



# Autonomous RTUs IoT for Water Telemetry



## Internet of Things Networks & Technologies





**DISTRIBU**TECH<sup>®</sup>  
CONFERENCE & EXHIBITION

**USA/New Orleans 2019**

**#DTECH\Gen 5 SN**



**Gen 5  
Sensor Node**



## Water resources management

- Level & flow
- Groundwater monitoring
- Lake and reservoir level monitoring
- Leak detection in distribution pipelines
- Sewer water monitoring
- Water quality monitoring



# IoT Autonomous devices

---

## ADS-410, Itron IoT wireless end nodes

Autonomous IOT unit to connect any sensor for telemetry applications. The unit sends data to the cloud using the Itron Network.

It incorporates the Milli 5 embedded wireless communication module for connection to this network. The unit is battery powered for autonomous operation.

The purpose of the device is to connect multiple sensors from any vendor such as analogue (0-20mA, 0-1V), SDI12, RS485 Modbus, measure and transmit the data over the Itron network.

The ADS-410 can also power the sensors with up to 250mA@12VDC using its 3.6V lithium battery.

All telemetry applications can be realized with the ADS-410.

# IoT Autonomous devices



## ADS-410, Itron IoT wireless end nodes

Power supply:	3.6V, 13-18 Ah Lithium Thionyl battery, D-size 5VDC mains or photovoltaic power
Consumption :	Continuous 18μA
Discrete inputs:	IN1, configurable as: Digital input, 0-30VDC Analog input, 0-1VDC, 12 bit resolution Digital counter, 1 KHz
SDI-12 Bus:	8 Channels, up to 3 sensor support.
RS-485, MODBUS:	8 Channels, up to 3 sensor support, ASCII/RTU.
Transducer excitation	12V/250mA, 5V/200mA
Wireless modem:	Milli 5 Itron Silver Spring networks
Antenna	internal or external
Messages:	Data, Alarm
Temperature:	-20°...+65°C, operating
Dimensions:	79.5 x 125 x 61 mm (with cable gland)
Housing:	IP66, IP68 Nema 4x

## Battery lifetime

ADS-410 RTU/Itron powered by one 3.6V, 13Ah lithium-thionyl battery

Excitation @12V [mA]	Sample/Send rate [S/hour]	Sampling delay [sec]	Battery life [Years]
1	4	1	6.9
1	12	1	4.7
1	30	1	2.7
25	6	1	2.6
25	30	1	1
5	4	1	6.2
5	6	1	5.4
5	30	1	2.1
25	4	5	1.8
50	4	5	1
100	4	5	0.5

# IoT Autonomous devices

## ADS-300, NB-IoT/LTE-M RTU



Power supply:	3.6V, 13-18 Ah Lithium Thionyl battery, D-size 5VDC mains or photovoltaic power
Consumption :	Continuous 18μA
Discrete inputs:	IN1, configurable as: Digital input, 0-30VDC Analog input, 0-1VDC, 12 bit resolution Digital counter, 1 KHz
SDI-12 Bus:	8 Channels, up to 3 sensor support.
RS-485, MODBUS:	8 Channels, up to 3 sensor support, ASCII/RTU.
Transducer excitation	12V/250mA, 5V/200mA
Wireless modem:	Sierra Wireless NBloT, LTE-Cat M1
Antenna	internal or external
Messages:	MQTT Data/Alarm, remote configuration
Temperature:	-20°...+65°C, operating
Dimensions:	79.5 x 125 x 61 mm (with cable gland)
Housing:	IP66, IP68 Nema 4x

## Water application SDI12 & Modbus sensors



Submersible water level sensors



Ultrasonic water level



Water velocity

## Multiparameter Sensors

Temperature, Conductivity, Depth, pH, Dissolved Oxygen, Turbidity, ORP, Blue-Green Algae, Chlorophyll, Ammonium, Nitrate, Chloride



