



# Regional Seminar Series Aberdeen



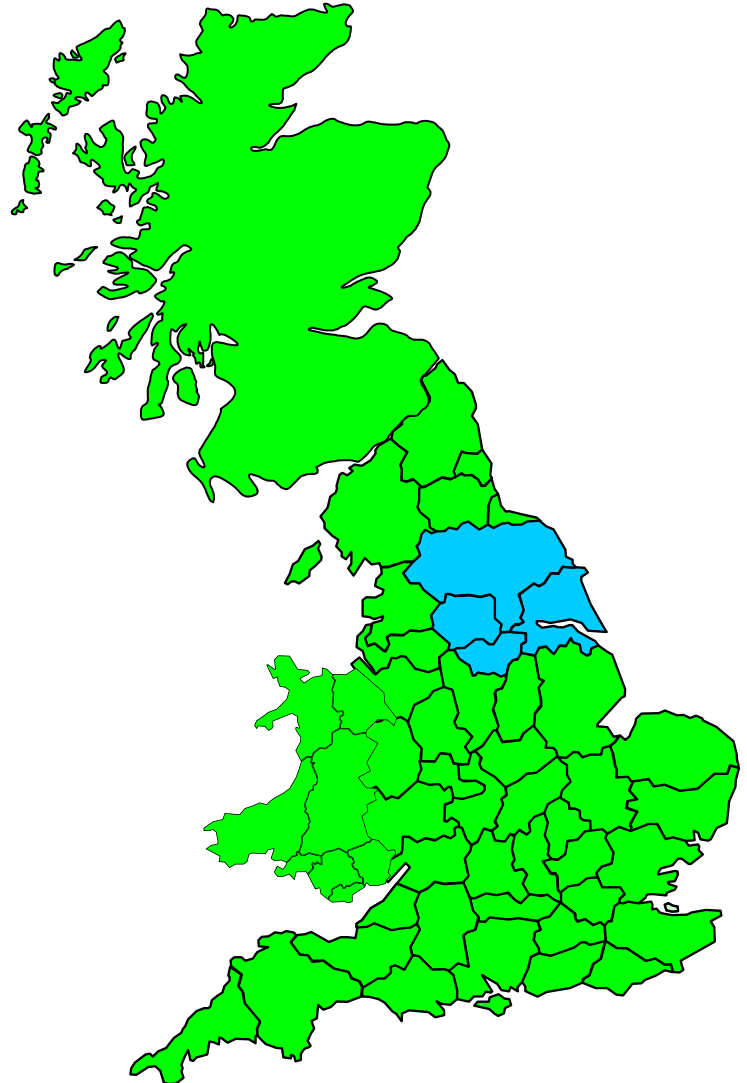
## Yorkshire Water and the Telemetry IT Strategy: *"Operating Yorkshire Water as One Production Plant"*

Nic Winrow and Steve McGuin

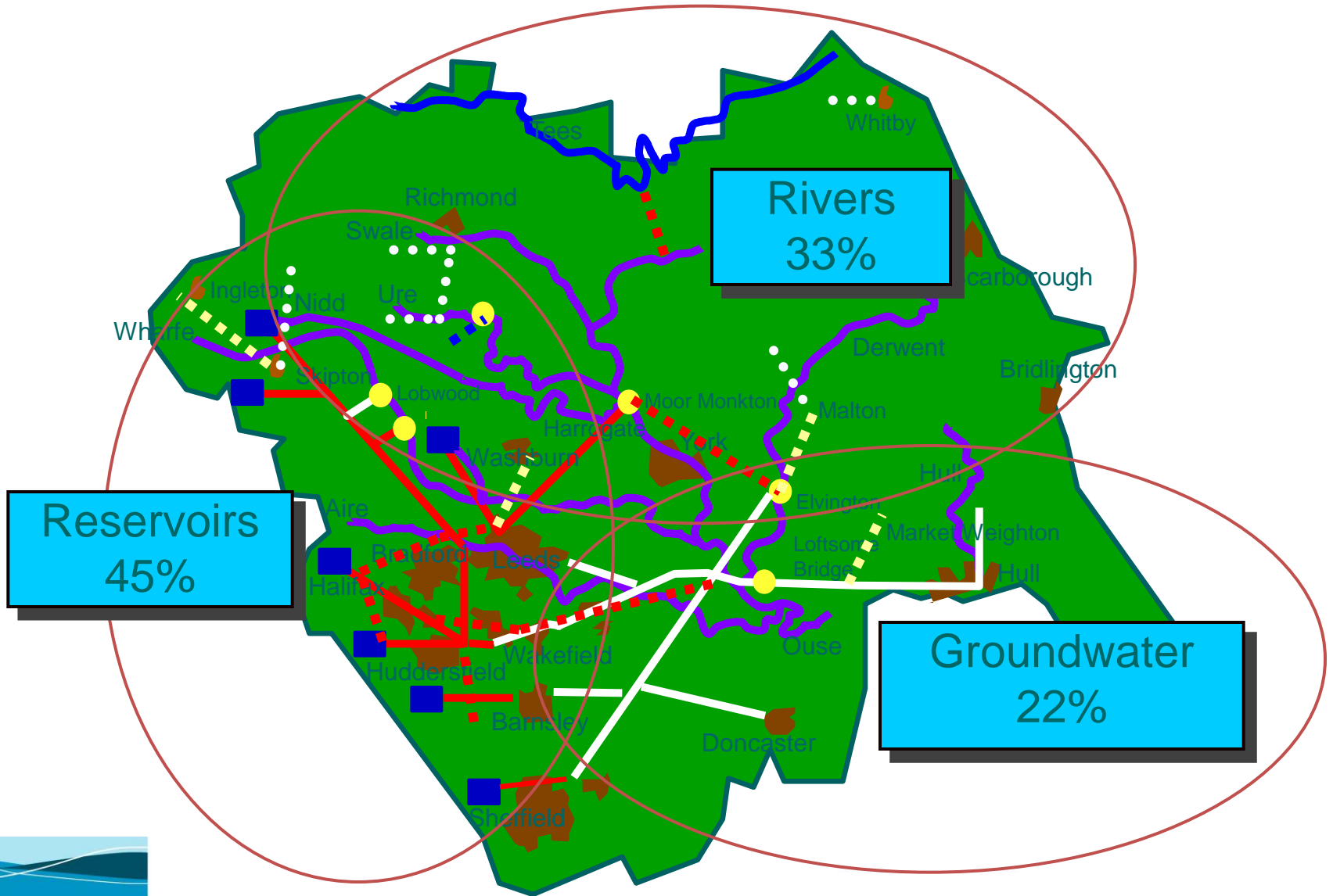
28<sup>th</sup> September 2010

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

- Supply 1.3 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
- 600 waste water treatment works
- 2,250 pumping stations, 2,200 CSOs
- 650 reservoirs & water storage
- 2,200 distribution management areas



