

Solutions Overview



Who Are Metasphere?

- A Telemetry Products and Services Provider
- 30 yrs + providing telemetry solutions into Utilities for Network Control
- UK Based Organisation with international foothold & aspirations to grow...
- 6 Major Frameworks
- 2 International
- 6 UK utilities (Water, electricity and gas)
- Growing hosted telemetry business for industrial & commercial users

We provide Robust asset monitoring of time critical remote operations for Operators to gain competitive advantage and meet regulatory compliance.

- ISO 9001 - Quality Management
- ISO 14001 – Environmental Management
- TickIt+ - IT Quality standard, Software Development
 - 12th Company in the world to achieve.
- Achilles – UK Utility Vendor Database
- British Water
- Australian Water Association
- Founder Member of WITS (UK Water Industry Telemetry Standards) and current committee member in Mark Davison.
- Plus individual professional memberships, IoD, APM etc.

- **Telemetry Systems**

- Regional & Site SCADA

- **Water**

- Level, Pressure & Flow Monitoring
- Environmental monitoring m- rivers, reservoirs, canals, etc.
- AMR (Automated Meter Reading Reading)
- Leakage Management



- **Wastewater**

- CSO (Combined Sewer Overflow) Monitoring
- Private Sewer Networks
- Sewage Pumping Stations



- **Energy**

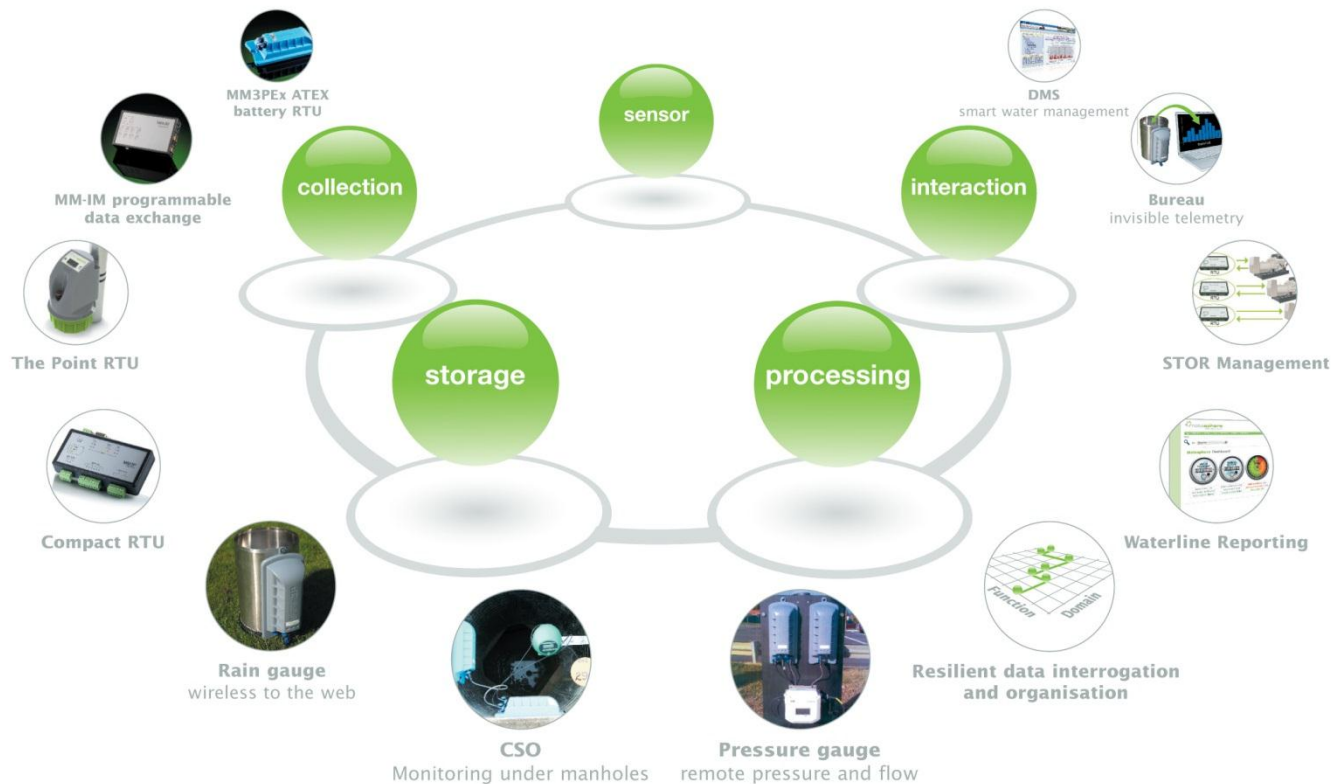
- **Oil and Gas**

- **M2M applications**

- **Remote plants and assets monitoring**



Data Journey



RTU/Outstation Experience

- **Point Range**

- Green
- Orange
- Blue (ATEX & IECex)