# Sensors

---

Surcharge Velocity sensor



Correlation Sensor



Sewer level



Water Quality

# Sensors

---



All in one weather

Ambient  
Humidity & Temperature

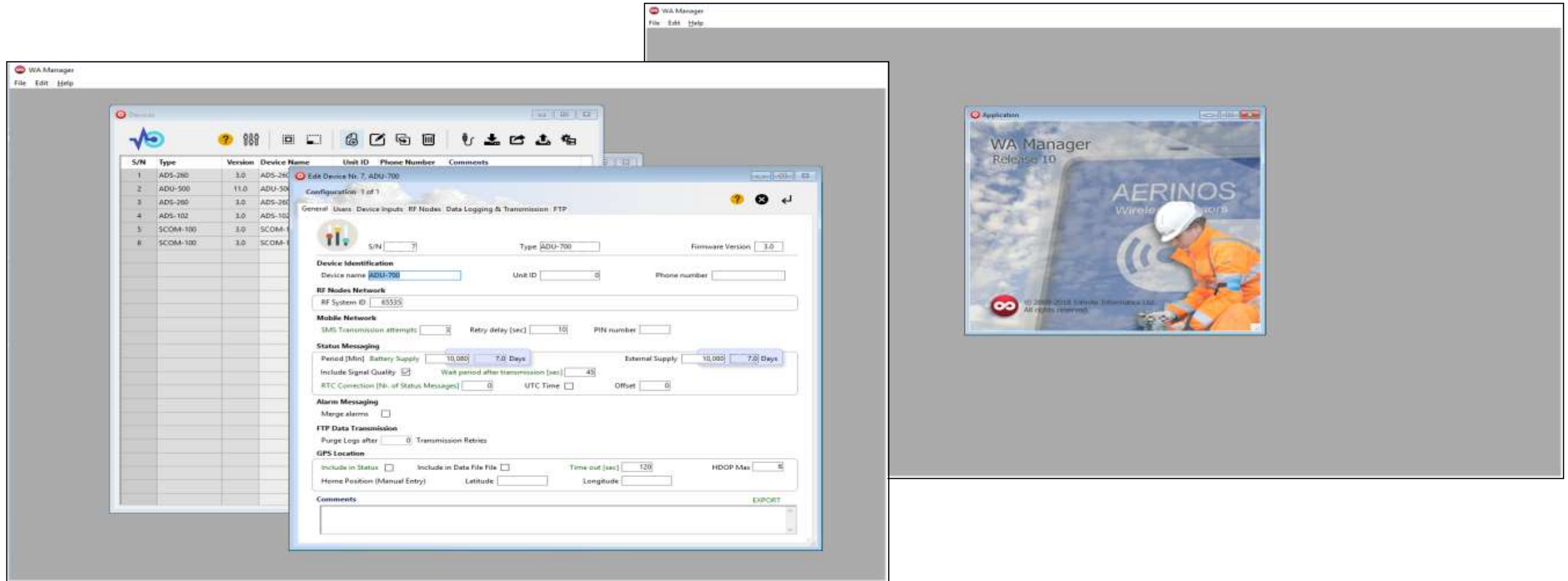


Valve