# Our Water Supply Network



# Our Vision 'To Be Clearly the Best'



- Zero interruptions to supply
- Zero service failures
- Zero compliance failures
- Zero customer repeats
  
- Optimal service network
- Right first time
- Centralised Control and Optimisation
- Significant cost reduction
- 100% sludge capacity availability
- Great place to work
- Work management optimisation



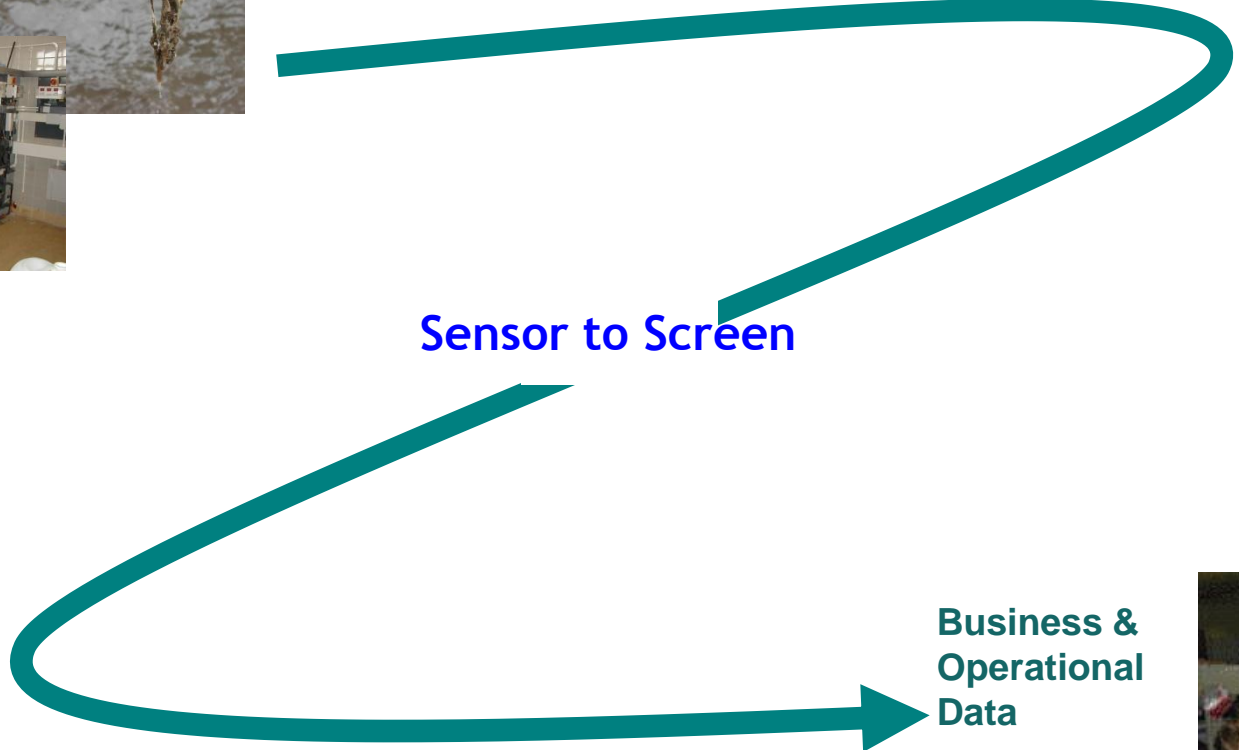
# Telemetry IT - Sensor to Screen



Sensors and instruments



Sensor to Screen



Business & Operational Data



YorkshireWater



# Telemetry IT - Sensor to Screen



Sensors and instruments



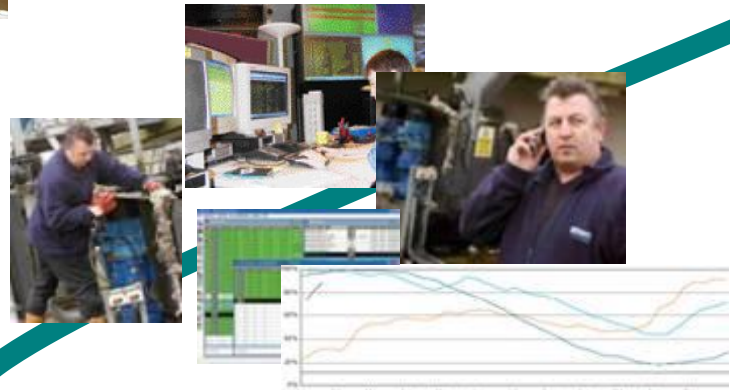
Outstations/ RTUs



SCADA & PLCs



Control Room & Field Staff



Business & Operational Data



Loggers



**1980s:** *65 local systems, 40 suppliers*

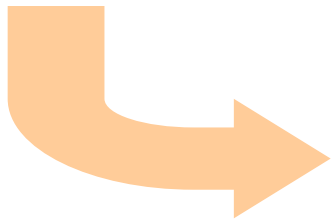
**1990s:** *1,000 outstations  
Big single system (alarm management) and  
islands of automation  
Regional Operations Control Centre*

**2000s:** *6,000+ outstations  
Organic growth, integration issues  
Remote intervention, regional optimisation  
Below ground asset monitoring*

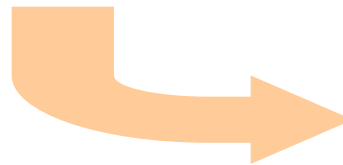
**2010s:** *OSI PI Implemented  
Telemetry Data Service of the future*



