



YorkshireWater

Yorkshire Water and the Telemetry Real-time Strategy

Operating Yorkshire Water as a
Production Plant

Presented by

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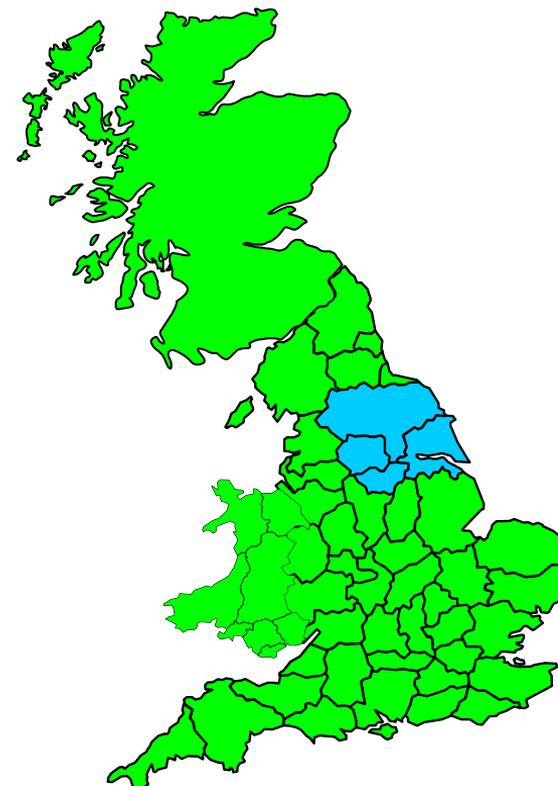


Agenda

- Introduction to Yorkshire Water
- The Telemetry Strategy
- Operating YW as a Production Plant
- YW and OSIsoft PI System Solutions
- Future Work
- Questions

Yorkshire Water – our business

- Supply 1.24 billion litres per day
- **Treat 1 billion litres of waste water per day**
- Over 2 million bill paying customers
- **65,600km of clean and waste water networks**
- 86 water treatment works (1.3bn l/day)
- **600 waste water treatment works**
- 2,250 pumping stations, 2,200 CSOs
- **650 reservoirs and water storage**
- 2,200 distribution management areas



Our water supply network

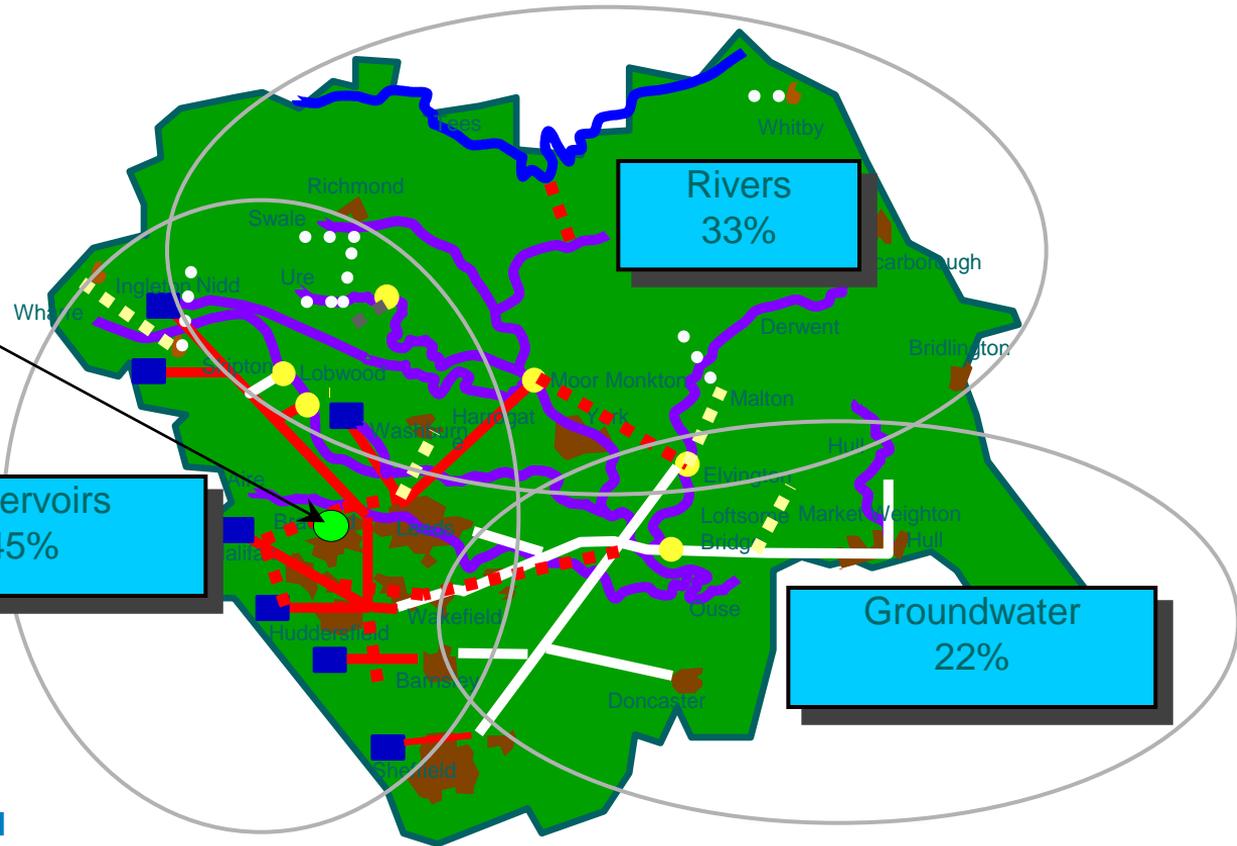
Yorkshire Water
Data Centres

Reservoirs
45%

Rivers
33%

Groundwater
22%

-  Reservoir Group
-  New Raw Water Mains
-  New Treated Water Mains
-  New Treated Water Mains Rural



