

## Eighteen Hours to New SCADA

A Michigan utility upgraded an aging SCADA application on a limited budget and timeline

By Thelma Akwei and Jessica Spindler

Houghton Lake Sewer Authority (HLSA) manages a sanitary sewage facility for the townships of Denton, Lake, and Roscommon. In December of 2011, staff at the HLSA were concerned that the aging computer running their SCADA software application was in danger of failing. As their software was no longer supported by the manufacturer, they needed a new SCADA supplier.

However, their budget constraint was cost-driven and required that any new, fully featured system be up and running in under a week. Two factors made meeting this tight timeline possible: the reuse of virtually all existing monitoring and control hardware and the extraordinary co-operation between the utility, the local system integrator and Trihedral.

### Existing Hardware

HLSA's existing application used Zetron Remote Telemetry Units (RTUs) and Motorola radios. Jessica Spindler is a Sales Manager with State Electronics Company, the established systems integrator for the utility. She describes their previous SCADA application as "old and cumbersome, very antiquated with a very simple alarm management system." It only ran on an outdated operating system with lower baud rates. This made it impossible to update and there was no support available for it. The alarm manager sent alarms to a numeric pager with very limited information.

### The SCADA Software Selection Process

Spindler learned about VTScada software through her internet research. VTScada has 32-bit and full 64-bit options, and runs on all Windows™ platforms from XP SP3 through Server 2008. One of the main requirements for a new application was the ability to send alarms to cell phones as text messages instead of using the alpha-numeric pagers.

Spindler noted that this would enable them to add more information to the alarm notification. VTScada IO.I auto alarm dialer allows for the sequential sending of emails, text messages, or automated voice calls to a maximum of thirty users and the acknowledgement of alarms via emails, text messages, or interactive voice response.

Another requirement for the new SCADA application was that it would be able to communicate with their existing Zetron RTUs. VTScada includes a Zetron communication driver and a utility for easily converting the I/O tag database from their existing application. During the selection process, Spindler called Trihedral directly. "All my questions were answered so quickly, efficiently, and accurately that it made it a very clear choice."

### Time Saving Conversion Strategies

State Electronics worked closely with Trihedral's Doug Spurrell. The new VTScada application was built in less than 18 hours using VTScada's built-in toolset to simplify and reduce configuration time. Due to the relatively small size of the application, Spurrell elected to convert the tag database manually. However, he managed to reduce errors and streamline development by creating a reusable pump station parent tag that included ten child tags (6 digital, 2 pump status, 1 polling driver and one TCP port). To add a new remote site, State Electronics simply had to copy this parent tag.

VTScada's new approach to parent/child tag architecture uses a hierarchical approach to tag organization which allows whole subsystems to be cloned by simply copying a single tag that represents the root of the tree of tags. Tags copied to a new parent automatically reference the new scope. An added benefit of VTScada is the built-in historian which is an important element for the optimization of the system. The historian has no limitation on the number of tags it can record, does not require any configuration, and works out of the box.



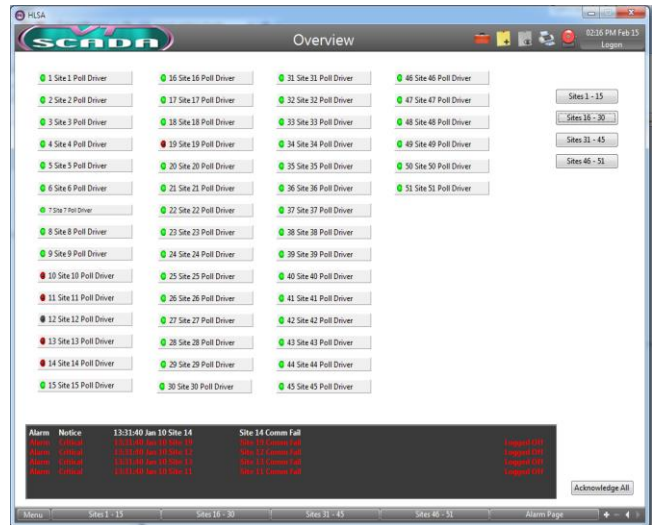
Detail page showing a number of IO points from several sites

Rather than purchasing and configuring a mail server, Spurrell configured a connection between the Transport Layer Security available in VTScada and a free Gmail account. This gave HLSA the added capability of distributing alarm information to cell phones as text messages.

The effectiveness of this approach was not lost on Spindler. She explained that the original system “would only tell them which site was having the problem. Now they get the information of what the problem is at the site and what set off the alarm.” In addition, VTScada has a configurable built-in report package to generate a variety of useful reports.

### Cooperation of Integrator and Software OEM

Spurrell transferred the existing tags from the old system to VTScada and assisted State Electronics in installing the new system. From Trihedral’s head office, Spurrell used a virtual desktop tool to assist them during the commissioning and troubleshooting of the first remote site. He was able to quickly determine if issues were related to the software, the I/O connections or addressing.



Main over page showing the polling sequence for all sites

The installation process was very straightforward and installing the remaining fifty sites was accomplished without assistance. This approach eliminated the travel and accommodation costs of having Spurrell on site.

### The New SCADA Application

When asked about the performance of the new SCADA system, Spindler states, “the customer absolutely loves it. They found out that it’s more reliable and easier to use.” Due to the flexibility in VTScada, the VTScada screen shots were fashioned to have an updated resemblance to HLSA’s existing simple screen shots. This made the learning process a lot easier and simpler for the Utility. “VTScada has definitely exceeded our expectations,” Spindler affirmed. “We were looking for somebody who provided good support, who would get questions answered, and the price, of course. But really one of our biggest things was support,” explained Spindler. “You cannot get good support from most software companies but that was definitely not the case here. Trihedral is very service driven,” she added.

### Advice for Utilities

“Explore support options at the fullest. Make sure the software company is comfortable with what they are selling because it’s the things that happen after installation when you need service that really becomes important,” Spindler advises. Thanks to the close relationship between the integrator and Trihedral, and the tight integration of VTScada, the Houghton Lake Sewer Authority was able to replace their SCADA system and increase functionality without having to endure an extended development process or replace their hardware. Spindler mentioned that she was most proud of “the ease of transition for the customer. The customer was able to get in front of a computer and seamlessly switch to VTScada from their old program without having a gigantic learning curve. It was easy to use both for me and the customer,” she concluded.

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