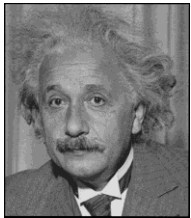
**We'll be running Yorkshire Water like a production plant .....**



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



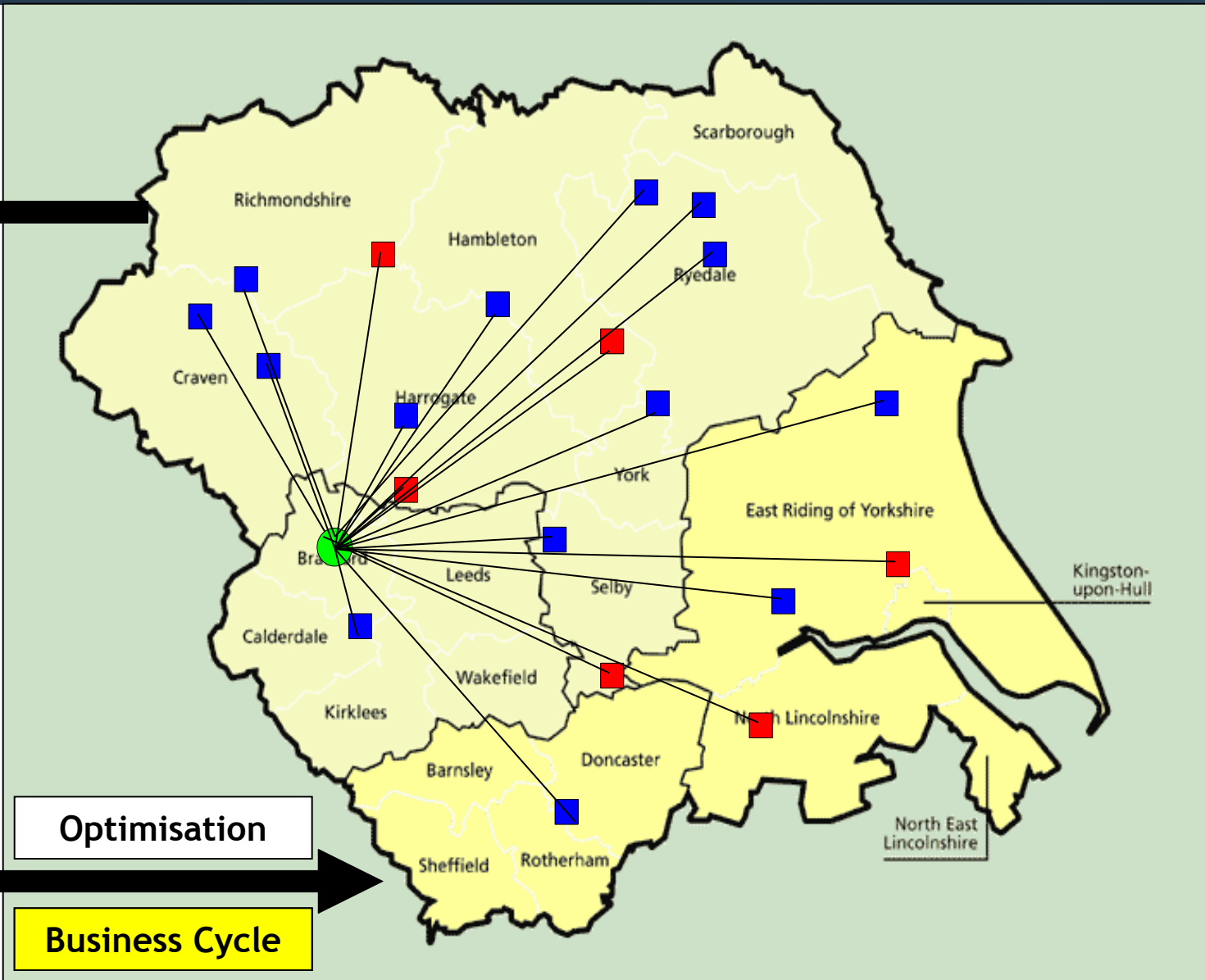
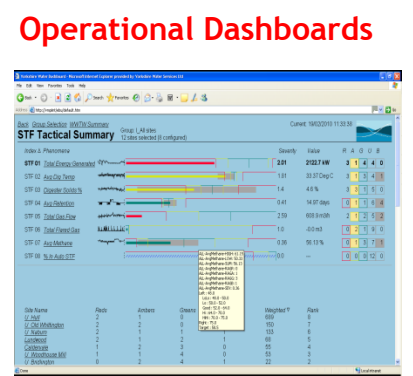
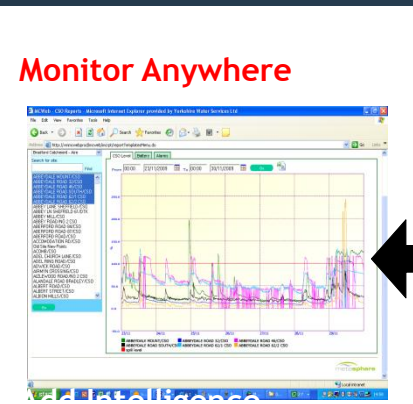
**If something happens we'll model the impact and remotely re-configure as appropriate**