- **MM-IM**

- 4000 Point RTU/Site Controller
- Pumping Station Manager

- **Compact RTU**

- **MM3P**

- Standard
- ATEX



Point Colour

- WITS-DNP3, DNP3, Medina, Standalone
- Software configurable IO; DI, DO, AI, AO (Over 100 options)
- In-built Submersion sensor removing the need for float Switches.
- DC power options alongside internal & External Lithium battery packs.
- HART, UART
- Complex Control Capability, Utilises Straton IEC 61131 programming environment alongside simple Windows config app.
- Remote Firmware & Config Updates
- .csv uploads via FTP & SFTP.
- IP68
- Single Push fit connector – Ease of Installation in all weather conditions



MM-IM

- Multiple communications ports
 - 4 serial (RS232/RS485)
 - 2 Ethernet
 - 4 USB
 - Multiple protocols
 - WITS-DNP3 & DNP3
 - Medina, A-B DF1, Modbus, EthernetIP
 - On board IO option (16DI)
 - Expansion options
 - I/O via Modbus. EthernetIP e.g. (Wago, Beckhoff, or A-B PLC)
 - Open operating system
 - Linux
 - Easy to add new functionality, e.g. new protocols
- IEC61131: Straton (All languages)
 - Typical applications:
 - Small, medium and large sized works
 - PLC/MCC/smart sensor to telemetry integration
 - IP to Serial data integration

