

## Creating the Internet of Things for water infrastructure Experience from The Netherlands

The Netherlands has a rich history with water management and is famous for conquering seas and deltas combined with an impressive water infrastructure management. It all started with managing water.



### History

I-Real started a project for a large waterboard in the Netherlands in 2003 (Rijn en IJssel). The initial requirement was to design and implement a monitoring and control system for various water chain objects, including weirs, locks and pumping stations. The biggest challenge here was that each object was supplied by different suppliers, each with its own protocol and interface. To implement the project successfully a more open software system was required; one that also could communicate via a variety of communication technologies, PLC and SCADA inputs. Hence the birth of our H2gO Software platform.

Since 2003, I-Real has grown rapidly and services today hundreds of municipalities and waterboards with over 150.000 objects in real time control for variety of water sectors in ground, waste, surface, drinking water and precipitation.

### H2gO Software platform

H2gO is an open process information system, developed for entire infrastructure real-time monitoring, control and alerting. The application communicates remotely with almost all structures within your (water)infrastructure. As a web-based master station, H2gO is accessible everywhere via internet and is fully harmonised with current water sector standards.



### Advantages

Optimised operational (water)management helps prevent and limit disasters and failures. The collected data helps you to do investments based on facts and not assumptions. Smart control of your installations leads to extended installation service life, cost reduction and energy savings.

### H2gO has the following unique features:

- Fully integrated protocols for all major PLC, datalogger and sensor providers. Such as Mitsubishi, Schneider Electric, Omron, T-box and Phoenix, with supported protocols such as TMX, IEC, Comli, Aquacom, Modbus, DNP3 etc.
- Equipped and used with all means of communications, including: GPRS, SMS, 3G, ADSL, Fiber, Satellite, LoRa
- Pre-integrated objects such as: pumping stations, weirs, locks, measure points, pressure sewer, sedimentation tanks, boosterstations, precipitation measuring, fountains etc.
- Modular and Open
- Secured against undesired use at every level according to NCSC standard

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## RealSense dataloggers and sensors

For the monitoring of water levels, I-Real has used a number of sensors from the industry and developed and produced its own RealSense 1 and RealSense 4 dataloggers.

However, as I-Real grew further into the Dutch market it became apparent that no suitable low power, cost efficient water datalogger was on the market that suited the needs for I-Real. Since then it releases the RealSense dataloggers to communicate with SMS, 2G, 3G and as per 2016: LoRa.



The RealSense 1 datalogger is especially developed for:

- Surface water and ground water level monitoring;
- Desiccation and rewetting projects;
- Research projects: catchment areas, building of detailed models;
- Preservation projects; well-pointing, archeology, tree care.

The RealSense 1 has a cylindrical housing with the (pressure/flow/level etc) sensor connected to its extension. This makes it highly suitable for installation in the monitoring well. The RealSense 4, with 4 inputs/outputs comes also with a solar panel option.

## Multi Protocol, Multi Communication and Multi Asset

I-Real has always been at the forefront of integrating the industry leading PLCs, communication (SMS, 2G, 3G, ADSL, Satellite) and SCADA systems protocols, relevant for the water industry.

In 2015 I-Real started testing LoRa enabled dataloggers for ground water level monitoring. LoRa is an enrichment to the wide portfolio of protocols within H2gO and creates a cost effective opportunity for low powered remote water sensors and dataloggers.

Once the first governmental users started to spread its enthusiasm of H2gO to colleagues managing other public infrastructure such as energy or traffic, the request was made to integrate some of these objects into the broader 'RealM2M' platform. Starting with water, I-Real creates the Internet of Things for public infrastructure.



## More information

If you would also like control of your infrastructure, please contact Simon van den Dries:

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