# Configuration Software

## New WAManager configuration tool



# Losant - Cloud Telemetry

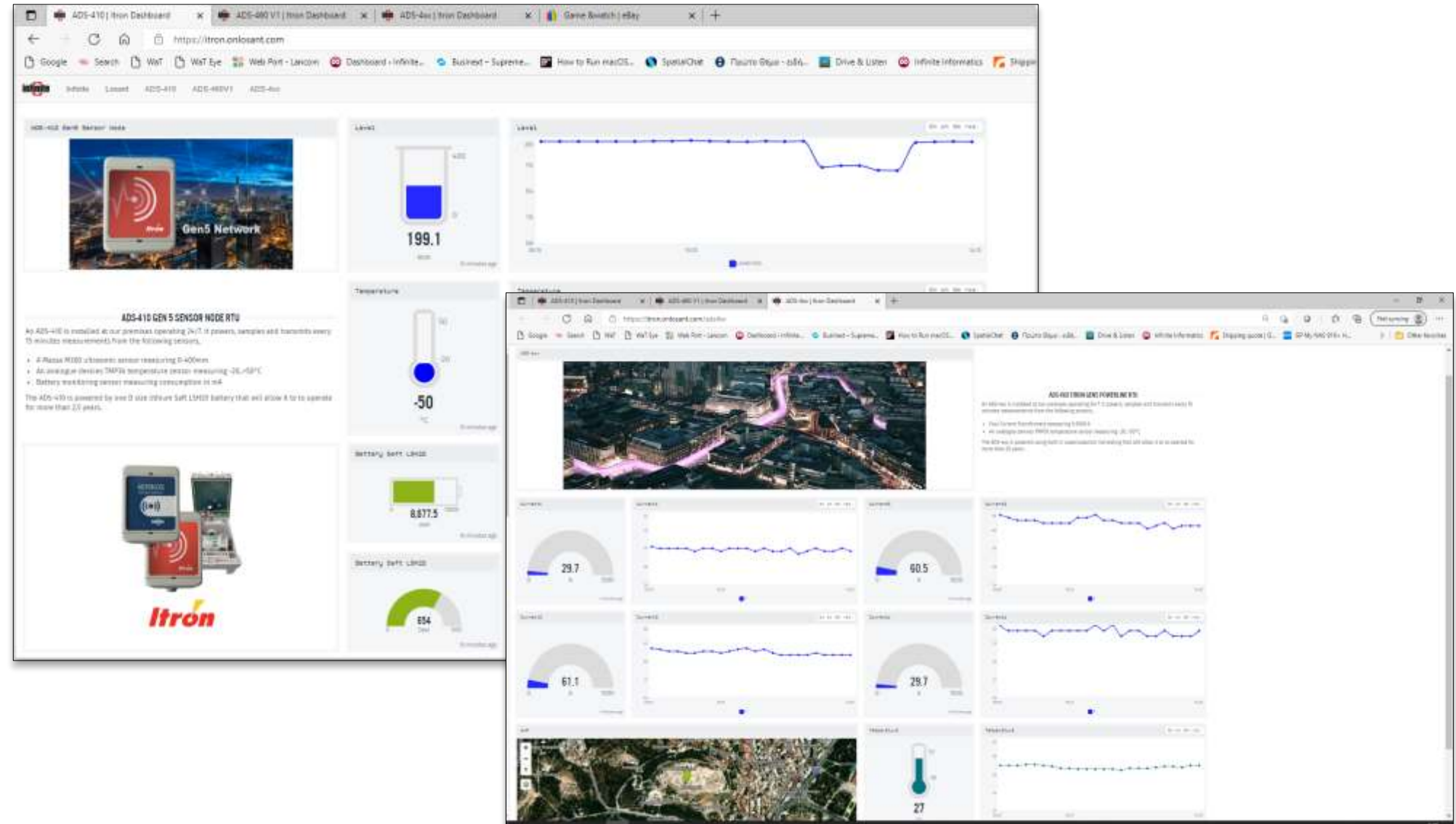


Live at Losant  
ADS-410, ADS-460, ADS-470

<https://itron.onlosant.com>

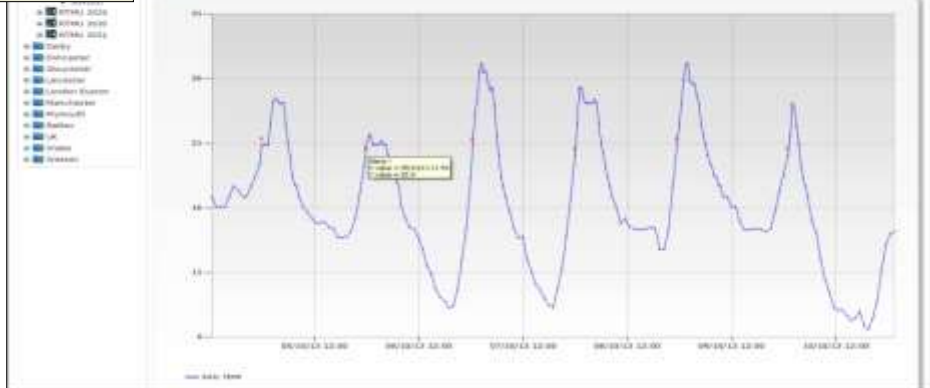