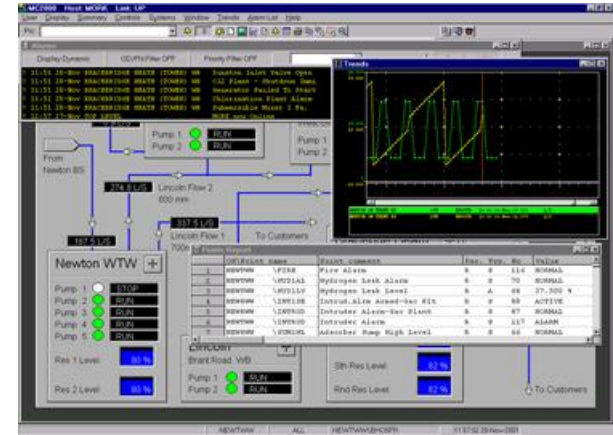


Fully functional telemetry/SCADA

High reliability

Extreme scalability

Flexible communications options

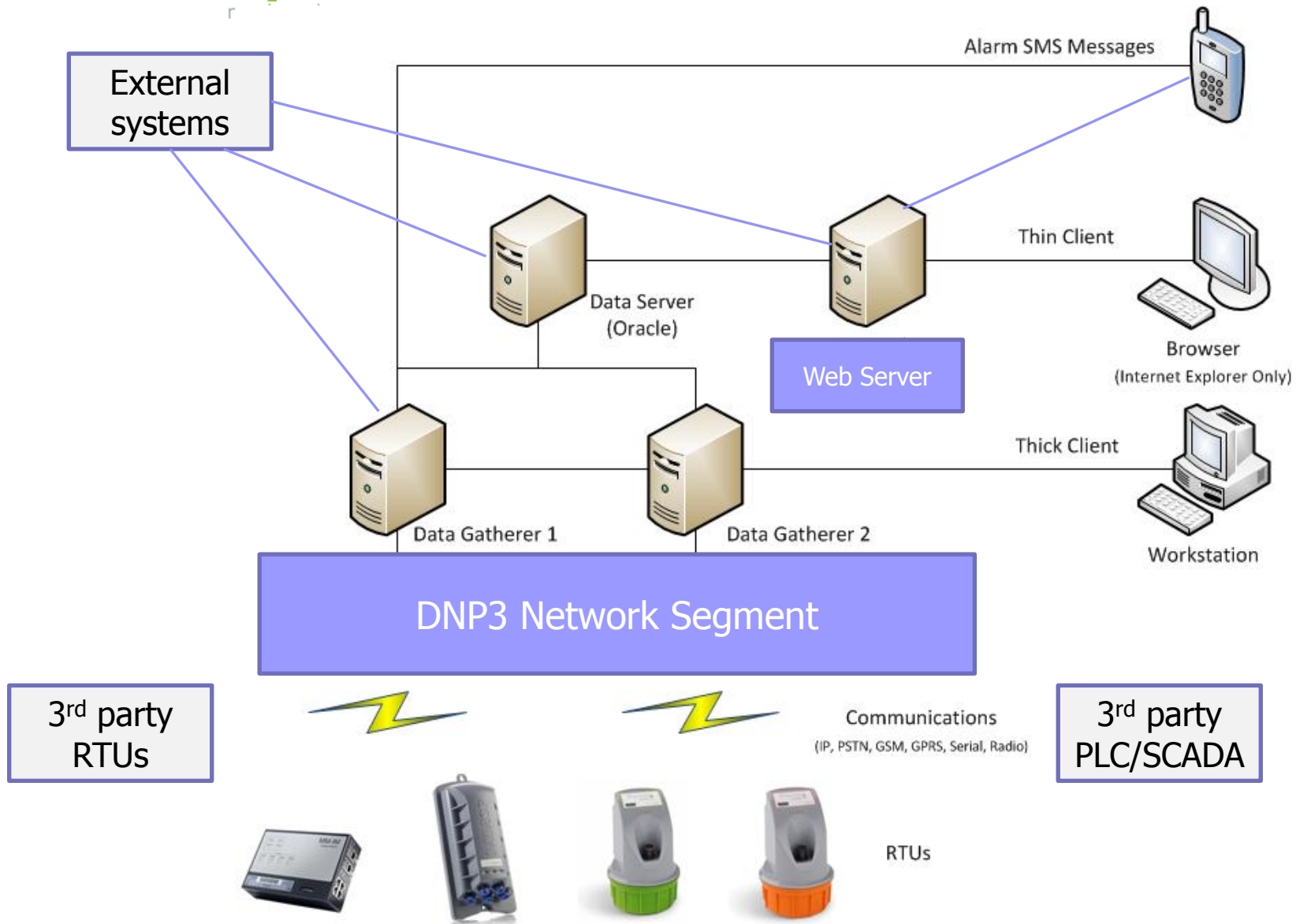


Master Control supports a very wide range of communications media including fixed link, scanning radio, PSTN, GSM, GPRS, IP WANs, and satellite.

Historian and web access

Interfacing to business systems

Master Control has been enhanced over the years to provide a range of standard solutions to allow interfacing of telemetry/SCADA data with other business systems such as GIS, work management and asset management.



DNP 3 Modbus Comparison Summary

Feature	Modbus	DNP 3
Open Domain	🕒	🕒
Active Users Group	🕒	🕒
Active Technical Committee	🕒	🕒
Certification procedures	🕒	🕒
Multiple Data Types	🕒	🕒
Standardized data formats		🕒
Time-stamped data		🕒
Data quality indicators		🕒
Report by Exception (RBE)		🕒
Unsolicited RBE		🕒
2-pass control operations		🕒

https://87.224.11.162:8443/metasphe-~~ui~~/ui/#!OwningDomain/0&Map - Google Chrome

