

SHADCOMM LTD. PROJECT PROFILE

City of Saint John
Supervisory Control And Data Acquisition System (SCADA)

Q1 – 2008



Proxim
wireless

an integrator of
Schneider
Electric
Alliance

City of Saint John

Supervisory Control And Data Acquisition System (SCADA)

Project Overview:

Shadcomm Ltd was awarded a project for the Supply and Installation of New RTU (Remote Terminal Units) and a complete wireless communications system for the City of Saint John early in 2007. This project involved the installation of several 150ft CSA communications Towers, Fiberglass equipment building, and the design, construction, testing, and installation of PLC Panels at a total of 84 Locations.

Design:

The Design involved a partnership with several manufacturers, and the integration of several different layers of Hardware and Software. The communications system alone, involved two different levels of communications. The Level 1 Backbone was designed to use a high speed carrier grade wireless system. It included a total of 13 high speed links, between some of the major locations around the city, which required the most critical connection. These High speed links provided 50Mbps of Full Duplex Ethernet communications. The Level 2 system was based from 6 of these major backbone locations, and was used to poll data from the 84 remote sites around the city.



The Communications system was almost completely Ethernet based, and included managed switches to help monitor and control the throughput of the system, and to monitor for any problems. The use of Ethernet equipment on all communications levels, made for easy troubleshooting techniques.

Due to the large system size, and the fact that the sites were spread throughout the city, there were 4 large communications towers required. Shadcomm, with the help of advanced tower from Ontario, provided the design, supply and installation of these towers.

At each location, a New PLC Cabinet was installed, which was designed, built and Tested at our shop, prior to installation. With help from City E&I Staff, the various water and wastewater Pump Houses, lift stations, treatment plants, and Reservoirs were brought online with the system over the last few months of 2007. Each Control Panel included a Telemecanique Twido PLC, complete with Ethernet communications port. The IO counts varied at each location, and included AC and DC Inputs and Outputs, as well as numerous 4-20ma and 0-10VDC analog inputs and outputs.



This project is the first step in more control and monitoring of Water and Wastewater in the City of Saint John. It brings their systems up to the latest technology, and is a Showcase system in Atlantic Canada, which is being toured by other municipalities as a "Standard" in Water and Wastewater SCADA systems.



Conclusion:

This project tested all of our Technical skills, including Fiber Optics, Programmable Logic Controllers, Wireless Communications, and Ethernet communications. It was one of the largest projects that we have done to date, and we believe a very important addition to our portfolio.

Some Important statistics from this Project:

- Total Ethernet Devices: Over 200 Including PLC's, Radios, Switches, & Computers
- Total Physical IO Points: 1000+ Digital Inputs, 200+ Digital Outputs, 200+ Analog Inputs/Outputs
- Total SCADA Tags: 8000+ Monitored Tags

References:

Project Engineer:

Mike Cormier, P. Eng.
 Vice-President
 Crandall Engineering Ltd.
 400-1077 St. George Blvd.
 Moncton, NB E1E 4C9
www.crandallnb.com
mgc@crandallnb.com
 T: 506.857.2777
 F: 506.857.2753
 C: 506.863.8690

City Engineer:

Brent McGovern, P. Eng.
 Manager, Water & Wastewater Operations
 Saint John Water
 City of Saint John
 office 506-674-4264
 fax 506-658-4740