*Eyes, Ears,  
Hands and the Brain*



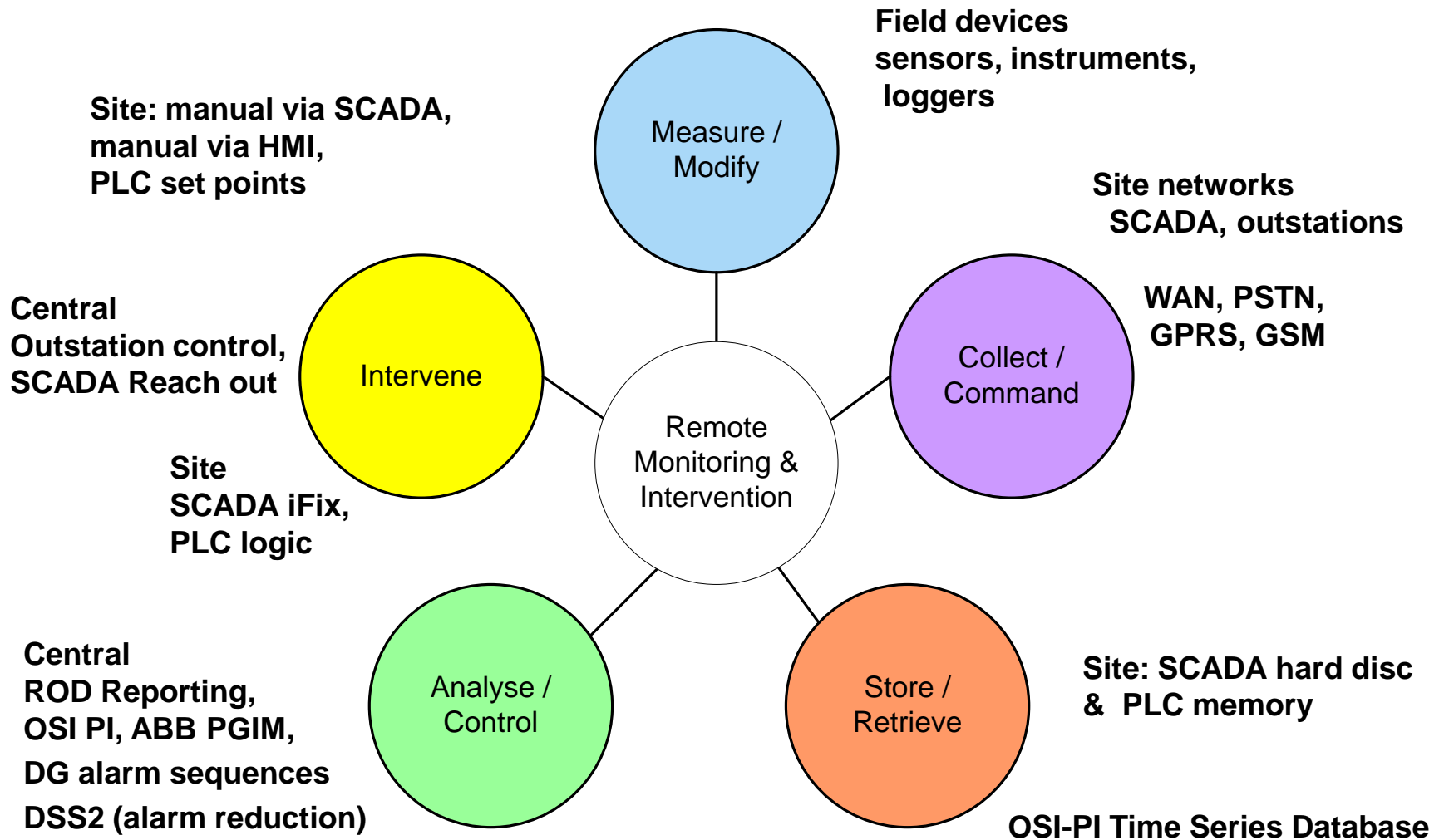
# The Telemetry Strategy

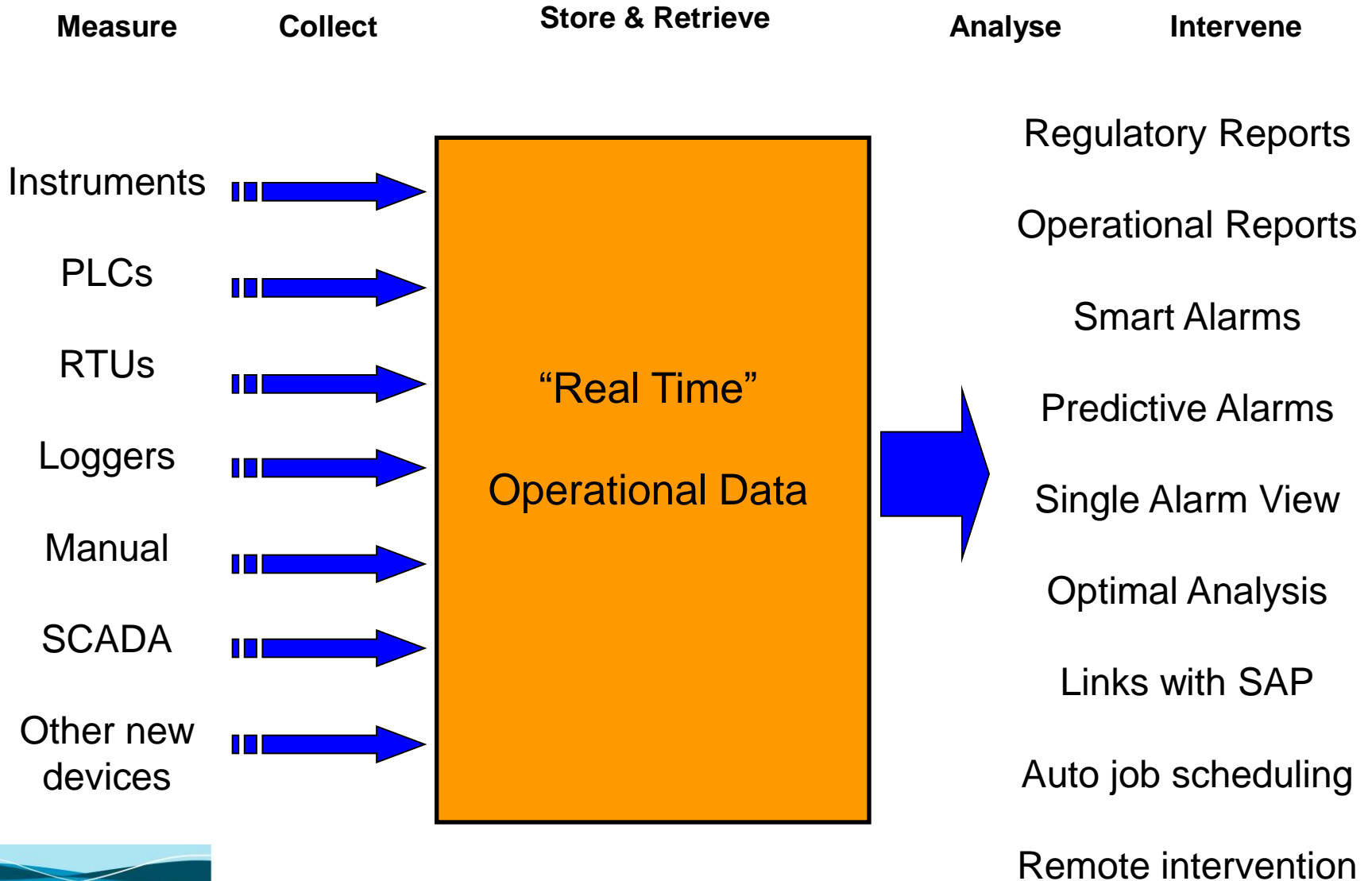


Optimisation

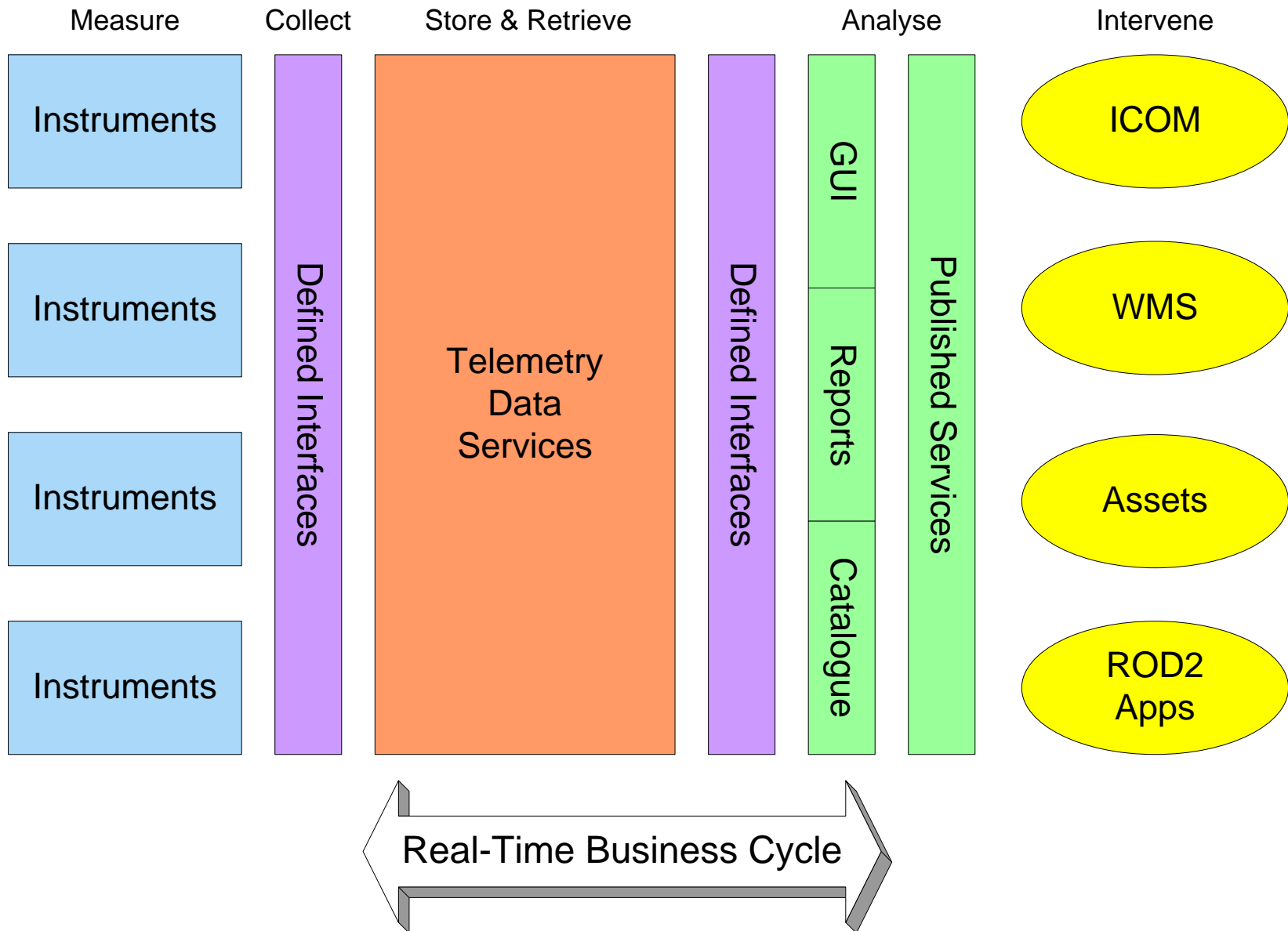
Business Cycle