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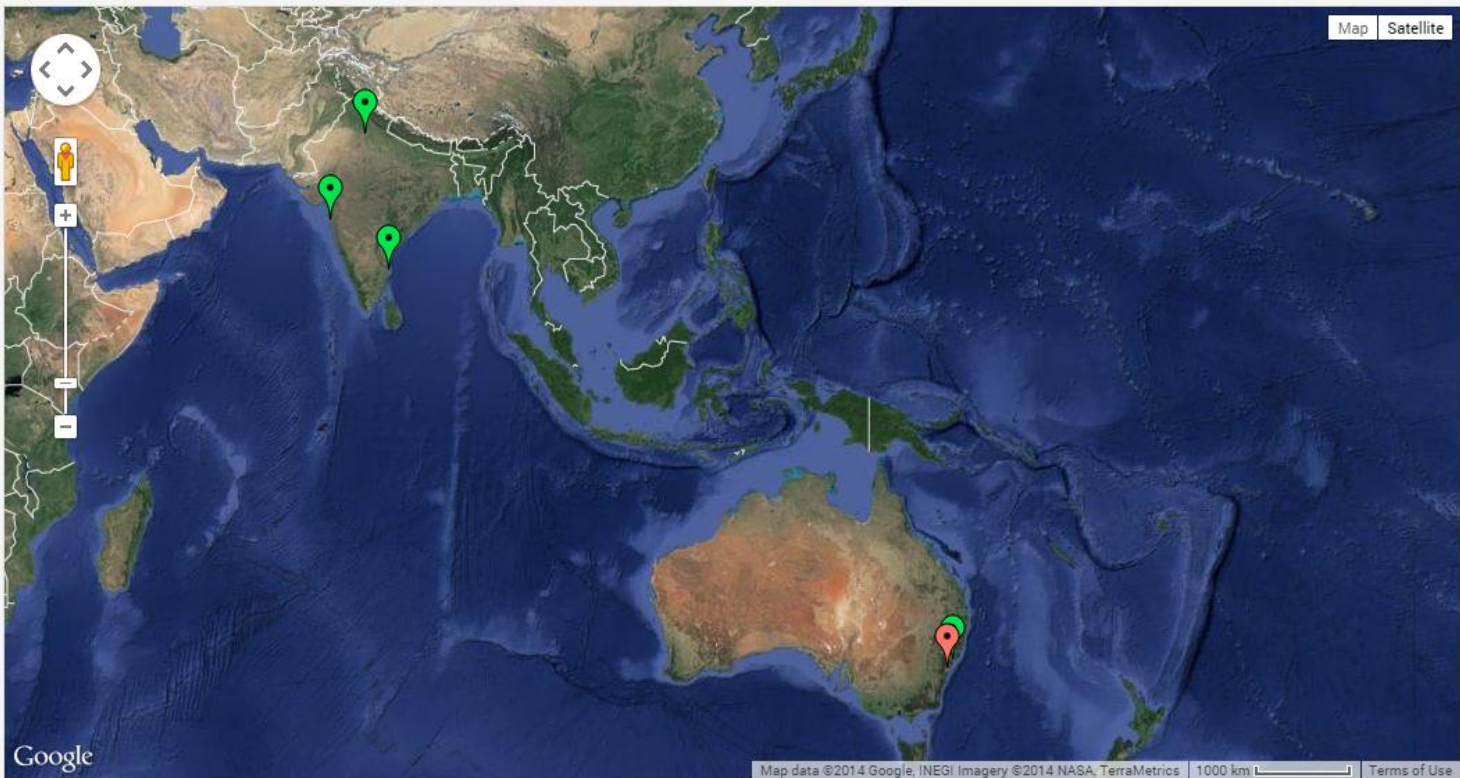
▼ Metasphe Bureau Service

- ▶ All test devices belong here
- ▶ All Live data belongs here
- 📶 BUR2DG
- 📶 BUR1DG
- 📶 SENSDEV_1
- 📶 SENSDEV_2
- 📶 IMPRESS_1

RECENT HISTORY (SITES)

Metasphe Bureau Service

Map View

 Map Satellite

Google

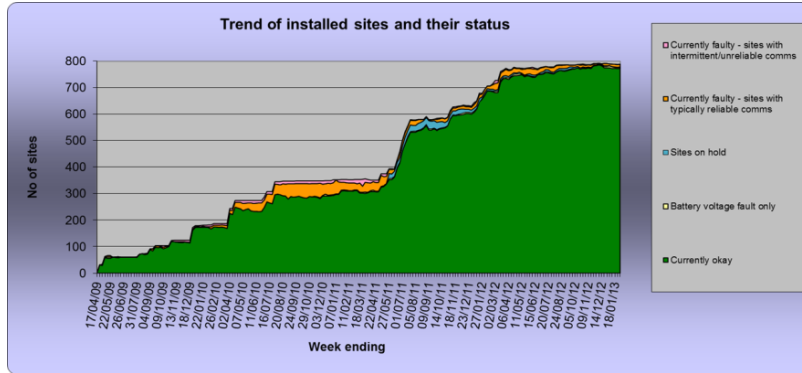
Map data ©2014 Google, INEGI Imagery ©2014 NASA, TerraMetrics | 1000 km | Terms of Use

Remote Communications There are Plenty of Options!

