Telemetry upgrades increase efficiency

An integral component of Wyong Shire Council's Water Supply and Sewerage operations is a telemetry system used to monitor and control network components.

The existing Unix-based telemetry system was installed in 1990 and used early model Pentium processors to control 36 water stations and reservoirs, monitor 159 sewer stations, 6 wastewater plants, and a water treatment plant using 170 Remote Telemetry Units (current system expanded to 195 RTUs). The system has reached its capacity with the components now being technologically obsolete, and they cannot be expanded or maintained.

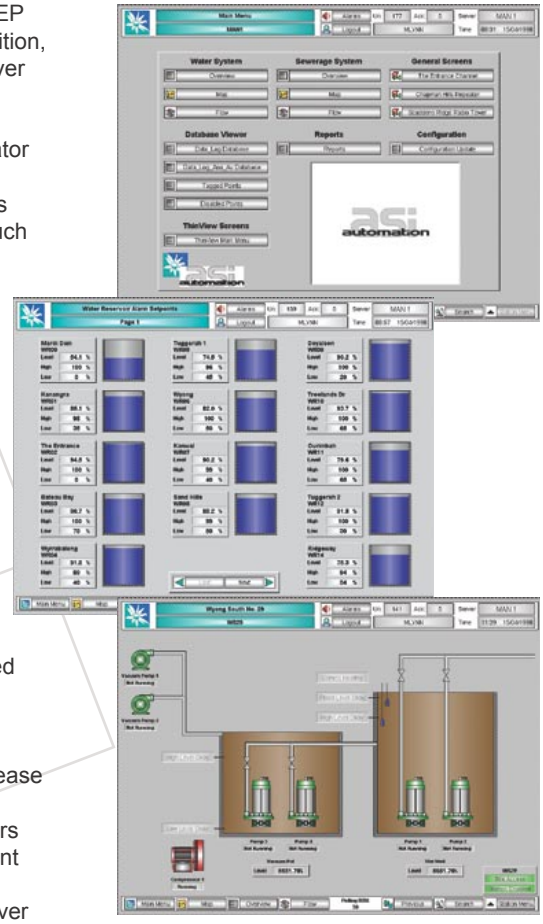
In order to place Council's Water and Sewerage system in a position to cope with its increase in capacity, escalating demands for accountability, accurate data collection, secure data storage, and to provide better service for residents of the Wyong Shire, a project to upgrade the telemetry network was commissioned. Council chose to implement a system that is superior in both technology and design, which will provide the required flexibility and expansion to service the Shire well into the future.

Each station throughout the shire has a Remote Telemetry Unit (RTU) that controls equipment at the site, such as pumps and valves, and stores data to be sent back to base. At the base, a Front End Processor (FEP) polls each of the outstations, and collects data from the RTUs. For water stations, the FEP also sends out control signals based on internal algorithms.
In order to provide stable uninterrupted operation, there is redundancy built into the FEP system. If, for any reason, the FEP fails, a backup FEP will automatically take over data collection and control.

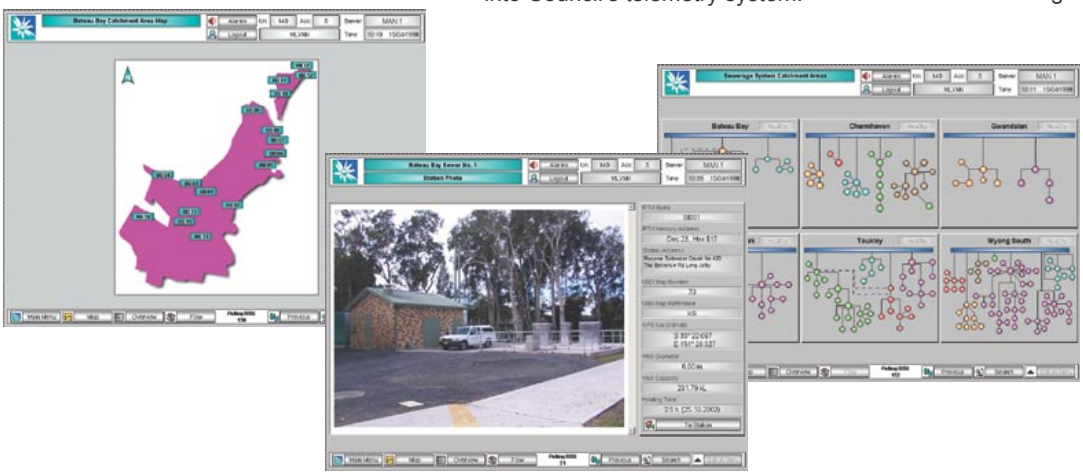
Time-stamped data collected by the FEP is transferred to CIMPLICITY Plant Edition, a SCADA package with true client-server architecture, that is leading the way in technology and functionality. This is a software package that allows an operator to view the status of remote stations, view trends and alarms, send setpoints to RTUs, view a photo or map, and much more, for every outstation in the Shire. This information is displayed graphically on an Intel Pentium 4 dual-processor computer running Windows 2000 Server.

Like the FEP, CIMPLICITY Plant Edition is a redundant system with two servers. When one fails or is taken offline, the other will take over automatically without loss of data or control. CIMPLICITY Plant Edition stores all information collected by the FEP to a secure database located on another computer, protected by a Firewall. Only authorised users can view this data.

CIMPLICITY Plant Edition software supports many add-in modules to increase the performance of the software. For example, when a remote station triggers an alarm, an SMS message can be sent directly to a technician who can fix the problem. The system can be viewed over a secure Internet connection, allowing an operator with correct authorisation to view the Shire status from all over the world. Alternatively, operators could use their PDA and mobile phone to dial-in and receive data directly to their location, without the need for an Internet connection or laptop computer. As new technology is developed, a CIMPLICITY Plant Edition add-in can be installed to incorporate the improvements into Council's telemetry system.



Wyong Shire Council has a reliable and robust telemetry network that will last well into the future. High quality hardware and software, coupled with redundancy at many levels, provides continuous operation. The system is upgradeable to cope with increasing demands of legislation and population, and provides the ability to incorporate the latest technological advances.



Thanks to
Wyong Shire Council

Images are taken from the actual project - the screens were designed and engineered by ASI Automation. ASI Automation now participates in the maintenance of the complete system in co-operation with Wyong Shire Council.

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