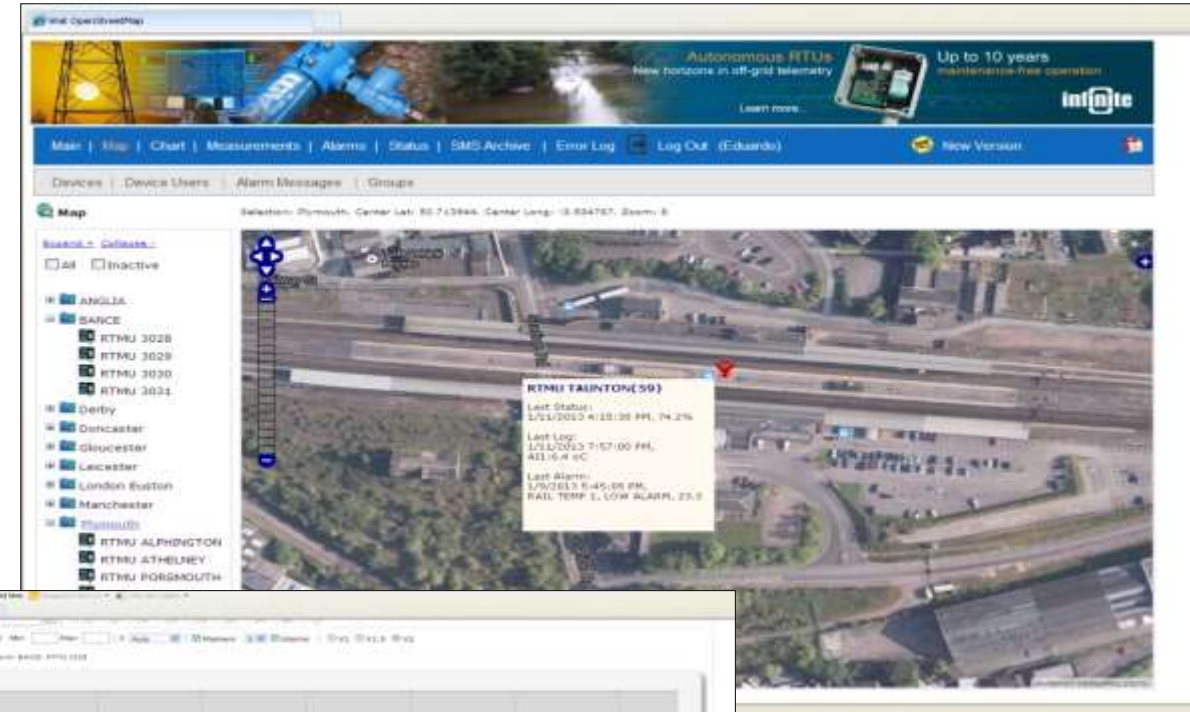
User: guest@infinite.com.gr

Pass: infiniteitron



# WaT - Web aided Telemetry

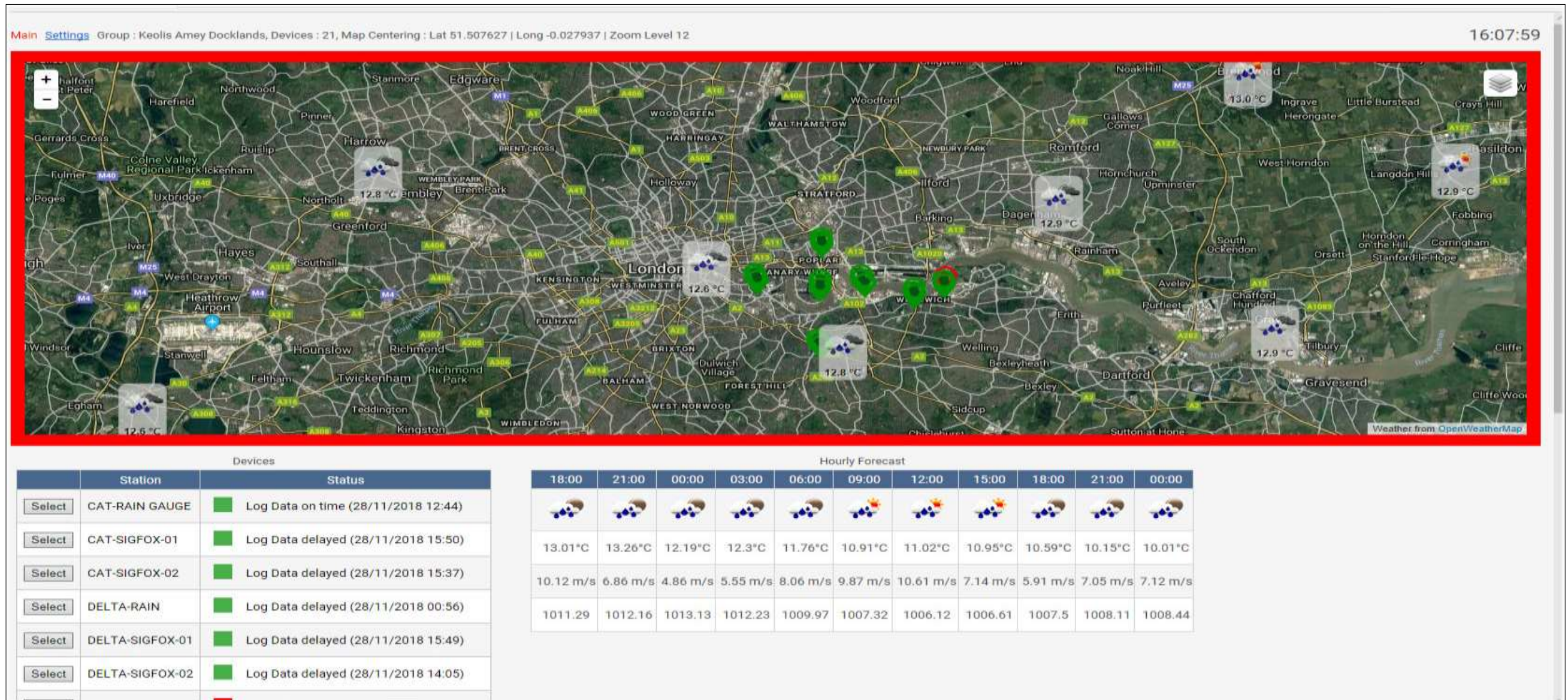
## Cloud telemetry platform with GIS information