Telemetry IT – sensor to screen

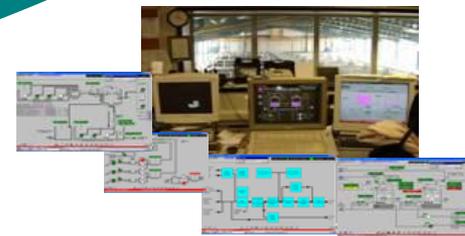
Sensors and instruments



Outstations and Regional Telemetry Units



SCADA



Control Room and Field Staff



Business and Operational Data

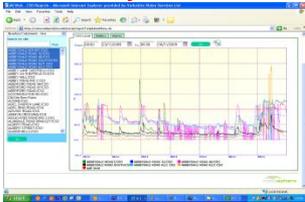


The history of telemetry at Yorkshire Water

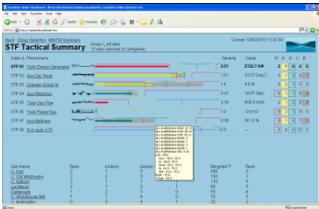
- 1980s:** *Many different individual systems - 65 local systems, 40 suppliers*
- 1990s:** *1,000 outstations
A move towards a Single Supplier and a Regional view, established Regional Telemetry System (RTS)- Alarm and Event Management.
Established a Regional Operations Control Centre (ROCC)*
- 2000s:** *6,000+ outstations
Organic growth, remote intervention, regional optimisation,
below ground asset monitoring.*
- 2009:** *OSIsoft PI Server, PI ACE, PI ProcessBook, Dashboard Technology*
- 2010:** *PI-TSV Data. SCADA Site Data. PI AlarmView. PI Notifications.*
- 2011:** *SharePoint 2010 Integration and Silverlight – Production Dashboards*

The telemetry strategy

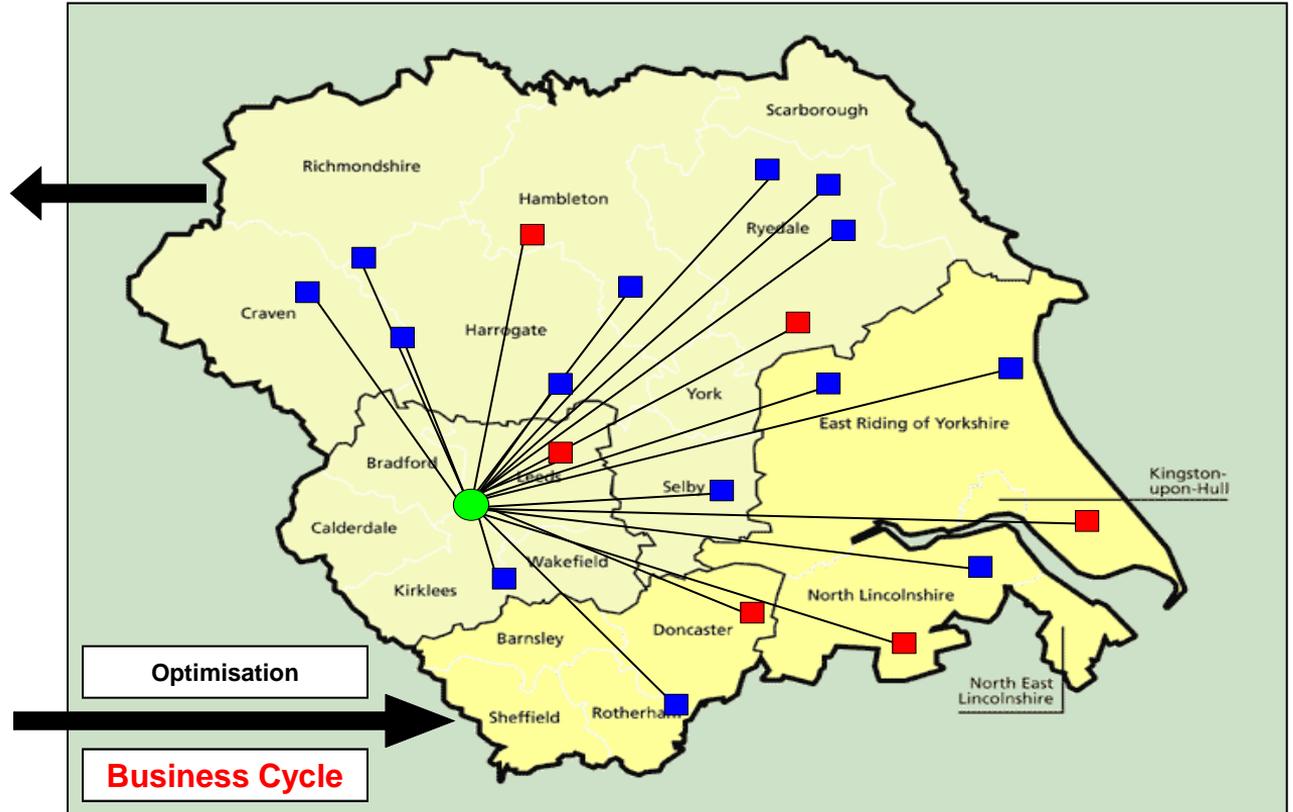
Broaden the Footprint
Monitor Anywhere



Add Intelligence
Operational Dashboards



Automate and Intervene
Safe Remote Control

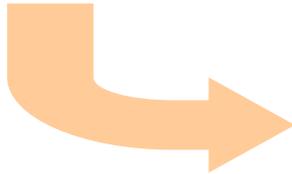


Optimisation

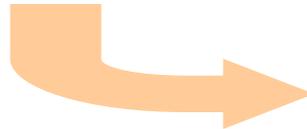
Business Cycle

Operating as a 'Production Plant'