# Aligning with the Business Need





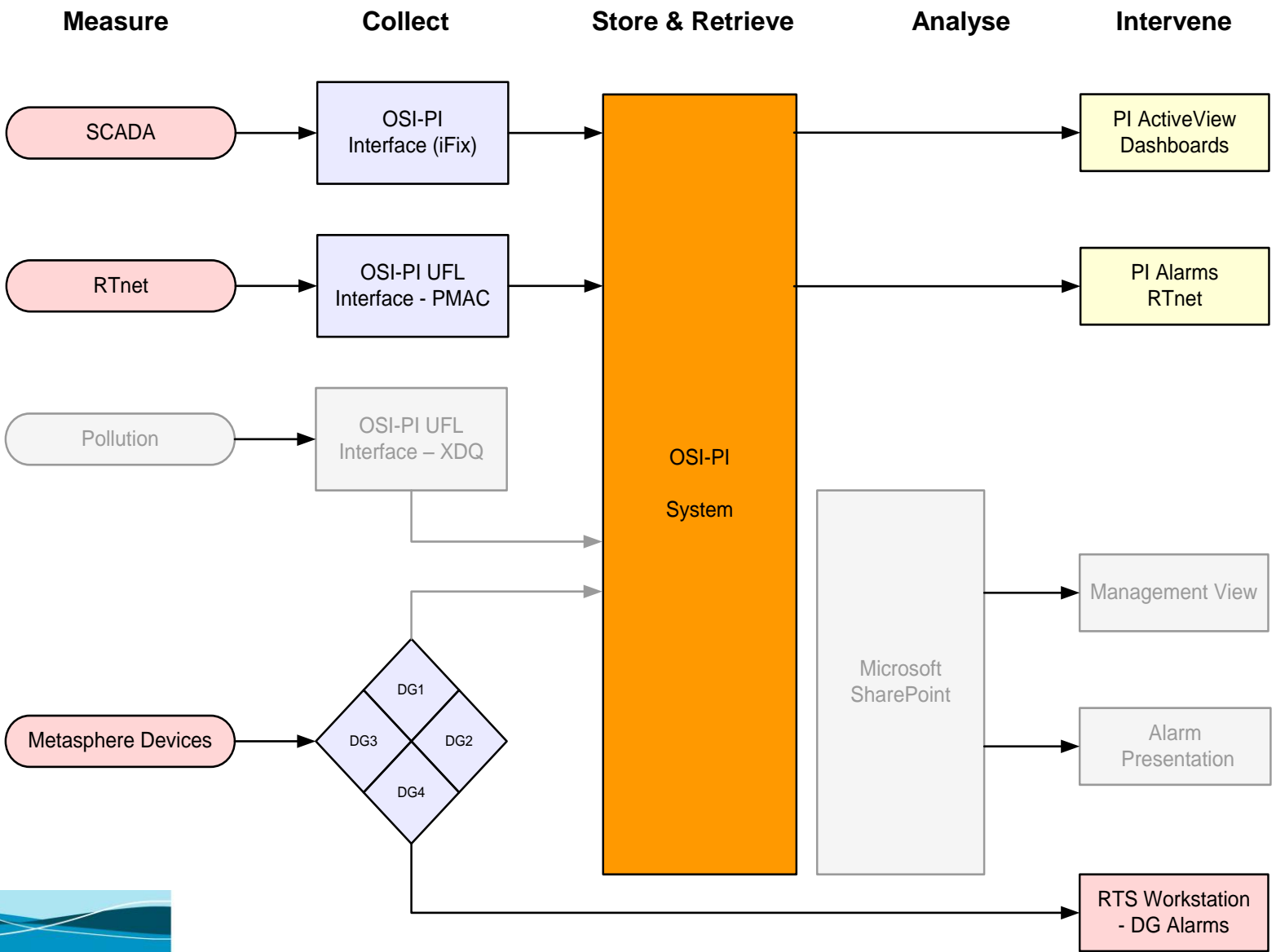
# Real-Time Data within 'The Business Cycle'



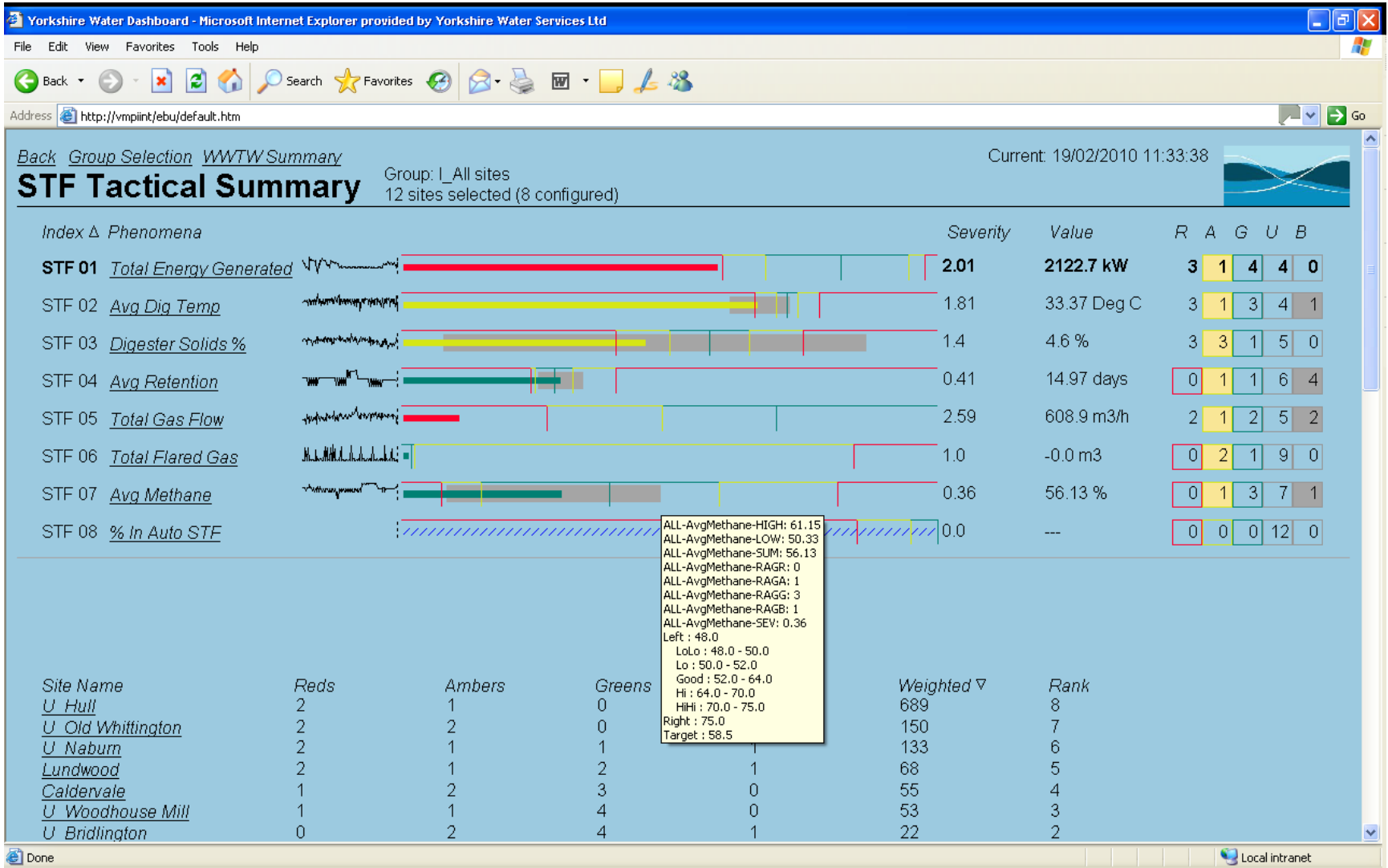


- **PI Enterprise Server (R3.4.380.36)**
- **High Availability Collective (2 servers)**
- **Development Server (Pi-to-Pi I/F)**
- **Module Data Base**
- **PI-AF Server**
- **PI-Notifications**
- **PI-Process Book and Active View**
- **PI-Alarm Viewer**
- **Thick Client Solutions**