# IoT Autonomous RTUs

# Cloud Telemetry

# WaTeye - Dashboard

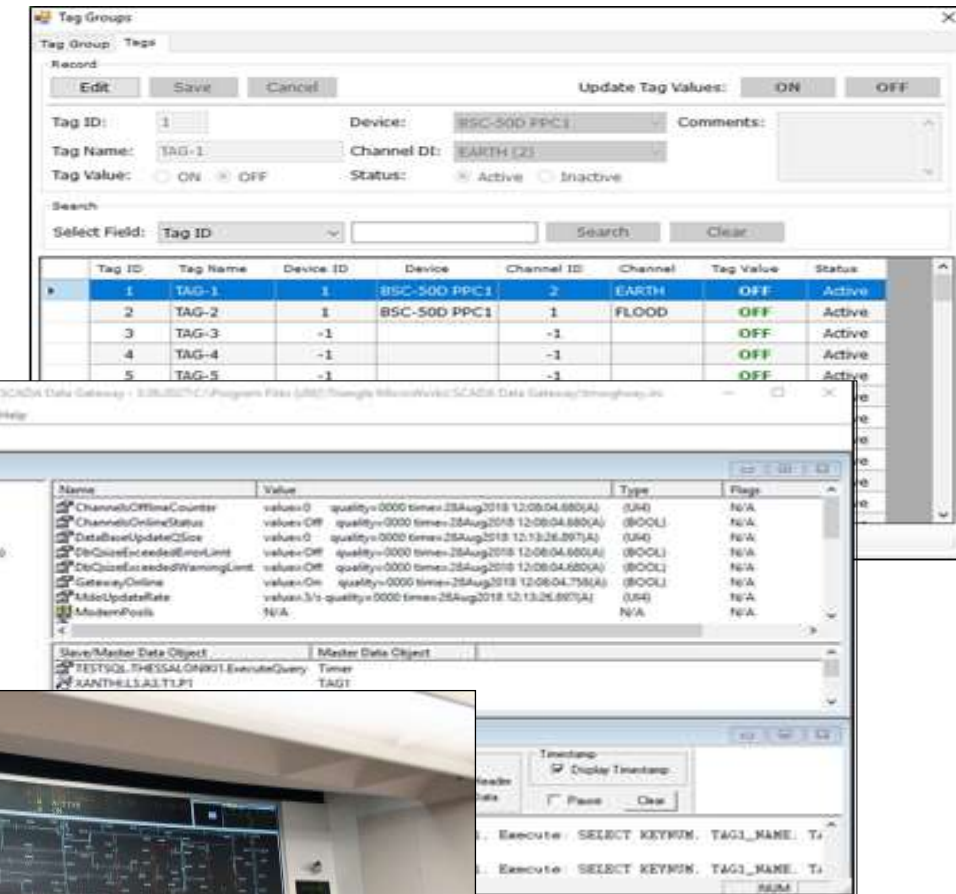


# MSG – Multiprotocol Scada Gateway

The MSG is a modern SCADA communication gateway, supporting multiple protocols,

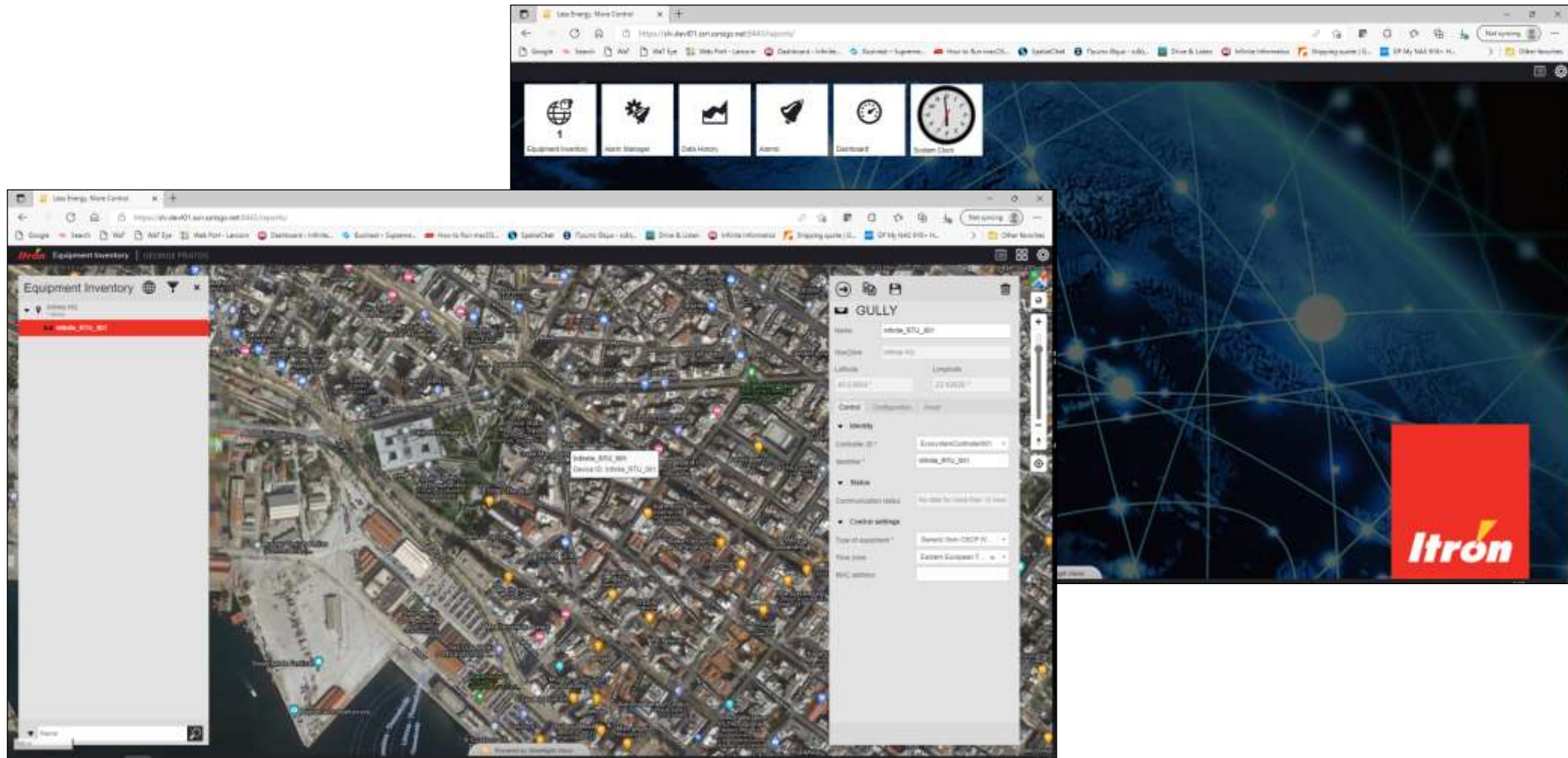
- DNP3 Secure Authentication v5 (SAv5)
- IEC 60870-5-101, 102, 103
- IEC 60870-5-104
- IEC 60870-5 Secure Authentication for -101 and -104
- OPC Data Access
- OPC XML Data Access
- OPC Alarms & Events
- IEC 61850
- IEC 60870-6
- Modbus

MS SQL server database backend for  
Historical data storage and management.



# Itron SLV- Streetlight Vision

SLV cloud platform integration



# Clients & OEM: Water Telemetry

