



APPLICATION NOTE

SEWER DISTRICT INTEGRATES MOSCAD TECHNOLOGY INTO EXISTING INTRAC BASED SCADA SYSTEM

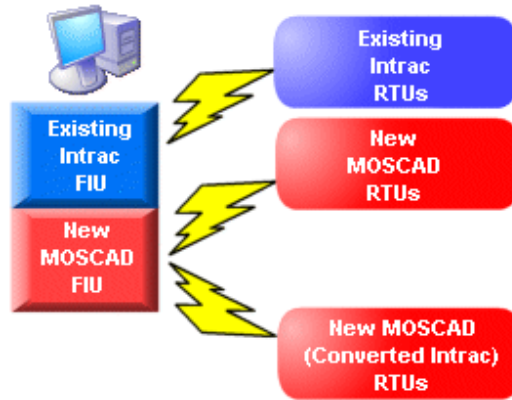
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BUFFALO, NY – Erie County Sewer District 2 is responsible for approximately 175 miles of sewer, 18 sewage pumping stations, 75 low pressure grinding units, 1 overflow retention facility and 1 advanced wastewater treatment facility. The district operates and maintains a network of sewers which flow to its sewage treatment plant at the mouth of Big Sister Creek near Lake Erie.

BACKGROUND

The district was running a DOS based system to monitor eighteen (18) lift stations equipped with Motorola’s legacy Intrac 2000 RTUs. They desired to upgrade the existing monitoring software to a windows based platform as well as begin to integrate new Motorola MOSCAD RTUs into their system. Since the cost for upgrading all eighteen (18) RTUs to MOSCAD was beyond the budget provided for the initial project, the district needed a way to gradually phase out the existing Intrac sites and replace them with newer MOSCAD sites. The district not only planned on phasing out the older Intrac sites but also planned to expand the system by adding newly monitored sites.

With an aggressive plan to both upgrade and expand their system, the district required a solution which would enable them to perform all software updates in-house, preferably, while the system was running. By performing their own software modifications, the only cost of adding or upgrading additional sites would be the cost of the hardware and the subsequent installation.



SOLUTION

The district chose to use ITS’s SCADArf solution to meet their system requirements. Running within Wonderware’s HMI InTouch software, SCADArf is a generic application consisting of ActiveX objects and InTouch Wizards that can be easily configured to meet custom requirements. SCADArf allows for all system configuration to be done while in InTouch runtime mode and is designed to be accomplished by in-house personnel with minimal training and no knowledge of the InTouch development software environment.

To allow for both Intrac and MDLC (MOSCAD communication protocol) to operate within the same system, two (2) FIUs (Field Interface Units) were deployed; one handling Intrac communications to the existing legacy sites and the other handling the MDLC communications for all future MOSCAD sites. While newer

MOSCAD RTUs have the ability to “emulate” the legacy Intrac protocol and communicate to an Intrac based FIU, the customer decided to take advantage of the new MOSCAD communication platform and deploy MDLC RTUs. Since new applications would have to be written, the customer also decided on additional functionality not present at the legacy sites, specifically, the ability for a MOSCAD RTU to calculate pump runtimes and number of starts.

ITS designed, configured and tested the system entirely in-house. This allowed for a short three (3) day visit to deploy the system at the district where the newly designed

system and the existing DOS based system ran in parallel until the switchover could be completed.

SYSTEM ARCHITECTURE

SCADArf serves as the operator interface for lift station alarm monitoring and overall system maintenance. The MOSCAD radio communications protocol, MDLC, provides the data network with reliable, error-detecting communications by handling peer-to-peer communications between MOSCAD RTUs and the MOSCAD FIU. A Radio Concentrator between the MOSCAD FIU and the Intrac FIU acts as an intelligent network interface manager splitting the MOSCAD and INTRAC FIUs into two separate sub-systems sharing the same radio communication channel.

SYSTEM FEATURES

Pump Statistics

Pump statistics are available for any MOSCAD site and can be displayed by viewing the corresponding site screen or by viewing the Microsoft Excel based Pump Statistic report which is configured to print out daily. MOSCAD keeps track of the current and last month as well as yesterday and today pump runtime (hours) and number of starts. The maintenance staff uses these reports to assist in preventive maintenance for the pumps.

Reporting

Remote alarm and event data arriving at the InTouch workstation is printed to an alarm printer and logged locally in the MSDE (Microsoft Server 2000 Desktop Edition) SQL compliant alarm database. On-demand alarm reporting allows operators to view alarm and event data over a customizable date range for specific sites. Using this on-demand, customizable alarm and event reporting allows the operators to view critical event timelines helping them to optimize and troubleshoot the system.

Site Conversion

Through the use of the SCADArf System Management ActiveX, operators logged in

with manager access can convert an existing Intrac site to a MOSCAD site with a simple check box. While no other configuration is required, the manager may also customize the site using the SCADArf Site Configuration ActiveX object. The object allows for runtime configuration of the site image and all input parameters including description, icon representation, alarm state and on/off messages.

Adding New Sites

Using the SCADArf System Map ActiveX, operators logged in with manager access can configure existing or add new site icons to the system map. The system map site icons display current alarm status for the site as well as allow for single click navigation to the specific site screen. New sites may also be configured using the SCADArf Site Configuration Active X. All configuration is accomplished while in runtime, eliminating the need for the user to understand the InTouch development software environment.

CONCLUSION

Since SCADArf was deployed at the district, the maintenance staff has added several MOSCAD RTUs to the SCADA system. This was accomplished entirely by their staff with no added integration charges the only cost of adding the site being the cost of hardware and installation.

For More Information

For more information about ITS's services or Motorola MOSCAD product line, please call 847.368.8400 or visit us at <http://www.itsinfo.com/>.