

The Sage Advisor

SCADA, SECURITY & AUTOMATION NEWSLETTER

Volume 18, Issue 2 • Fall/Winter 2008

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Control Microsystems Introduces SCADARange Battery-powered Wireless Sensors



is ideal for tank farms or sites where there are lots of sensors needed in a concentrated area. Once the base unit is connected, it makes the sensor and diagnostic data available through a Modbus serial connection which can be accessed by most PLCs or directly by most HMI systems.

Transmitting data through a radio system is great, but what if you don't have power at the sensor site? One solution is to install solar power systems which are unsightly, expensive to purchase and install, and are attractive to thieves. Another choice is to use SCADARange.

The Control Microsystems' SCADARange product line offers a variety of models with different sensor types, coupled to battery-powered unlicensed spread spectrum radio transmitters. These remote sensors report to a base station up to 3,000 feet away. The system is so conservative in its use of power that the internal battery, which is the same size as a C-cell, can operate the transmitter for 5 years or more. In addition to the sensor data, a series of diagnostic values are sent with each message which includes battery status, communications statistics and other device information.

The integral LCD display on the remotes allows for easy configuration of the units, as well as providing a wealth of diagnostic information about the sensor, battery and radio connection. Simply activate the remote with the two pushbuttons on the LCD display and enter information such as password for the unit and which base unit to connect to if there are more than one within range. The base unit will then automatically detect and connect to the remotes assigned.

A base unit can connect to up to 100 remotes, and since multiple base units can operate in a single area, this system

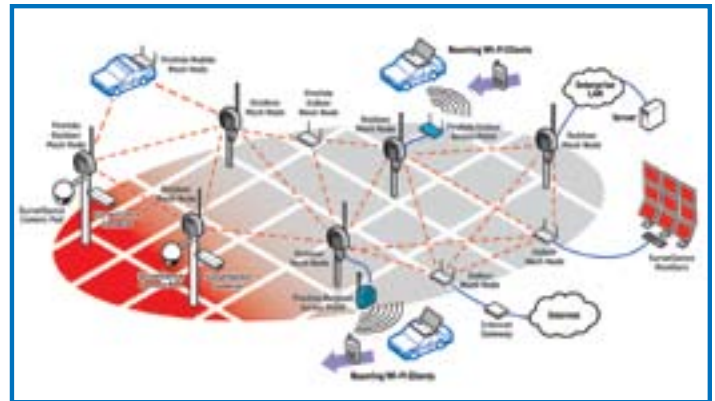
can have wireless sensors in place and working in a matter of minutes. Without the need for trenching, wiring or installing heavy enclosures, savings on the installation can easily pay for the difference in cost of a SCADARange sensors vs. a traditional wired sensor system.

The Windows™-based SCADARange Manager software is a client/server application providing an easy to use interface to your SCADARange system. This network management tool allows for field unit configuration and provides system diagnostics to technicians and engineers or can allow enterprise-wide access to information for better management of your system.

Please call Sage Designs to schedule a demonstration.

OCTOBER SEMINARS

Sage Designs is hosting four seminars on October 15 & 16. The morning SCADA & Security seminar will feature guest speakers from Control Microsystems, Firetide and Vicon. The afternoon seminar, which includes lunch, provides four hours of DNP3 training. The morning seminars are free. There is a \$50 fee for the DNP3 class. Sign up for both events using the DNP3 Seminar form inside this issue or found on the Events page of our website.



Wireless Mesh: New Approaches for SCADA Management, Security

How to take advantage of the latest high-throughput, distributed wireless network technologies

By Jeff Butler

Fully distributed, Ethernet-based wireless mesh networking technologies from companies such as Los Gatos, Calif.-based Firetide are becoming more valuable as a complementary SCADA solution. On top of SCADA networks, wireless mesh provides sizeable bandwidth and reliability advantages, as well as benefits in areas such as data security, video surveillance and network aggregation and management.

Here are just two of many examples of applications where wireless mesh/SCADA thrive, followed by things to consider when planning to integrate a new mesh network backhaul.

Network Aggregation for Public Utilities

Public utilities collect data such as water usage, temperature, pressure and more from hundreds of homes and return it to a central system via a data collection unit (DCU) installed in a location such as a light pole. Now, by connecting a Firetide HotPort wireless mesh node to the DCU, utilities can aggregate multiple DCUs and facilities within a single mesh cloud. Wireless mesh is self-healing, so there's no worry about single point of failure. Firetide mesh networks support 2.4, 4.9 (US public safety licensed band), and 5

GHz. Future plans include support for 900 MHz frequency band.

Pulling data together into the mesh cloud allows public utilities and water districts to enjoy greater bandwidth, of course. The key benefit to the strategy, however, is how decision makers can get the full network picture. Firetide's HotView Pro management system makes managing data in the cloud easy, while identifying problems and solutions throughout the entire network.

