:45
- 18:00
- 18:15
- 18:30

GOING ON YOUR OWN FROM NORTH GREENWICH?

- Take the Jubilee Line towards Stanmore
- 2 stops, get off at Canada Water
- Exit station and follow the signs and our guides
to the Hawker House

Don't forget your Oyster card!

Return buses begin at 21:00 – 1:00 and will make stops
at the Canary Wharf Tube Station and the North Greenwich
Tube Station. OR, you can take the tube on your own.



Pick up your card of choice at the Registration Desk



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