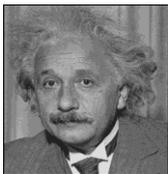
We'll be running Yorkshire Water like a production plant



We'll know we are running the company in an optimal way

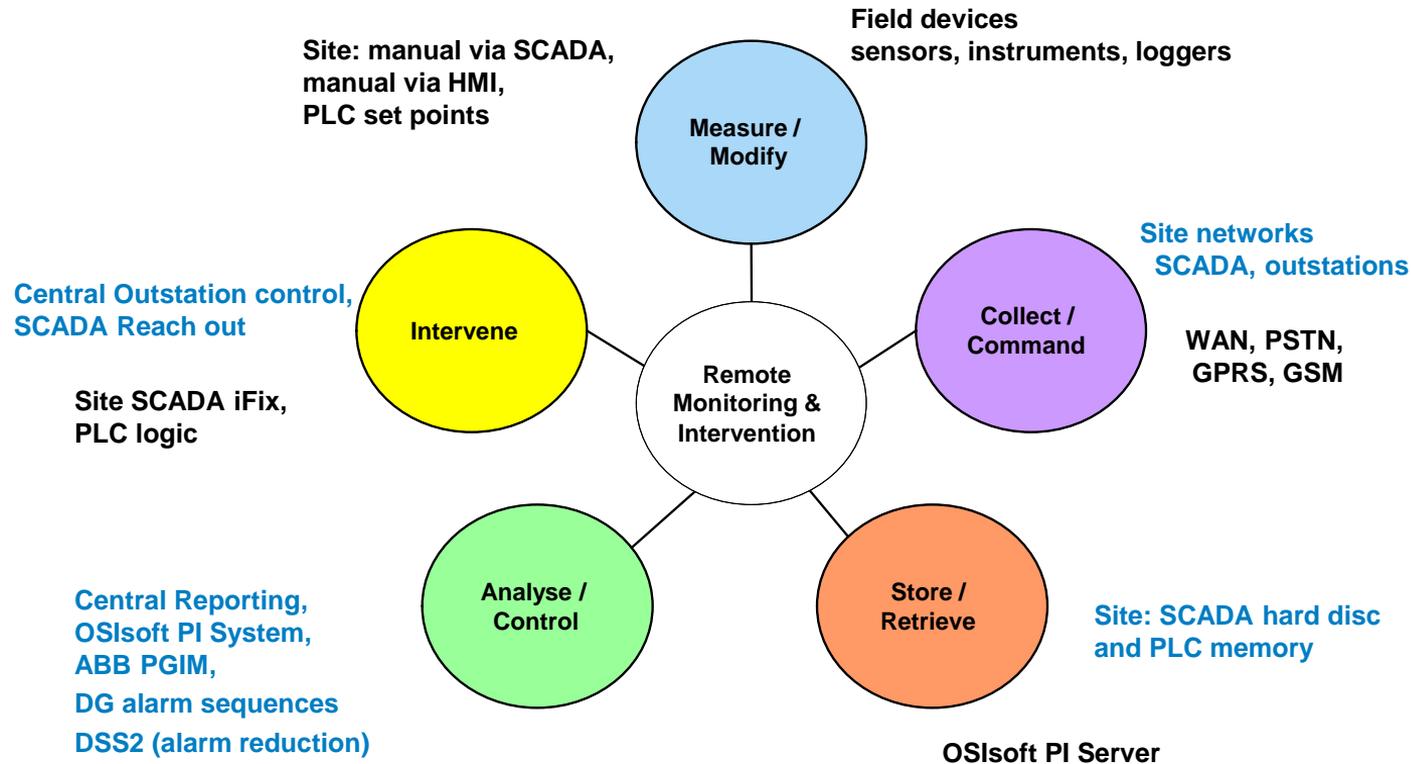


If something happens we'll model the impact and remotely re-configure as appropriate