# Telemetry Data Service - Year 1 (OSI-PI)



# Dashboards EBU Shining Star Sites - Year 1



# Control Room Alarms - Year 1



PI AlarmView

File Edit View Tools Help

History Search

Alarm Hierarchy

Alarm Groups

- PIPRDHA
  - Clean Water Business Unit
    - East Distribution & Customer Services
      - East
        - Doncaster Service Delivery
        - Hull Service Delivery
      - Mid-Yorkshire
        - Leeds Network Management
        - Leeds Service Delivery
        - Leeds West Service Delivery
      - North
        - Dales Network Management
        - Harrogate Network Management
      - West Distribution and Customer Services
        - Bradford and Craven
          - Bradford Network Management
          - Craven Network Management
        - Calder
          - Dewsbury Network Management
          - Halifax Network Management
          - Huddersfield Network Management
        - South Pennine
          - Rotherham Network Management
          - South Pennine (City) Service Delivery
  - > Alarms in Test
    - Distribution Monitoring
    - Configuration Work In Progress

Current Alarms - \\PIPRDHA\CV

Start Time	Sequence Start	Description
10/05/2010 08:11:41		E133 BROMPTON - NEWSHAM_GRANGE_DG2_PRS
04/05/2010 11:44:15		E087 WHOLEY 5 INCH - GILSFORTH_HILL_DG2_PRS
10/05/2010 09:59:28		B567 OTLEY NORTH - THE_WHARTONS_87_DG2_PRS
11/06/2010 11:36:43		B540 PICKLES LANE - WINDERMERE_RD_57_DG2_PRS
10/05/2010 08:12:08		B641 APPERLEY BRIDGE - HARROGATE_RD3_DG2_PRS
16/09/2010 16:09:24		C438 SHEPERDS BOY - HUDDERSFLD_RD2_INLET_FLW
20/09/2010 11:30:00	20/09/2010 11:30:00	B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS
01/09/2010 17:45:00	29/08/2010 00:45:00	E081 ROECLIFFE - CROWN_INN_DG2_PRS
08/09/2010 10:00:00	08/09/2010 10:00:00	E006 STUFORTH - CUNDALL_MANOR_DG2_PRS
04/08/2010 14:48:32		E084 THORPE ARCH - CHURCH_HILL_HNSNGR_DG2_PRS
22/07/2010 08:44:00		E144 THORMANBY - IVY_HSE_FARM_DALTON_DG2_PRS
04/08/2010 14:48:32		E026 HIGH LEVEL SOUTH LEEDS RDA - CHURCH_L_BRMFD_DG2_PRS
19/07/2010 16:44:00		E122 LEYBURN (TOWN) - WOODSIDE_LEYBURN_DG2_PRS
23/08/2010 13:15:00		B634 MOORFIELDS - HIPSWELL_ST_DG2_PRS
04/08/2010 14:48:39		E114 HIGH SHAW - THE_HOLME_BRIDGE_DG2_PRS
16/09/2010 15:30:00		B572 MENSTON - DERRY_HILL_61_DG2_PRS
20/09/2010 11:15:00	20/09/2010 11:15:00	E164 GAYLE (HAWES) - GAYLE_LANE_2_EXPORT_FLW
20/09/2010 11:15:00	20/09/2010 11:15:00	E164 GAYLE (HAWES) - GAYLE_LANE_1_INLET_FLW
04/08/2010 14:48:33		E120 REETH - E_END_FM_MARRICK_DG2_PRS
20/09/2010 04:15:00	09/09/2010 21:45:00	C215 NORTON TOWER - HIGH_LANE_25_DG2_PRS
08/09/2010 12:15:00		C414 BILL LANE - BANK_LANE_DG2_PRS
07/09/2010 12:30:00	24/08/2010 19:00:00	C404 YEW TREE - BROADFIELD_2_DG2_PRS
04/08/2010 14:48:35		C406 HOLMS ROW - INLET_LANE_26_DG2_PRS

Alarm Properties

THOMPSON\_GRN\_7\_DMP/THOMPSC

Alarm

AlarmGroup: \\PIPRDHA\CV\W\_W  
 AlarmType: PIAAlarm  
 AutoAck: No  
 Description: B593 BAILDON GREEN  
 DigitalSet: \\PIPRDHA\pialarm33  
 GroupName: W\_NM\_CVN  
 Name: THOMPSON\_GRN\_7  
 Path: \\PIPRDHA\THOMPSC  
 ServerName: PIPRDHA

Data

ConditionName: L0W  
 IsNormal: False  
 SourceTag: THOMPSON\_GRN\_7  
 SourceValue: 35 m head

Extra Info

ExtraInfo2:  
 ExtraInfo3:  
 ExtraInfo4:  
 Mimic: <http://VMPINT/RT>

PI Alarm

ControlTag: THOMPSON\_GRN\_7  
 Deadband: 0  
 Options:  
 ReferenceTag:

PI Alarm Tests

Action	Test
Action1	Test1
Action2	Test2
Action3	Test3
Action4	Test4

Test1: High 1  
 Test2: GT (59.54)  
 Test3: LT (34.94)  
 Test4:

