Tatsoft Case Study

Water and Waterwaste industries

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FactoryStudio references in Water industries

CHALLENGE

- According to Gary Walters, Project Manager for Frost Engineering, *"One challenge for this project was how to allow a modification to a process variable on the SCADA system to be copied back to the remote location without being overwritten by the constant polling. The flexibility in the communication driver of FactoryStudio was key to making this work."*t

SOLUTION: FactoryStudio

- Factory Studio was installed for operator control of the remote water system locations from the central office, to read the real-time data from a master PLC and make it available to the operator in a logical and understandable way.

RESULTS

- FactoryStudio system provides collection of real-time data so performance can be monitored and analyzed later if necessary.

- Increase in their ability to respond to Alarms more quickly and efficiently has been terrific.

FactoryStudio
Water Apps

Two key industries served by SCADA software solutions are the Water and Wastewater industries. Modern water treatment facilities can operate sophisticated and sometimes very costly water and wastewater networks and sewage treatment plants, which are usually run by a public utiliity organization or municipality. Although these industries may have had SCADA solutions for quite some time, many plants are finding it's time to update their hardware and software infrastrcuture to more fully leverage a new generation of technologies providing greater security, reliabiity, and flexibility.

One such facility is a potable water plant West of Portland, Oregon, which processes water for a small municipality.   For a recent upgrade of their SCADA system, they hired Frost Engineering Services for the job. Frost Engineering provides solution to customers in Oregon and Washington.

The municipality has a network of 4 remote PLC's, which control functions at a well field, reservoir, and sand-filter and water treatment plant. A master PLC in the operations office polls the remote sites for real-time data every 2 seconds.

Factory Studio was installed for operator control of the remote water system locations from the central office, to read the real-time data from a master PLC and make it available to the operator in a logical and understandable way.

Factory Studio is directly connected to the master PLC, but through the radio link from the master to remote PLC's it interfaces with flow meters, level sensors, PH and Chlorine analyzers, Turbidity meters, pumps and control valves.

According to Gary Walters, Project Manager for Frost Engineering, *"One challenge for this project was how to allow a modification to a process variable on the SCADA system to be copied back to the remote location without being overwritten by the constant polling. The flexibility in the communication driver of FactoryStudio was key to making this work."*

Frost Engineering was able to streamline operations beyond centralizing control of the system. The FactoryStudio system provides collection of real-time data so performance can be monitored and analyzed later if necessary.

The increase in their ability to respond to Alarms more quickly and efficiently has been terrific. When Alarms occur, FactoryStudio sends the alarm message to the operator's cell phone as a text message. The operator can then connect to the FactoryStudio system via the included native iPhone app and/or web client (IE) from home.

"Other key factors leading to our decision to use FactoryStudio were the wide range of options for displaying graphics, built-in .NET scripting for special requirements, communication flexibility, and competitive pricing" said Walters.

Integrated Process Solutions (IPS) first discovered FactoryStudio through the Control System Integrators Association (CSIA). They were invited to visit Tatsoft at the Executive conference and as a result were able to see for themselves why it makes sense to take a step forward in their SCADA technologies.

Rodney Rock of IPS was the project engineer for this first system. With a maximum of one hour in a web meeting, Rodney was ready to get started developing the application for Gonvick Waste Water Treatment Plant, Lift Station, and Water Treatment Plant in Gonvick, MN. As are found in most Water applications, the plant itself has clarifiers, blowers, chemicals, and lift station levels and pumps to monitor.

There were several legacy SCADA products that were considered for this project. IPS thought that with the newer technologies being used within FactoryStudio, and given the competitive disposition of the pricing, FactoryStudio would be an ideal solution to use.

The system itself consists of a standalone SCADA computer communicating with a Rockwell Micrologix PLC and via wireless Ethernet, three RTUs for the wastewater treatment plant, water treatment plant, and lift station.

FactoryStudio came standard with the necessary integrated driver included at no additional cost. For this project, FactoryStudio was licensed for up to five hundred communication points (PLC registers). Since FactoryStudio doesn't count tagnames, IPS was able to use a lower level license than would have been required from competitive packages.

According to Rodney, *"One of the nice features of FactoryStudio is that everything I needed to configure for the SCADA software application is contained in a single integrated and inexpensive solution. There was no need to configure separate applications for visualizing, reporting, collecting, or alarming data."*

The project itself took just about sixty hours to configure with FactoryStudio, and again, that was with just an hour or so of introduction and application assistance on the phone, and without attending any formal training.

The Municipal Authority of Harmar in Harmar Township, PA was created to acquire, hold, construct, improve, maintain, and operate a water distribution. The source of their water is three wells that draw from the alluvial deposits system to serve the Township and its contiguous areas in the Allegheny Valley Aquifer, a glacial deposit of sand and gravel along the banks of the Allegheny River.

After the water is pumped out of their state-of-the-art Ozone treatment plant and before it reaches the consumer, it is sent to one of four water storage facilities. The Locust Hill tank is a 500,000 gallon elevated storage facility, which helps to maintain the pressure needed for the area.

The legacy system in place was a custom-coded system from an integrator out of Arizona. Because it was a completely custom solution, Harmar was locked into one solution provider and were subject to very expensive development and maintenance agreements. Harmar Township recently contracted IS&C, a local integrator, to upgrade their SCADA system to provide multiple stations and more efficient historical data management, and to do so in a significantly more cost-effective manner.

With FactoryStudio their system integrator was able to develop the entire SCADA application in just under a weeks' worth of time. Because of the extremely customer-friendly pricing, the system was updated for significantly less than the maintenance renewal costs Harmar previously had to endure.

The licensing model for FactoryStudio was also a huge benefit for Harmar. With each runtime license, FactoryStudio provides runtime access to the system for the local interface, a web client (IE) and an iOS device. Today, the plant personnel are able to run the FactoryStudio SCADA application at the plant, the main office, and if needed, can even access it through a native iOS application on iPhones or iPads from any location with Internet access.

The application engineer who developed this project said *"There were several features in FactoryStudio that reduced the development time and saved Harmar money as a result. One such feature allows the engineer to modify the tag names associated with PLC addresses with no need to perform a global Search and Replace process as is needed in other packages."*