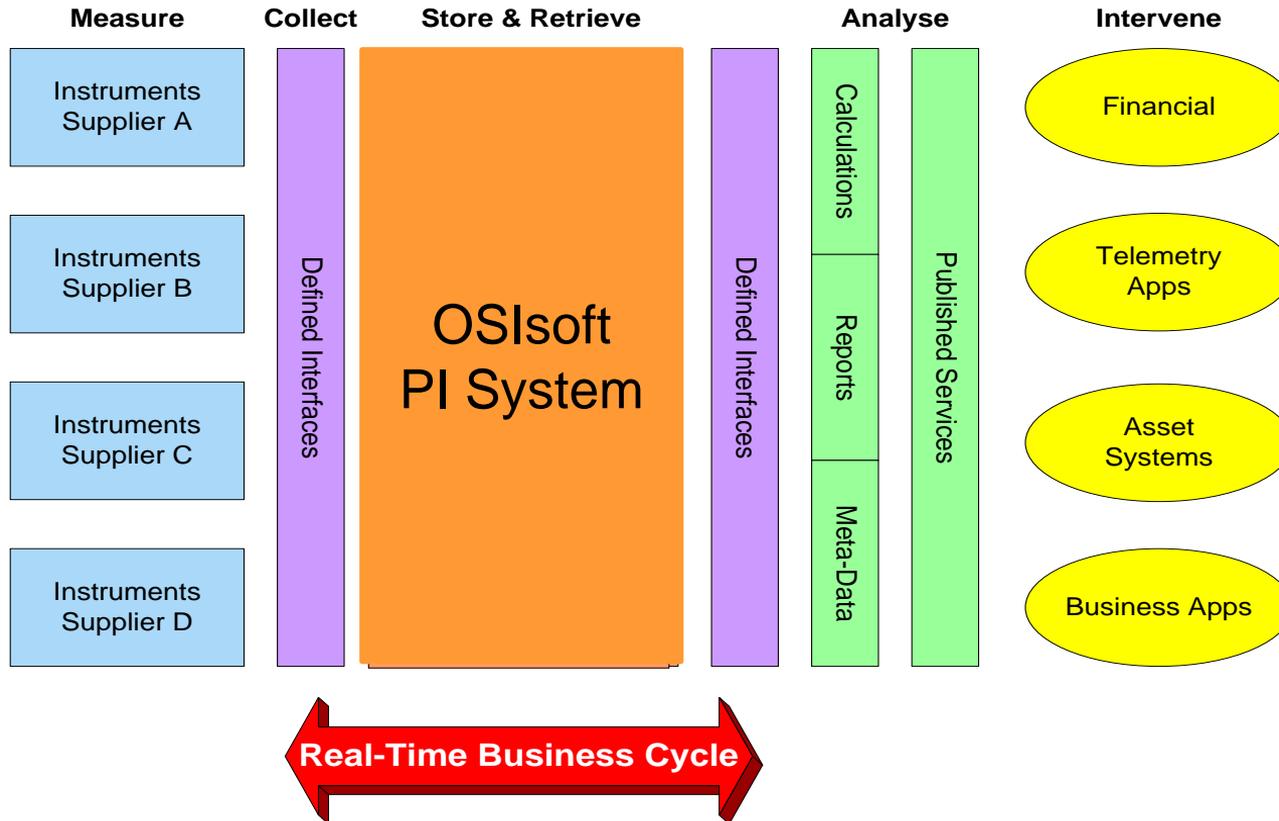


Eyes, Ears, Hands & Brains

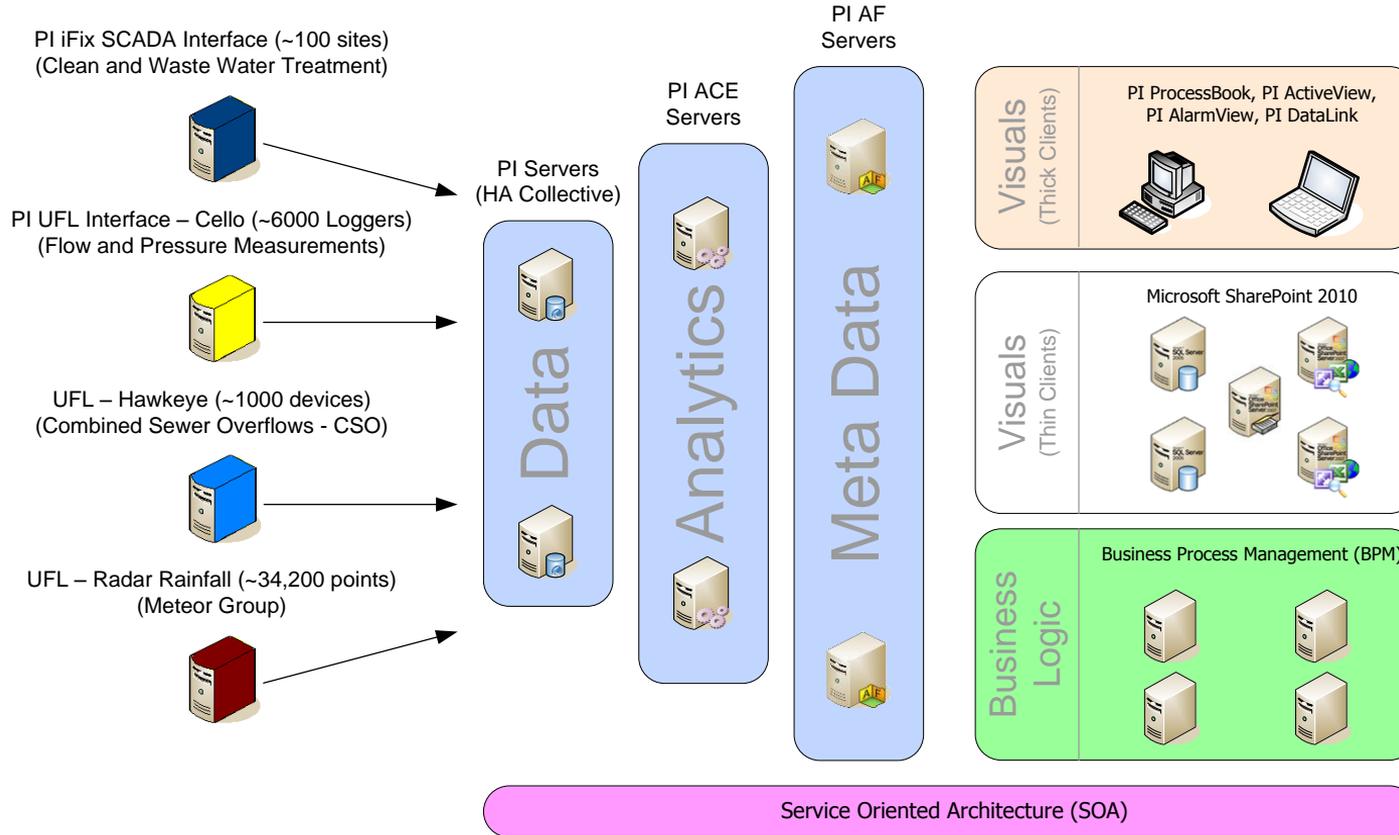
Aligning telemetry with the business need