Wireless mesh adds layers of data security, too. Firetide's mesh encrypts data from the source to the destination, with no decryption along the way. Once it hits the cloud, data is never exposed.

Mission-Critical Security

Gathering data from water district SCADA systems to measure chemical levels

Continued on page 6

Inside This Issue

- Thumb Drive Data Logging
- DNP3 Master Mode in RTUs
- PoE for Security Cameras
- Merced ID SCADA Upgrade
- SCADAPack in RFID System
- Seminars
- Training Classes



How Much Data Logging is Enough? Or: When Do You Retire?

As the newer computer technologies find their way into SCADA products, we have the opportunity to provide many interesting features that were once the exclusive domain of the PC. One of these newer technologies that has been implemented on Control Microsystems' SCADAPacks is USB ports.

The 300 series of SCADAPacks which includes the 350, 357, 330 and 334 models, all come equipped with both type A and B USB interfaces. As peripheral devices, these SCADAPacks can be programmed through a USB connection from your computer which eliminates the need to know anything about the settings on the target controller such as Station ID, IP address, baud rates, parity, etc. making it plug-and-play with TelePACE or ISaGRAF programming software. The other port allows you to plug in a thumb drive which turns the SCADAPack into a data logger with incredible storage capacity.

Logging data to the thumb drive is set up using a function block called: DLGF in your ladders application. This function block has three logical inputs; the first will create the log, the second causes the DLGF to write a set of values to a buffer and the third will suspend the function. Log files contain a maximum of 8 data fields, Time and Date is often one of these, a mix of analog and discrete values constitute the remainder. The input to the function block that logs data can be driven from a timer or any other discrete value real or calculated. This allows you to set up an event driven log if you desire; however, this is often done to save space and space is one thing you can have plenty of.

With an integer analog value taking 2 words, and time and date using 5 words, you can store 4,571,428,571 readings in 32 GB. Since there are 31,557,600 seconds in a year (approximately), you can store a little more than 140 years

worth of readings on the drive. Adding a second analog value adds 2 more words which reduces your logging capability to a mere 112.6 years of readings. If this isn't enough, try reducing the frequency to 1½ seconds.

There are several ways to use the drive which include logging directly to the device or buffering the data in the SCADAPack for downloading periodically. Depending on the logging frequency, the SCADAPack can buffer days, or even years worth, of data, which can then be either copied or moved automatically when a thumb drive is connected.

So far, we have found this to be most exciting to our largest and smallest customers. The smaller customers cannot afford the money to install bullet-proof communications infrastructure but still must comply with reporting requirements from several agencies. This technology allows them to retrieve data otherwise lost if their SCADA communications system goes down (or if they don't even have one). The largest agencies often have trouble getting data for interested departments from the SCADA or IT departments and can use this feature to put the desired data directly in the hands of others without going through channels which can otherwise take at least days and often months to get.

If you have SCADAPack 300 Series controllers in the field, there is nothing to buy with the possible exception of an upgrade to your TelePACE or ISaGRAF programming software. The USB ports already exist and the necessary firmware for the controllers is free, as is the file conversion utility.

For a demonstration of this feature, please call Sage Designs.

SAGE ADVICE

DNP3 Master Mode in RTUs

One of the often overlooked capabilities of DNP3 based SCADA systems is the importance of support for the DNP3 Master mode in your remotes. If a device only supports the Slave mode, you are unable to take advantage of many of the important features that the protocol supports such as Data Concentration, Sub Master or Peer to Peer capabilities.

Where this comes into play in Water and Waste SCADA applications is when remotes need to exchange data or even when the SCADA host is

sages can be sent back and forth between remotes without the need for the data to first be read into the SCADA master and then retransmitted to other units in need of the data.

This scenario is also true for water systems where a tank sites and pumping plants or wells are in need of data to ensure that tanks are filled and pumps can be run with peak billing rates in mind. Subsystem autonomy is often desired in a modern water SCADA system where a tank and its supply of water, whether it is wells or a pump station, must exchange data and continue to operate when contact with the SCADA master station is lost.



down or unreachable. Take, for example, the simple application of lift station control in a waste collections system. Often the operation and control of your lift stations can be impacted by the flows and levels of either upstream or downstream stations and it may be important to have data from the other stations in line to optimize a station's control for either energy savings or for spill prevention. With RTUs capable of peer to peer communications, mes-

Without a master station capability, you lose some of the more important aspects of a well designed SCADA system. Be sure when selecting a PLC or RTU for your DNP3-based SCADA system that the products have a well developed DNP3 Master Station Profile which is available from every manufacturer whose products support this feature and have been tested and approved by DNP3.org.

Powering IP Cameras with PoE

One of the many advantages of IP cameras is that they can often receive their operating power via the ethernet, using the same cable that is used to connect the camera to the network. This eliminates the need to connect the camera to a separate power supply.

