CASE STUDY Flow Meter Data Logging IoT

BACKGROUND

Horizons Regional Council (Horizons) are upgrading their data loggers for water meters as part of a hydrology infrastructure upgrade. Background for this project includes:

Horizons manages the data collection from its region's water meters, they have over 430 units installed.

Horizons' standard installation is solar based with a pulse output from the flow meter.

The communications are largely through the 2G/3G network which is being phased out (2025) – as such these units will need to be replaced over the next five years. This is the initial project with new installations being added as required.

The main procurement of hardware is seasonal and is typically in the third quarter of the year.

Communications framework:

Horizons has a dedicated APN on Vodafone and Spark networks. Vodafone predominantly, Spark where there is coverage shortfall

Secondary is radio network

Horizons operate to the National Environmental Monitoring Standards (NEMS) – www.nems.org.nz

Other Applications include

- River level monitoring
- Rainfall,
- Soil Moisture

STAKEHOLDER

Horizons Regional Council

The Horizons Region extends over 22,200km2 - from Ruapehu in the north and Horowhenua in the south, to Whanganui in the west and Tararua in the east. It's a landscape as vast and varied as the nearly 240,000 people who call it home.

SELECTION PROCESS

Pacific Technologies was awarded the 5-year supply and service contract by Horizon's Regional Council after a rigorous selection process by the Council. Key selection matters:

Evaluation of long-term collaborative relationship:

- jointly developing new products to implement new technology
- having access to technical staff for implementation and problem solving
- technical support and application experience.

The units should have the following elements:

- be robust and environmentally resistant for field deployment
- record either pulse or Modbus serial output from the water meters
- utilize future-proof spectrum on the Vodafone network CAT1 LTE, NB-IOT
- the hardware must be low power with either long life battery or on-board solar recharge
- adequate data storage (6 months) for parameters measured with an industry standard data protocol for remote telemetry (DNP3, Modbus, MQTT or similar)
- remotely configurable

THE PACIFIC TECHNOLOGIES SOLUTION

Metasphere has been at the forefront of the remote monitoring and control business for over thirty years. We improve operational efficiency and reduce costs, enabling our customers to meet their regulatory reporting requirements. Our customers are at the heart of everything we do and we implement some of the most innovative solutions available on the market.

Point Orange is a self-contained RTU with an internal or external battery pack, IP68 unit enclosure, either a 4G (NB-IoT/ CaT-M1) or tri-band 3G modem, and quad band GSM/GPRS fallback, auto-switching internal and external antenna options, software configurable AI, CI, DI, Modbus and SDI-12 communication options, integrated submersion sensor, local diagnostic points and intelligent alarm reporting. It communicates with **Metasphere's** Master Control System, DNP3/ WITS DNP3 Masters or FTPS servers.

The variables can be logged and stored with time-stamps at periodic intervals. The **Point Orange** RTU is also configured to trend diagnostic information from internal points, such as temperature, battery voltage and signal strength. Once critical levels are reached the RTU's is alarmed to dial in to allow the Utility to take action before an overflow.

The data collected is then communicated to **Palette, Metasphere's** data-visualisation platform. The platform selected was **Palette** for near real-time data and alarm visualisation and management.

Below center: **Brent Watson** (Manager – Environmental Data of Horizons RC) and **Abdul Khalil** (Managing Director of Pacific Technologies), signing the long-term contract for Flow Meter Data Logging and Telemetry services.

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FIND OUT MORE

If you would like to monitor your water and wastewater networks and the agriculture in your ecosystems, get in touch to find out how Point Colour RTU's can transform your operation.

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