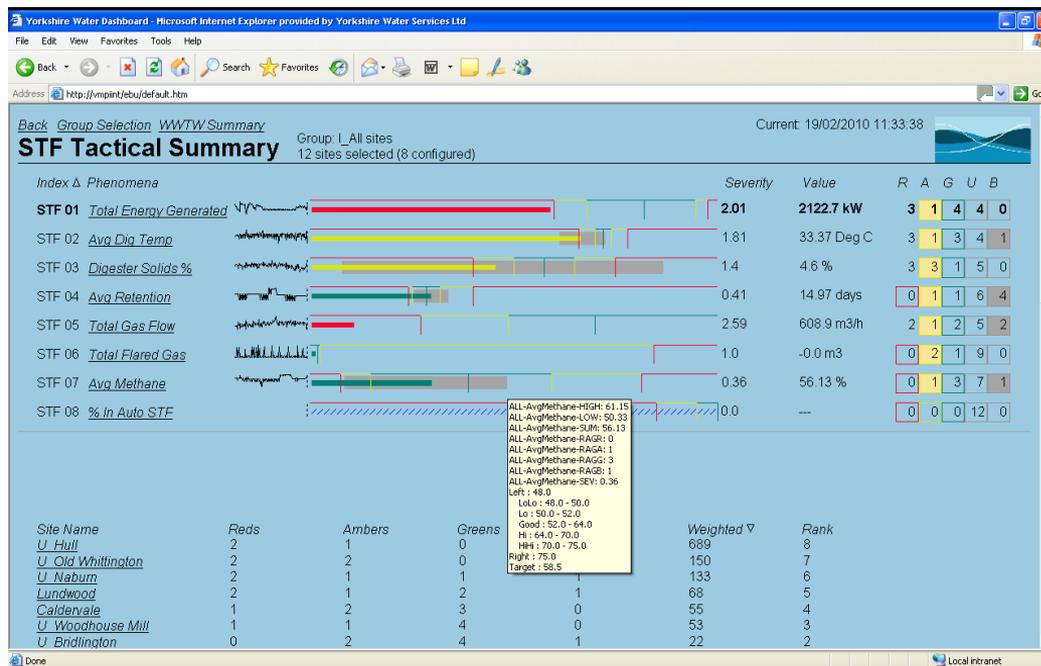
Real-time data within 'The Business Cycle'