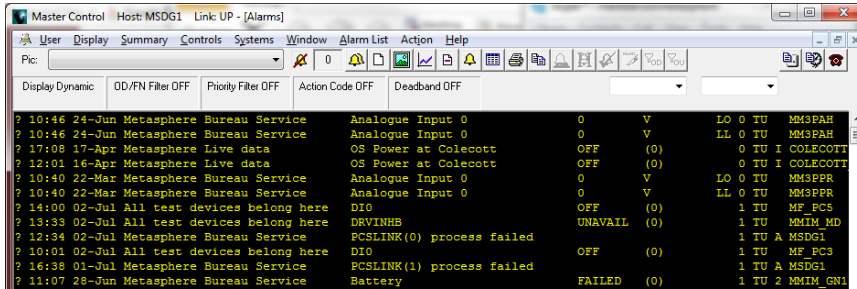
- GSM
- GPRS
- Fixed Point to Point Radio UHF/VHF
- Scanning Radio
- Mesh Radio
- 3G
- 4G
- Whitespace (Analogue TV band allocations)
- The Internet of Things (IoT)



Collect data remotely from key points within a network



Level Monitoring



Collect data remotely from key points within a network



OCM Monitoring



AMR (Automated Meter Reading)



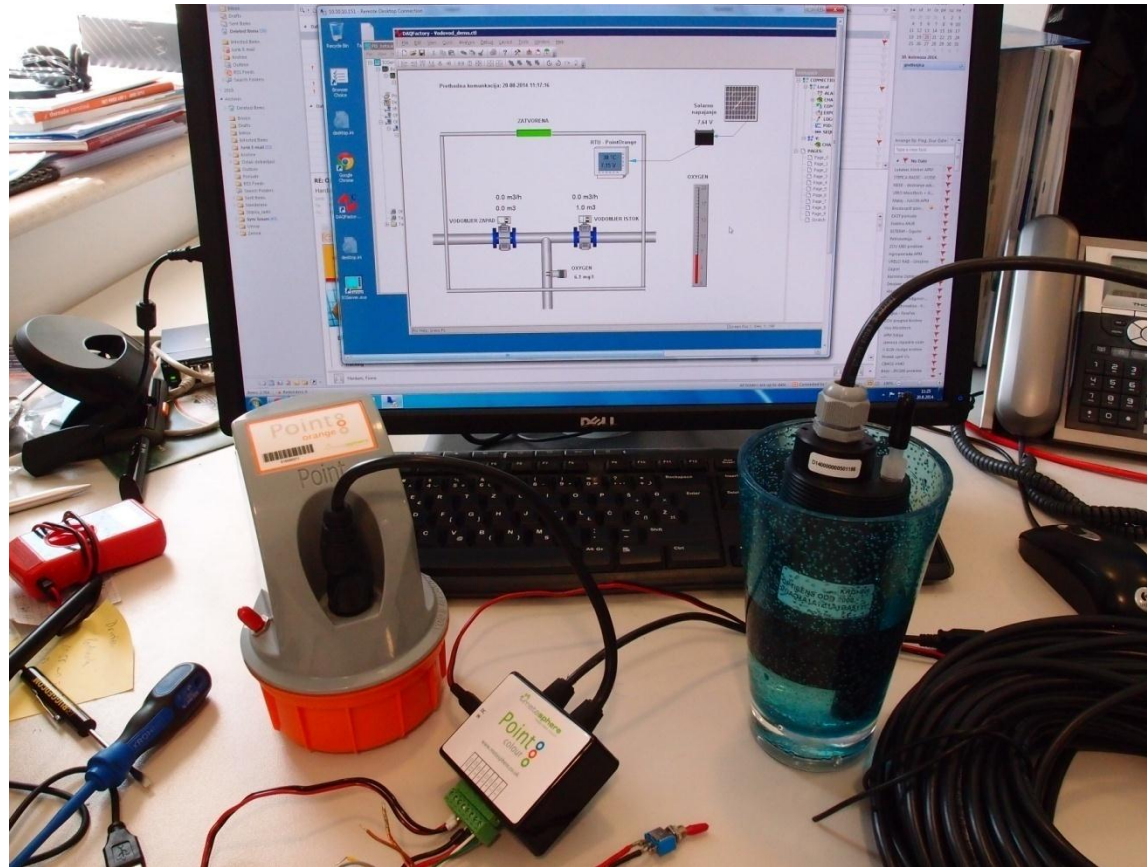
Water Efficiency & Consumption

Benefits of Metasphere Solution

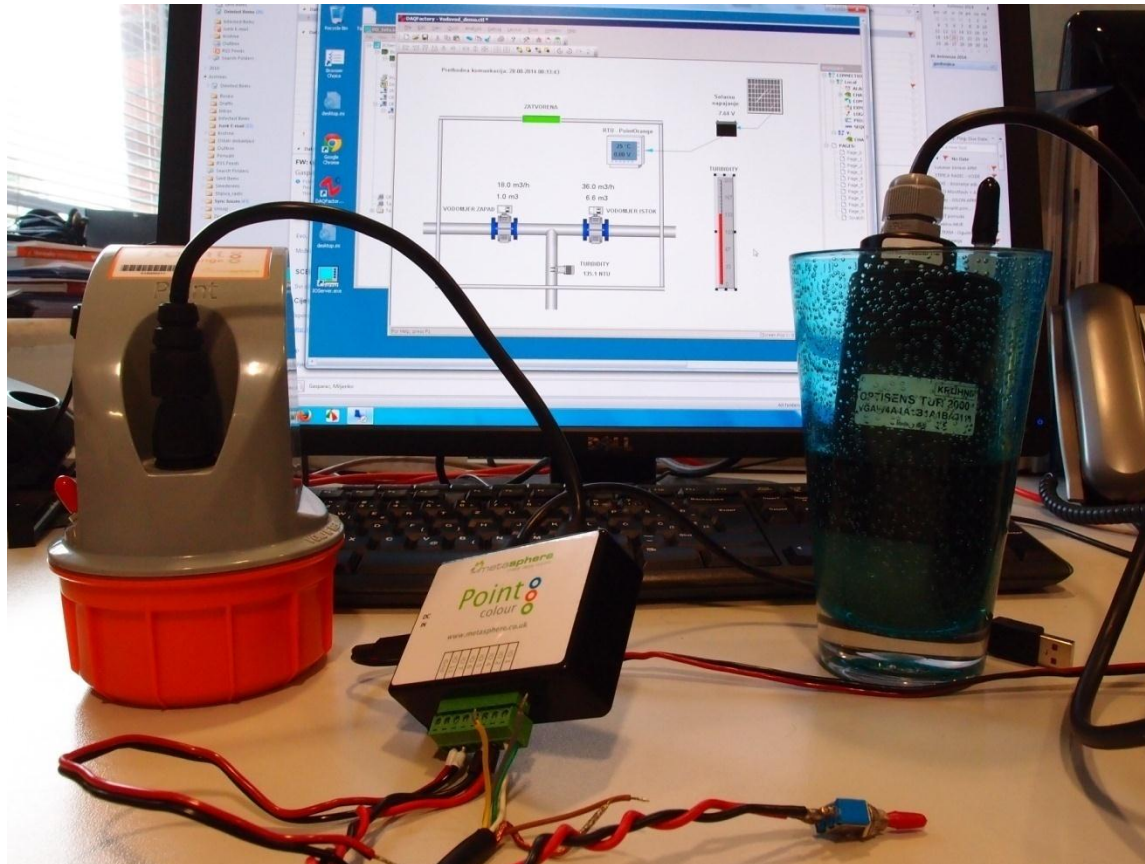
- Manage DMA (District Metering Area)
- Monitor to change behaviour & culture
- Reduce operating costs
- Lower carbon footprint



DISSOLVED OXYGEN



TURBIDITY





Sydney Water

Production Management



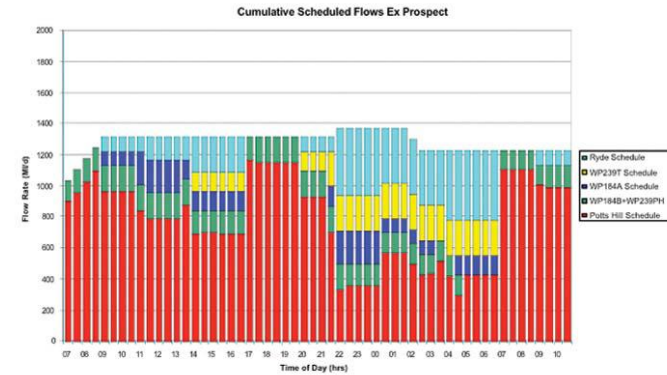
- Reduced or deferred capital costs
- Saves energy costs
- Increased operational flexibility

- Stabilised flow rate and ensured optimal operations
- Easier stabilisation of water quality, significant annual saving in chlorination costs

Sydney Water

MC monitors and controls over 2,000 geographically distributed locations ranging from pressure monitors and flow meters to pumps and reservoirs.

The scope is: over 18,000 kilometres of mains, 14 dams 268 service reservoirs, 153 pumping stations and 11 filtration plants. 1250 Remote Telemetry Units monitor these assets in the MC system and give personnel, based in an operations centre, the ability to check the state of valves, reservoir levels or water pressure at any location within a 150km radius.



