Basic SCADA System Overview

The basic SCADA system would consist of a computer, monitor, and a software package for Human-Machine-Interface (HMI), or sophisticated process control. In the basic HMI configuration, the operator can view graphic displays of the remote sites and send control functions to those sites. For a stand-alone remote system, the control functions are generated at the remote sites. In this application the HMI software system is only monitoring the remote status and alarm conditions.

With the addition of an alarm or event printer, the SCADA system can print alarms or status conditions as they occur. The alarm printer is normally a dot matrix printer with a continuous paper feed. This allows for several pages of alarms to be printed.

The report printer allows for the printing of reports and trend charts. A color printer will give the user the ability to print full color charts and graphs.

By adding an alarm reporting software package, the computer can be used to call out over standard telephone systems, a multitude of alarms. Built-in dial out modems are provided as part of the alarm reporting system.

Communications software can be added to allow for remote access to the computer. This allows a person with a laptop or desktop computer to access the system over a standard telephone circuit. The access to the computer is especially useful for operators that are away from the master station and need to view the computer screens or make control changes. Passwords can be used to prevent unauthorized people from accessing the system.

Sierra Control Systems, Inc. has developed a product line of Remote Terminal Units (RTU) for Supervisory Control and Data Acquisition (SCADA) systems. These RTUs are provided as complete systems for integration into existing SCADA systems or into new systems. The Series 900 RTU systems are designed around the Control Microsystems, Inc. SCADAPack controllers.

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Basic SCADA System Overview

Option 1 - Fully Programmed and Functional Systems

RTU systems that are designed for a specific application and are fully programmed and ready for field installation. These RTU systems can be provided for a wide variety of applications, including:

- Community Water System
- Tank and Reservoir Level Monitors
- Pump Controllers for Wells and Booster Pump Systems
- Sewer Lift Station Monitoring
- Sewer Pumping Station Monitoring and Control
- Remote Valve Control
- Flow Monitoring Stations
- Water Treatment Plant Monitoring and Control System
- Irrigation Water Monitoring and Control System
- Canal, Lateral, and Stream Monitoring
- Reservoir and Lake Level Monitoring
- Gate and Valve Automatic Controllers
- Water Reuse Control Systems for Irrigation
- Golf Course Water Supply Monitoring and Control Systems
- Fish Water and Wildlife Management Water Monitoring Systems
- Hydro-electric Power Monitoring and Control Systems
- Natural Waterways - Rivers, Lakes, and Stream Monitoring

Option 2 - Fully Functional Systems that are User Programmed

RTU systems that are fully functionally tested and ready to be programmed by the end user for a specific application. These systems are designed to allow the end user to program, test, and install the RTU or complete SCADA system.

These RTU systems are fabricated to the specifications of the end user and include the following standard hardware:

- Enclosure w/internal terminals and I/O devices (fully wired)
- Power supply system w/fuses and terminals (fully wired)
- Controller, microprocessor, and PLC type
- Expansion Modules (if required)
- Operator Interface Terminal (OIT) or other readout devices
- Telemetry equipment: modems, radios, antennas, cables & connectors

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