Our PI System implementation – Year 2



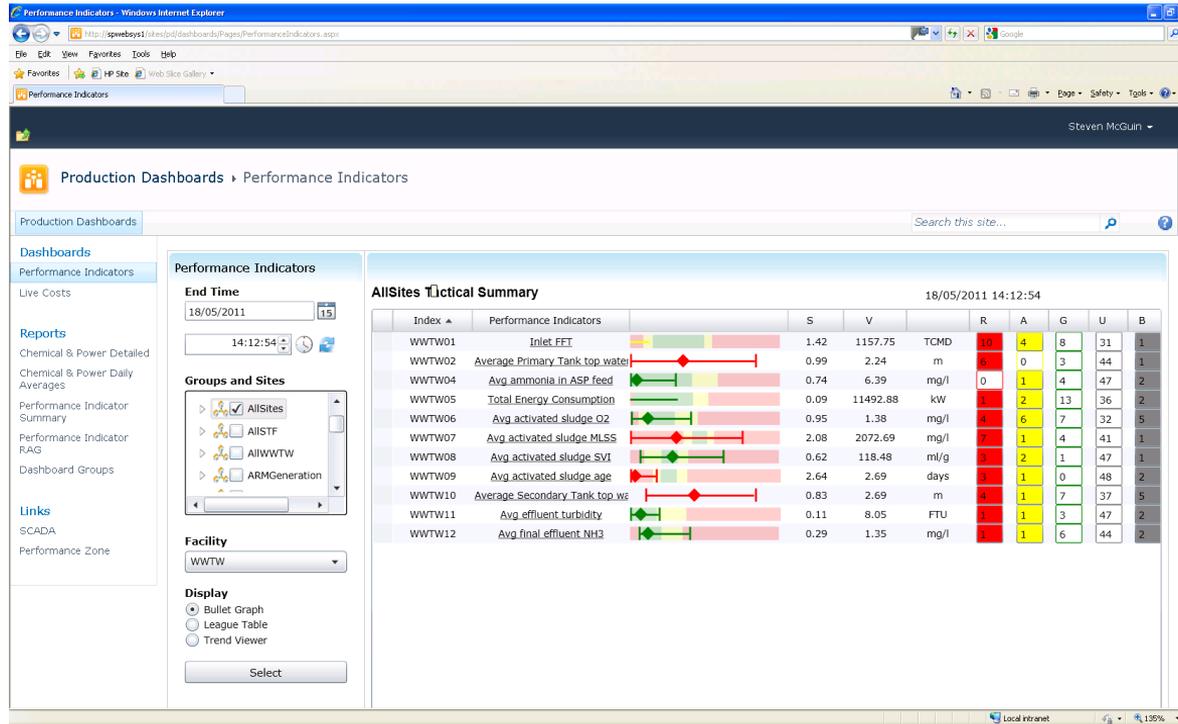
Energy dashboards – Year 1



- Energy Management Dashboards
- Strategic and Tactical Information
- 23 Shining Star Sites
- PI iFix SCADA Interface
- PI to PI Interface
- PI Module Database
- PI ACE
- PI ProcessBook
- PI ActiveView
- Integration Partners - Capula



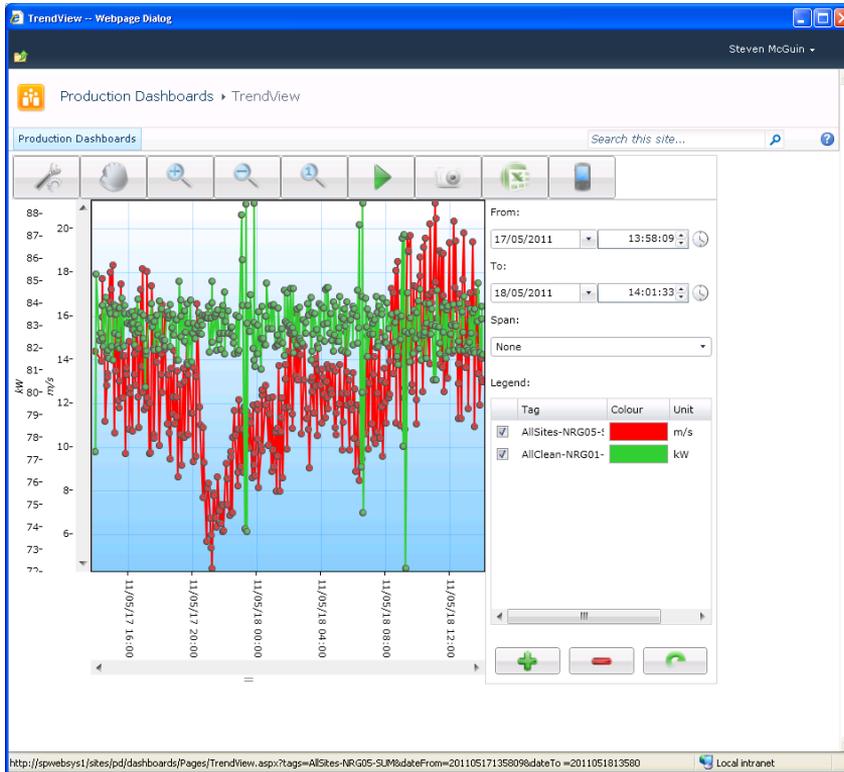
Energy dashboards – Year 2



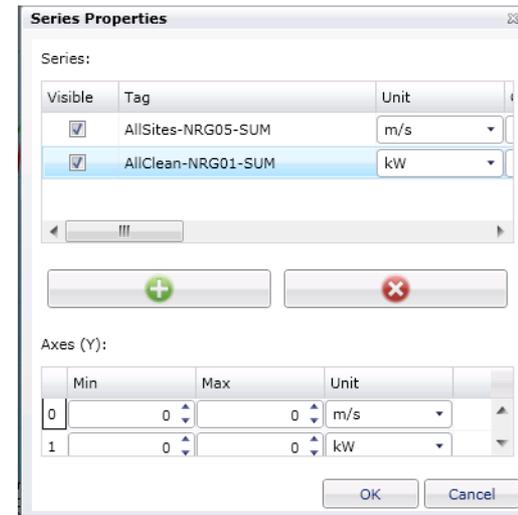
- Enhanced Dashboards
- Strategic and Tactical Information
- 55 Strategic Sites
- PI iFix SCADA Interface
- SharePoint 2010
- Microsoft Silverlight
- Web Part Development



Dashboards and the trend viewer



- YW Silverlight Application
- Graphical View of real-time data
- Zoom, Span, Multiple Tags, Calling Outstation
- Export Data to CSV format
- PI Module Database / PI AF



Control room alarms - Year 1

The screenshot displays the PI AlarmView application interface. It features a menu bar (File, Edit, View, Tools, Help), a toolbar, and a main workspace divided into several panes:

- Alarm Hierarchy:** A tree view on the left showing the organizational structure of alarms, including groups like 'Clean Water Business Unit', 'East', 'Mid-Yorkshire', 'North', 'West Distribution and Customer Services', 'Bradford and Craven', 'Calder', 'South Pennine', and 'Alarms in Test'.
- Current Alarms:** A central table listing active alarms with columns for Start Time, Sequence Start, and Description. The selected alarm is 'B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS'.
- Alarm Properties:** A detailed view on the right for the selected alarm, showing fields such as AlarmGroup, AlarmType, AutoAck, Description, DigitalSet, GroupName, Name, Path, ServerName, ConditionName, IsNormal, SourceTag, SourceValue, Extra Info, Mimic, ControlTag, Deadband, Options, ReferenceTag, and PI Alarm Tests.
- History Results:** A table at the bottom showing a list of past alarm events with columns for Start Time, Description, End Time, and Duration.