- 1 Systemic control of water and wastewater**
- 2 Incident Management**
- 3 Energy Management**
- 4 Resource Utilisation**
- 5 Condition monitoring of assets**
- 6 Derived information**
- 7 Central data storage and archiving.**

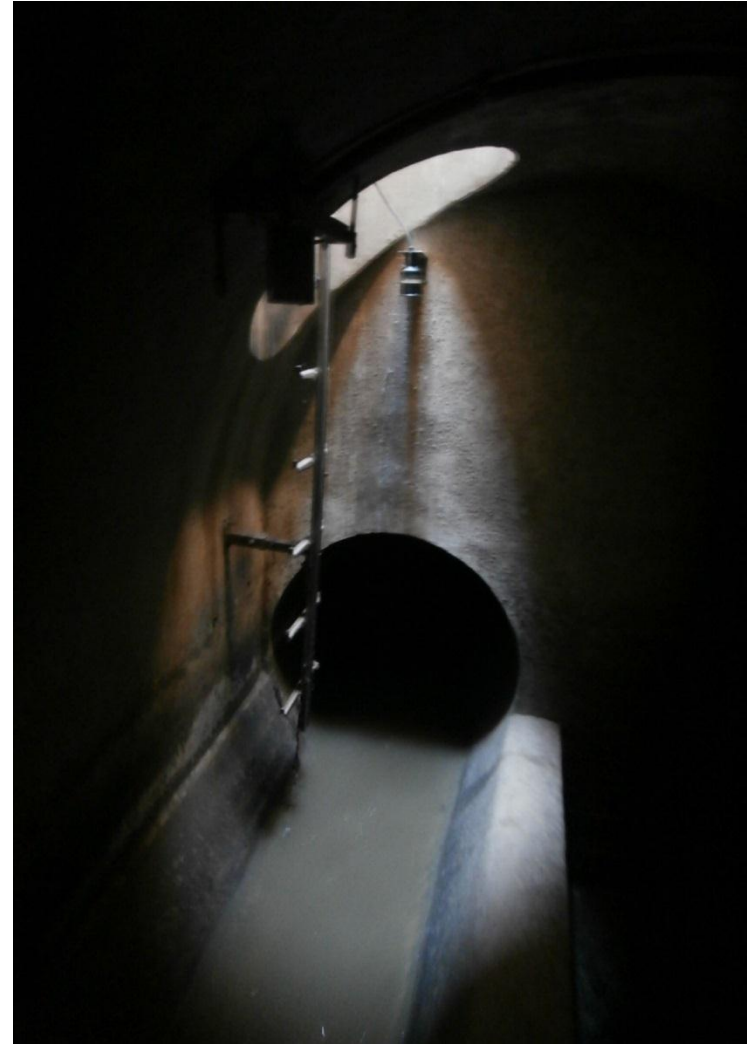
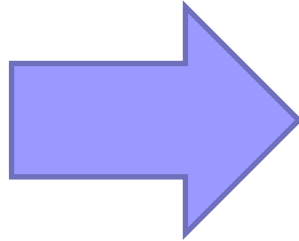
Offline hydraulic models provide guidance for future settings of operational parameters and these are fed into MC as dynamic configurable variables.

Water Utility Profile

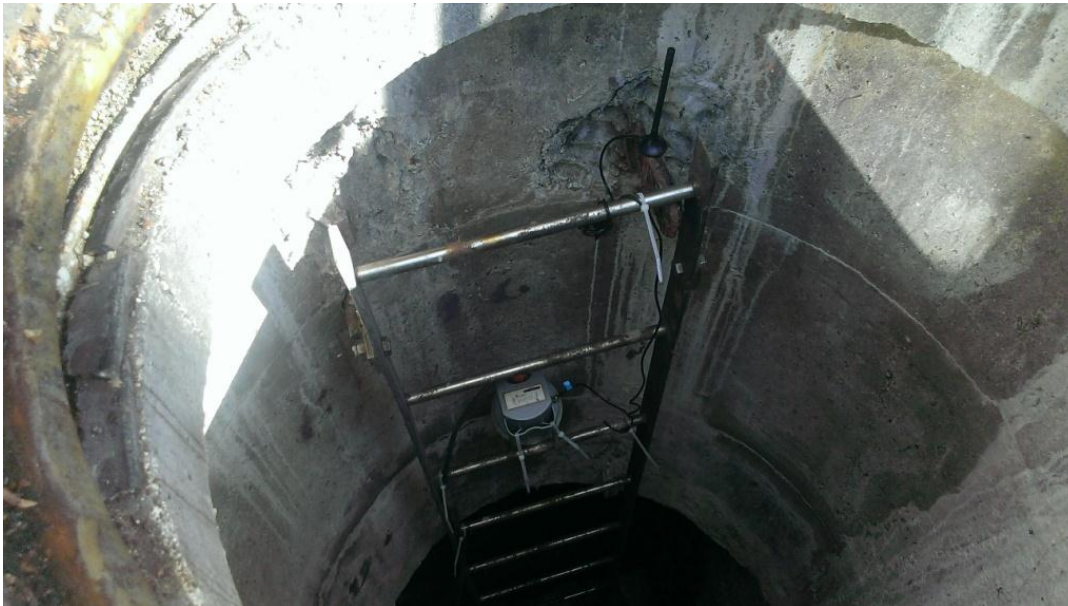
- Territory: 27,500 sq km
 - Largest in UK
- Customers Served: 5.6 million properties
 - >2 million customer calls pa
- Network
 - 36,462 km of Water Mains
 - ...lowest leakage in industry
 - 279 reservoirs, 138 WTW
- SCADA: MetaSphere Master Control regional telemetry
- GIS: Intergraph G Technology
- CRM: SAP