Displayed Servers

PIPRDHA

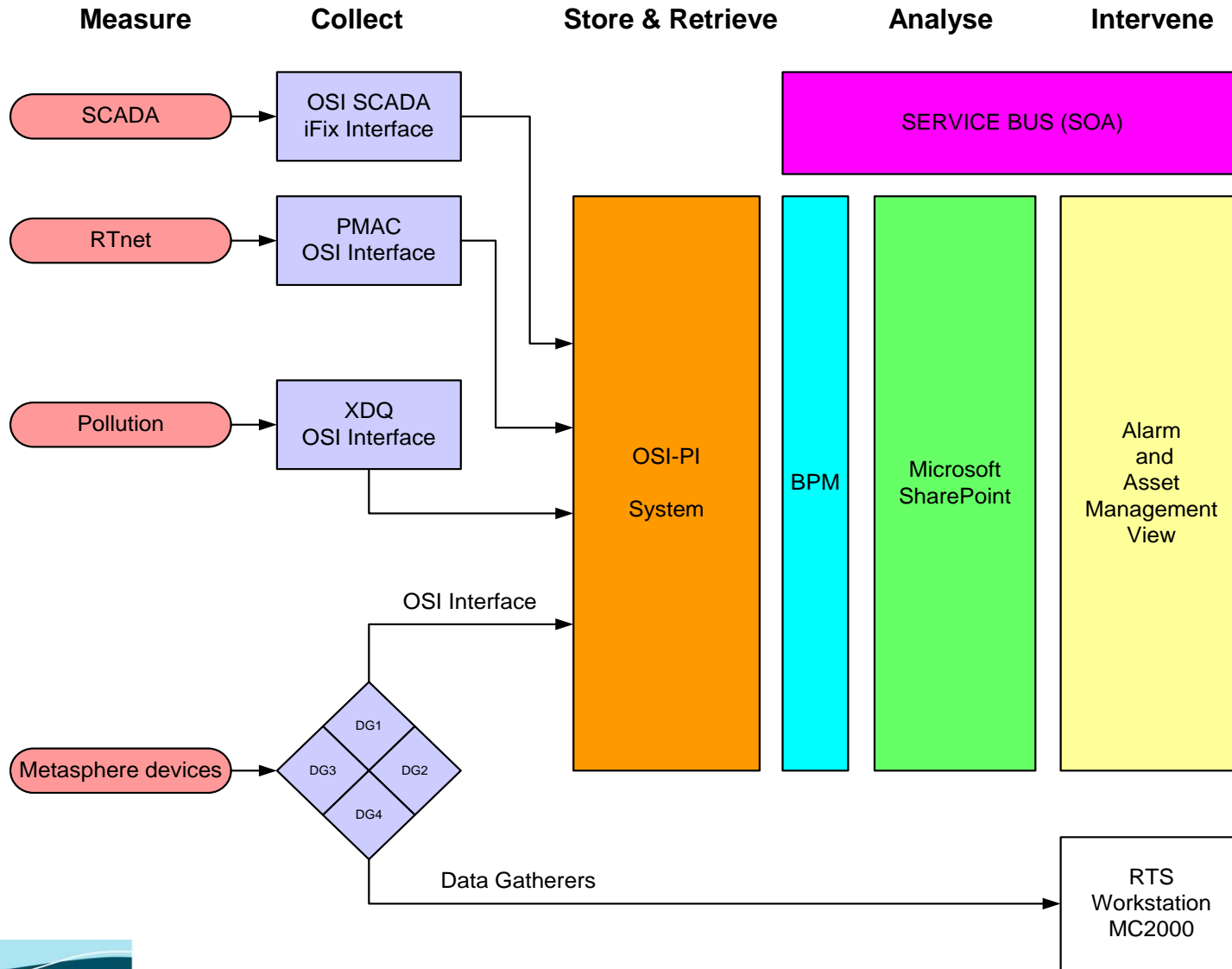
History Results

Start Time	Description	End Time	Duration
16/09/2010 22:45:00	B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS	18/09/2010 16:45:00	1.18
16/09/2010 22:45:00	B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS	16/09/2010 23:00:00	00:15
16/09/2010 23:00:00	B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS	17/09/2010 09:49:54	10:49
17/09/2010 09:49:54	B593 BAILDON GREEN - THOMPSON_GRN_7_DG2_PRS	17/09/2010 09:49:54	00:00

YW\crowther Ready 20/09/2010 11:36:00



# Telemetry Data Service - Year 2+ (AMP5)





Time	Channel	Device	Priority	State	Value	
6/15/2010 3:08:34 PM	JSONPresentationService	SYSTEM: SPDEV001	0	New	Started	
6/15/2010 3:08:34 PM	PresentationService	SYSTEM: SPDEV001	0	New	Started	
6/15/2010 3:08:34 PM	AlarmSourceService	SYSTEM: SPDEV001	0	New	Started	
6/15/2010 3:08:30 PM	AlarmProcess	SYSTEM: SPDEV001	0	New	Started	
5/21/2010 10:34:16 AM	p0	os1	0	New		
5/21/2010 10:34:16 AM	p1	os1	0	New		
5/21/2010 10:34:16 AM	p10	os1	0	New		
5/21/2010 10:34:16 AM	p100	os1	0	Accepted		
5/21/2010 10:34:16 AM	p101	os1	0	Accepted		
5/21/2010 10:34:16 AM	p102	os1	0	Noted		
5/21/2010 10:34:16 AM	p103	os1	0	Noted		
5/21/2010 10:34:16 AM	p104	os1	0	NotedCleared		
5/21/2010 10:34:16 AM	p105	os1	0	NotedCleared		
5/21/2010 10:34:16 AM	p106	os1	0	New		
5/21/2010 10:34:16 AM	p107	os1	0	New		
5/21/2010 10:34:16 AM	p108	os1	0	Cleared		
5/21/2010 10:34:16 AM	p109	os1	0	Cleared		

- **PI-Server 2010 Upgrade**
- **MS SharePoint 2010**
- **MS Silverlight 4.0 and AvePoint**
- **More PI-Notifications (Alarms)**
- **More PI-AF (Less Module Database)**
- **Business Process Management (BPM)**
- **Intelligent Alarm Management**
- **Web Services and Thin Client Solutions**
- **Service Oriented Architecture (SOA)**

Any Questions ? .....



Thank you

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777 Davis St., Suite 250 San Leandro, CA 94577