- Migration of Telemetry Alarms
- Flow and Pressure Alarms
- PI UFL Interface
- PI Asset Framework
- PI System Explorer
- PI ProcessBook
- PI ActiveView
- PI AlarmView

The future of telemetry

AlarmView - Windows Internet Explorer

http://spdev008:8080/AlarmView.Web/AlarmViewTestPage.aspx

File Edit View Favorites Tools Help

Performance Indicators AlarmView

Active Alarms

Time	Site Name	Alarm Point	Priority	State	Value	Time	SiteName	AlarmPoint	State	Priority	Value
5/12/2011 2:28:50	BENTLEY_YORK_RD	W_WELL_HI_AND_F	1	Unacknowledged	ALARM	5/12/2011 2:28:50 PM	BENTLEY_YORK_RD_SPS	W_WELL_HI_AND_PUMP_RUNNING	Unacknowledged	1	ALARM
5/13/2011 2:28:50	HOOK_WATER_LANE	WET_WELL_LEVEL	1	Unacknowledged	1.5625 m HH	5/13/2011 2:28:50 PM	HOOK_WATER_LANE_SPS	WET_WELL_LEVEL	Unacknowledged	1	1.5625 m HH
5/15/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	2	Unacknowledged	FAILED	5/15/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	2	FAILED
5/16/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	1	Unacknowledged	FAILED	5/16/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	1	FAILED
5/17/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	1	Unacknowledged	FAILED	5/17/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	1	FAILED
5/9/2011 2:28:50 P	ANCHORAGE_LANE	PUMP_1_F	1	Unacknowledged	FAILED	5/9/2011 2:28:50 PM	ANCHORAGE_LANE_SPS	PUMP_1_F	Unacknowledged	1	FAILED
5/10/2011 2:28:50	GOOLE_STW	STANDBY_GENERAT	1	Unacknowledged	OFF	5/10/2011 2:28:50 PM	GOOLE_STW	STANDBY_GENERATOR	Unacknowledged	1	OFF
5/11/2011 2:28:50	OLD_GOOLE_NO1_S	STORM_SUMP_PUMP	1	Unacknowledged	FAILED	5/11/2011 2:28:50 PM	OLD_GOOLE_NO1_SPS	STORM_SUMP_PUMP	Unacknowledged	1	FAILED
5/12/2011 2:28:50	BENTLEY_YORK_RD	W_WELL_HI_AND_F	1	Unacknowledged	ALARM	5/12/2011 2:28:50 PM	BENTLEY_YORK_RD_SPS	W_WELL_HI_AND_PUMP_RUNNING	Unacknowledged	1	ALARM
5/13/2011 2:28:50	HOOK_WATER_LANE	WET_WELL_LEVEL	1	Unacknowledged	1.5625 m HH	5/13/2011 2:28:50 PM	HOOK_WATER_LANE_SPS	WET_WELL_LEVEL	Unacknowledged	1	1.5625 m HH
5/14/2011 2:28:50	DUNSVILLE_PK_LN	PUMP_1_R_UNDERC	2	Unacknowledged	ALARM	5/14/2011 2:28:50 PM	DUNSVILLE_PK_LN_SPS	PUMP_1_R_UNDERCURRENT	Unacknowledged	2	ALARM
5/15/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	2	Unacknowledged	FAILED	5/15/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	2	FAILED
5/16/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	1	Unacknowledged	FAILED	5/16/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	1	FAILED
5/17/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	1	Unacknowledged	FAILED	5/17/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	Unacknowledged	1	FAILED

Monitored Alarms

Time	Site Name	Alarm Point	Priority	State	Value	Time	SiteName	AlarmPoint	State	Priority	Value
5/10/2011 2:28:50	GOOLE_STW	STANDBY_GENERAT	1	UnacknowledgedMon	OFF	5/10/2011 2:28:50 PM	GOOLE_STW	STANDBY_GENERATOR	UnacknowledgedMonitored	1	OFF
5/11/2011 2:28:50	OLD_GOOLE_NO1_S	STORM_SUMP_PUMP	1	UnacknowledgedMon	FAILED	5/11/2011 2:28:50 PM	OLD_GOOLE_NO1_SPS	STORM_SUMP_PUMP	UnacknowledgedMonitored	1	FAILED
5/12/2011 2:28:50	BENTLEY_YORK_RD	W_WELL_HI_AND_F	1	UnacknowledgedMon	ALARM	5/12/2011 2:28:50 PM	BENTLEY_YORK_RD_SPS	W_WELL_HI_AND_PUMP_RUNNING	UnacknowledgedMonitored	1	ALARM
5/13/2011 2:28:50	HOOK_WATER_LANE	WET_WELL_LEVEL	1	UnacknowledgedMon	1.5625 m HH	5/13/2011 2:28:50 PM	HOOK_WATER_LANE_SPS	WET_WELL_LEVEL	UnacknowledgedMonitored	1	1.5625 m HH
5/14/2011 2:28:50	DUNSVILLE_PK_LN	PUMP_1_R_UNDERC	2	UnacknowledgedMon	ALARM	5/14/2011 2:28:50 PM	DUNSVILLE_PK_LN_SPS	PUMP_1_R_UNDERCURRENT	UnacknowledgedMonitored	2	ALARM
5/15/2011 2:28:50	RAWCLIFFE_BANKS	FFT_PUMP_2_R	2	UnacknowledgedMon	FAILED	5/15/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	UnacknowledgedMonitored	2	FAILED

