

# Northern Ireland Water

## Telemetry upgrade delivers better monitoring, diagnostics and management of the water distribution network

### About NIW

Northern Ireland Water was set up in April 2007 to provide water and sewerage services in Northern Ireland. The organisation supplies 560 million litres of clean water a day and treats 320 million litres a day for almost 1.8 million people. By 2020, NIW is planning to invest £3 billion that will reduce leakage levels, lower the threats of flooding and improve water and wastewater quality.

### Project Benefits

- Protects the province's water supply for 1.8 million people
- Delivers more visibility, manageability and control over the water distribution network
- Future-proofs the telemetry network by making it IP-ready
- Reduces operational costs through standardisation of RTUs, which requires less maintenance, fewer spares and assists the knowledgebase of staff who have to support the assets
- Allows NIW staff to respond much quicker to incidents on the network



***"This project plays a key role in protecting the fundamentals of what we do, i.e. safeguarding the public water supply and treating wastewater."***

Pearse Bradley, Telemetry and SCADA Manager with NIW

### Northern Ireland Water enjoys better visibility and manageability of its water distribution network, thanks to a telemetry network upgrade, installed and commissioned by EMR Integrated Solutions.

The upgrade involves the replacement of 900 telemetry outstations or remote terminal units (RTUs), spread throughout the province. The RTUs take data from unmanned assets such as pumping stations, service reservoirs and water treatment works and transfer it back to the utility's central control rooms, providing better remote monitoring, diagnostics and management of the water distribution network.

The solution allows NIW to continue to provide a high quality water supply to over 1.8 million people and reduce operational costs.

### Business Challenge

NIW has an estate of over 2,500 RTUs. 900 of these were rapidly approaching end of life. With some of them almost 20 years old, NIW staff were starting to encounter hardware failures in the field and it was becoming increasingly difficult to source spares. In some cases, they were forced to source replacement units based on one-off production costs, which was prohibitively expensive.

With the clock ticking, it was clear to Pearse Bradley, Telemetry and SCADA Manager with NIW that they would have to mount a large scale, pre-emptive refresh.

"There was no point replacing like with like," said Mr Bradley. "We wanted to grade the performance we had and see if there were other technologies that would help us to improve on that. So we went to tender."

### The Solution

The technical solution selected is based on the Schneider Electric Talus T4E RTU supported by the installation, project management and commissioning skills of the EMR team. This device not only integrates with NIW's existing stock of RTUs but also future-proofs the telemetry infrastructure by making it IP-ready.

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### The Solution



The Schneider Electric Talus T4E Remote Terminal unit is a telemetry outstation / field device that provides remote monitoring, control and diagnostic facilities for unmanned sites. In addition to plant input and output, the T4e has built-in functions for alarm analysis, archive data logging and local control applications.

- Flexible communications media and protocols
- Expandable I/O, using Advantys™ STB
- Secure communications
- Suitable for use in unmanned, diverse geographic locations
- Easily integrated to other Intelligent Electronic Devices
- Highly user configurable and programmable
- Proven, industrial standard protocols
- Future-proof through internal expansion

This next generation RTU also provides NIW with a higher level of functionality according to Mark Quinn, chief executive with EMR Integration Solutions.

"The existing equipment is limited in terms speed and performance but most importantly, it's limited to monitoring only. By selecting an RTU based on the WITS/DNP3 protocol which facilitates IP traffic, the upgrade moves NIW up the control stack and opens up the possibility of greater systems integration and automation.

"For example, NIW now have the option of remotely controlling assets and automating control routines for pumping stations and reservoirs. This will help to reduce energy, cut waste and provide greater efficiency on the water network," he said.

### Benefits

"The biggest benefit of this project is continued protection of a high quality water supply," said Mr. Bradley. "The upgrade of these outstations is part of a strategic program focused on using the power of technology to reduce operational costs and maintain quality levels.

"We're looking at better ways of water retention in the service reservoirs, for example, as opposed to just filling the tank to its maximum. So we now have less waste, we're using less energy and we're less vulnerable to issues with service reservoirs," he said.

The move towards RTU standardisation also delivers benefits to the organisation. And with up to eight types of telemetry outstation currently in service, Mr Bradley is hoping to reduce that to one or two over time. "By standardising, our outstations are much easier to maintain, we require fewer spares and it assists the knowledgebase of staff who have to support the assets," he said.

The contract was awarded to EMR following a competitive tender process.

"There were two elements to the tender evaluation; quality of the tender return and cost," said Mr Bradley. "EMR scored highly on both. Our experience of working with them is very positive and they're extremely pragmatic in their approach. We enjoy a very good working relationship with the team and the skills and expertise of their technical staff ensure that projects are completed in a professional and timely manner."



**For more information on solutions for the water industry, please contact Mark Quinn, Managing Director at; [mark.quinn@emrsolutions.ie](mailto:mark.quinn@emrsolutions.ie)**