

Global water supply management via the internet

Innovative technologies are needed to help control and monitor water supply systems throughout the world. CEO **Shaul Rom** of Reali Technologies Ltd explains how a unique web SCADA technology that works over the Internet can help decision-makers share information crucial to cooperation in the management of water supply.

A unique SCADA technology, RealiteQ, developed and operated by the Israeli company Reali Technologies Ltd, is a virtual information and communication technology (ICT) network that provides a reliable and secure event channel for real-time remote control and monitoring.

Increasingly complex decisions regarding water and sewage infrastructure management have become increasingly complex, requiring the aid of super computers and state-of-the-art software to process high volumes of incoming data. Decision makers must have access to different levels of constantly developing applications for the optimization of plants, network solvers, quality analysis, dilution and more. However, any application, no matter how advanced and sophisticated it may be, needs basic data from all facilities and arrays in order to perform the necessary calculations based on one model or another, and recommend a modus operandi.

The true challenge RealiteQ developers had to face was the facilitation of a global system of monitoring and control, based on reliable and solid technology, which could span across borders and transpass sea, land, and air and switch between service providers and different communication networks.

Millions of various parameters are constantly gauged around the world; however, these data are routed nowadays mostly to local control centers, if at all.

Novel web SCADA technology

RealiteQ is a unique SCADA technology that works over public internet and was designed for real-time control and monitoring of water, wastewater, and energy. It retrieves critical information from remote sensors, analyzers, and controllers, takes care of alerts and alarms notification, provides historical data, and opens a secured event channel for real-time remote control.

As a core technology, RealiteQ

has been adopted by leading OEMs that offer controllers and analyzers with iCex (Integrated Cellular and Ethernet Explorer) functionality for real time remote control and monitoring of water and energy facilities over cellular networks, satellites and standard Internet.

RealiteQ is a highly secured technology that contains a variety of standard interfaces for connecting software for crisis management, scenario management, assets management, analytics, and optimization.

Real time retrieval of critical data is highly important when dealing with thousands and millions of measurements. RealiteQ streams selectable critical data to many data consumers. In addition, historical data is always available and refreshed. The system keeps remote sites "always on" and ensures availability of data and immediate action, regardless the actual operator or network it is attached to. All cellular networks, satellites, ADSL etc. may be used in the same "cloud."

For water or energy supply, and other essential infrastructure, redundant communication is highly needed. RealiteQ offers communication redundancy.

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RealiteQ is not only for monitoring. It opens secure event channel that enables remote operation as a reaction to alert, alarm, or other normal or abnormal scenarios and operations and enables managers of water utilities to have real crisis management.

Security and safety

By virtue of being a control system for critical infrastructure, RealiteQ is protected with the highest security algorithm and all the data is protected by technologies that are used in banking and military applications. In addition, closing a valve, opening an alternative water supply channel, or resetting a critical alarm must be done carefully. The system uses an advanced algorithm that makes remote operation secure and safe.

Author's Note

Shaul Rom is the chief executive officer of Reali Technologies, based in Zur Yigal, Israel. The company will exhibit the RealiteQ system during the 6th International Conference on Water Technologies, Renewable Energy, and Environmental Control, WATEC 2011 in Tel Aviv, Israel.