Cleared Alarms

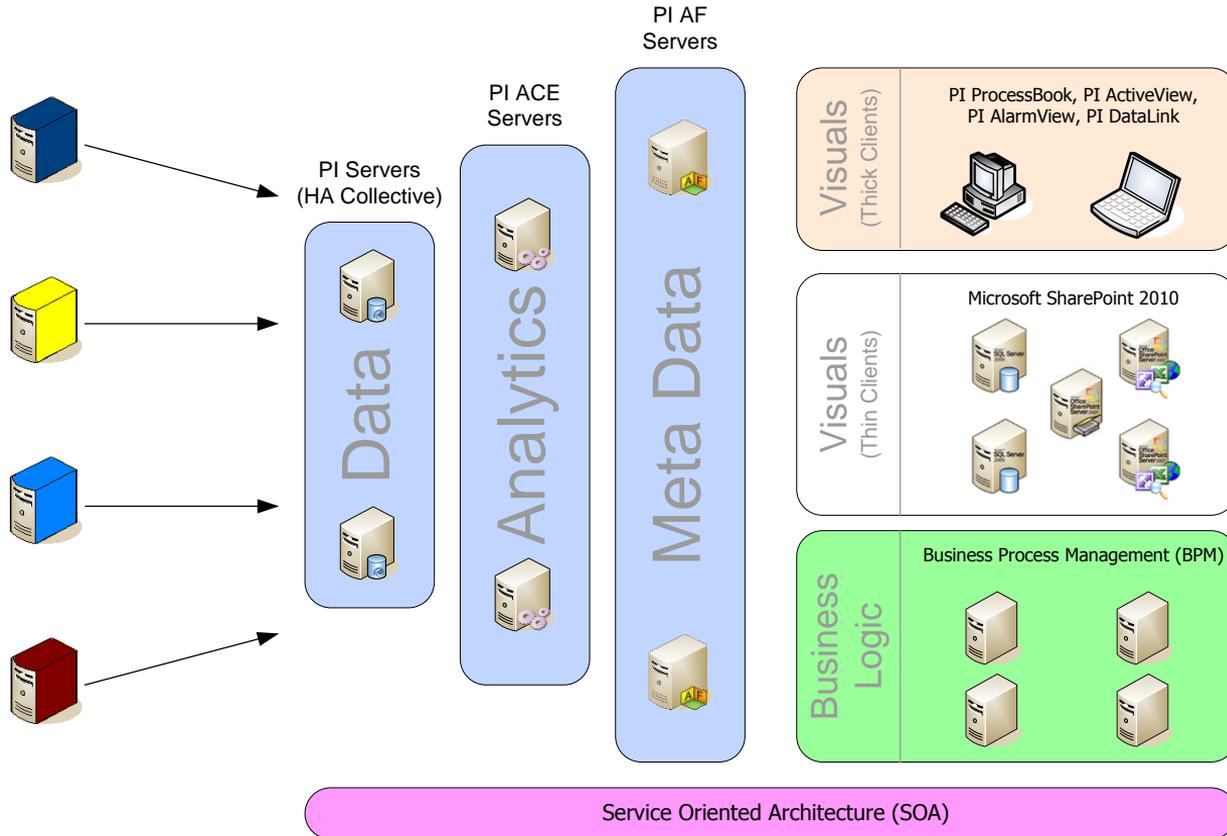
Time	Site Name	Alarm Point	Priority	State	Value	Time	SiteName	AlarmPoint	State	Priority	Value
5/8/2011 2:28:50 P	RAWCLIFFE_BANKS	FFT_PUMP_2_R	1	UnacknowledgedCle	FAILED	5/8/2011 2:28:50 PM	RAWCLIFFE_BANKSD_STW	FFT_PUMP_2_R	UnacknowledgedCleared	1	FAILED
5/9/2011 2:28:50 P	ANCHORAGE_LANE	PUMP_1_F	1	UnacknowledgedCle	FAILED	5/9/2011 2:28:50 PM	ANCHORAGE_LANE_SPS	PUMP_1_F	UnacknowledgedCleared	1	FAILED
5/10/2011 2:28:50	GOOLE_STW	STANDBY_GENERAT	1	UnacknowledgedCle	OFF	5/10/2011 2:28:50 PM	GOOLE_STW	STANDBY_GENERATOR	UnacknowledgedCleared	1	OFF

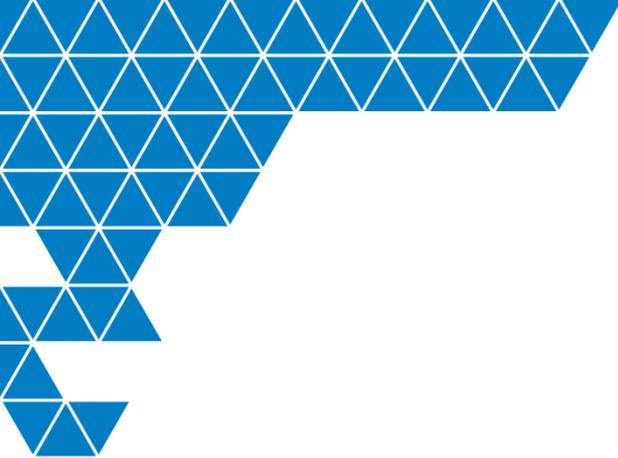
Active Alarms

Monitored Alarms

Cleared Alarms

Yorkshire and the OSIsoft PI System





Thank you