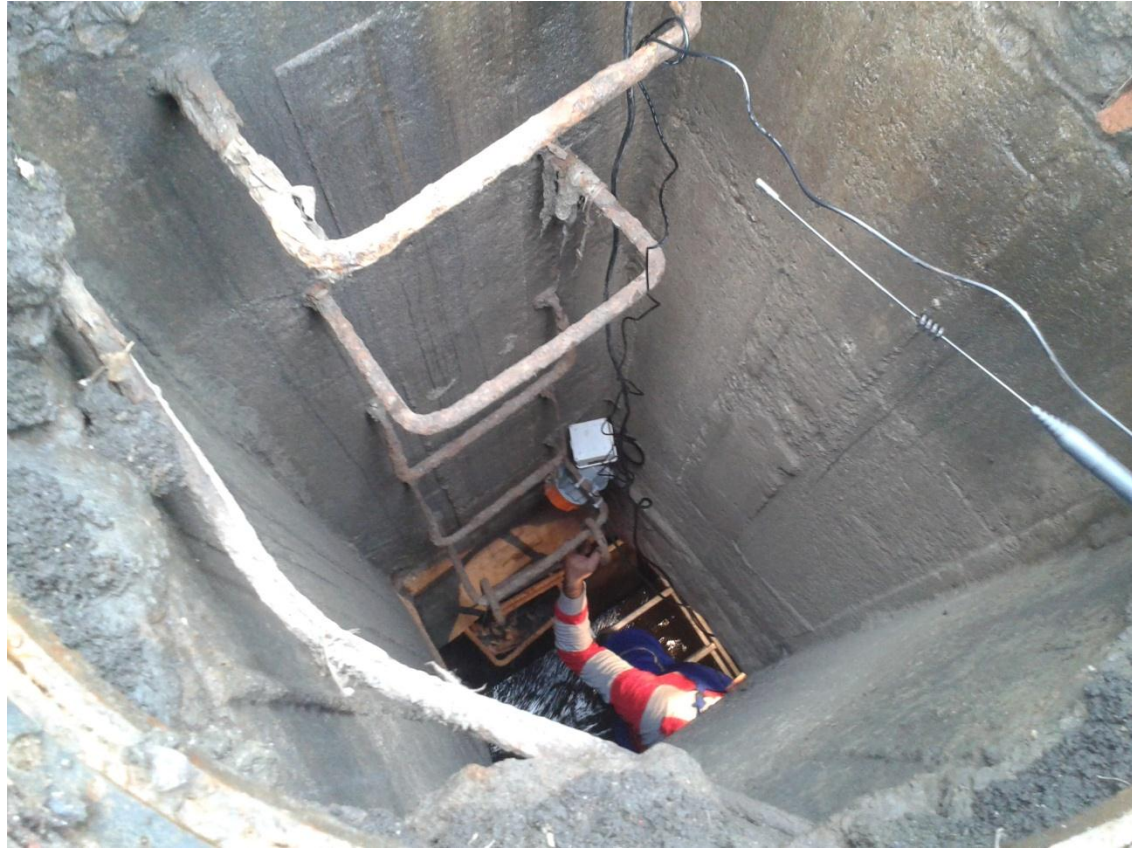
Removing Barriers to Monitoring



Ljubljana, Slovenia CSO monitoring



Stara Zagora CSO monitoring



Ruse, Bulgaria DMAs monitoring