However, just because an IP camera features PoE, there are still certain conditions under which the camera will require connection to an external power source.

PoE technology originated with IP telephones. Telephone desk sets need very little power so the IEEE standard for PoE started at 17 watts. For powering basic, indoor IP video cameras, this is sufficient. However, cameras often need to operate outdoors, requiring heaters to prevent freezing and fans to cool and remove condensation. These demand more than 17 watts to operate. The same is true for cameras with motors providing pan and tilt movement.

Until a new PoE standard (PoE Plus, 30 watts) is adopted by switch manufacturers, most mainstream environmental and moveable cameras will require an external power source. In these cases, conventional CCTV power can be used.

For IP cameras that do not require more than 17 watts to operate but have not been designed with PoE, it is still possible to bypass the need for conventional power by using a "power injector." This little device will allow a non-PoE camera to receive its power via category wire.

Sage Designs offers many IP cameras with PoE, including Vicon's I-ONYX line and its V910 Roughneck vandal resistant dome. Attend one of our October SCADA & Security Seminars to learn more.




SCADA & Security Seminar

October 15, 2008

8AM - Noon
 Holiday Inn Hotel & Conference Center
 7000 Beach Blvd.
 Buena Park, CA 90620
 714-522-7000

October 16, 2008

8AM - Noon
 The Waterfront Plaza Hotel
 Jack London Square, 10 Washington Street
 Oakland, CA 94607
 510-836-3800

- 8:00 - 8:30 Introductions   
- 8:30 - 9:30 **Wireless Mesh: New Approaches for SCADA Management & Security**
 Jeff Butler, Western Region Systems Engineer for Firetide will discuss design considerations for Firetide Spread Spectrum Mesh Radio Systems in Water / Waste Water deployments, for both video surveillance and data applications.
- 9:30 - 9:45 Break
- 9:45 - 10:45 **Vicon's IP Video (Video Anywhere Stable & Reliable)**
 Vicon representatives will discuss the benefits of IP video and touch-on and answer questions with regards to network architecture when considering IP Video. Vicon Industries Inc. is a leading designer and producer of video surveillance systems. ViconNet 5.0 combines the power of ViconNet with open platform flexibility, allowing for easy integration with most major IP camera manufacturers, such as Panasonic, Bosch, Sony, Arecont Vision, ACTi, Axis and IQinVision. Vicon engineers will demonstrate how Video Surveillance over IP (VSoIP) will make CCTV surveillance easier and more effective than ever before.
- 10:45 - 11:45 **Innovations in RTU Connectivity**
 Jim Quist, Control Microsystems' Market Manager for Water and Waste, will discuss innovative new features for RTUs such as USB ports and Bluetooth wireless connectivity. In addition to "Drive-by-SCADA" capabilities provided by Bluetooth, he will discuss the uses for USB ports including the elimination of connection problems for technicians and the ability to do massive amounts of data logging at remote sites.
- 11:45 - Noon Questions & Answers

----- Download the Registration form at: <http://www.sagedesignsinc.com/events/index.htm> -----

Pre-registration Required

To Register: Call 1-888-275-7243 to reserve your seat. Then complete the information below and send to us via fax to 1-888-329-7243 or by email info@sagedesignsinc.com. A confirmation will be emailed to you. Hotel Directions can be found on the Events Page of our website: <http://www.sagedesignsinc.com/events/index.htm>

If you wish to register for the afternoon DNP3 seminar, too, sign up for both seminars using the DNP3 Seminar registration form. The morning seminar is free, but there is a \$50 fee for the DNP seminar.

- Register the above person in the morning free seminar in Buena Park on October 15, 2008
- Register the above person in the morning free seminar in Oakland Park on October 16, 2008

Name (please print):	Title:
Company:	Phone:
Address:	Fax:
	Email:
City/State/Zip:	

There is no charge for this event, but please call us if you need to cancel your reservation. Seating is limited.

***** Registration Deadline: October 9, 2008 *****

Distributed Network Protocol

DNP3 Protocol Basics

October 15, 2008

Noon – 5PM
Holiday Inn Hotel & Conference Center
7000 Beach Blvd.
Buena Park, CA 90620
714-522-7000

October 16, 2008

Noon – 5PM
The Waterfront Plaza Hotel
Jack London Square, 10 Washington Street
Oakland, CA 94607
510-836-3800

4 Contact Hours

This seminar is designed for engineers, integrators and end users specifying or implementing new SCADA systems. We will introduce the basics of DNP3 and help demystify the concepts and the methodology of this IEEE standard, open protocol. The presentation will cover the three methods of polling a remote, the types of data returned from the remotes, and how to configure the remotes and SCADA master station for each type of polling. We will also discuss the dangers of an improperly configured DNP3 system and how to avoid those pitfalls. Consideration of a system's communications channel, as well as the methods of getting the most from a limited communications bandwidth, will also be discussed. Those who want to understand why DNP3 is rapidly replacing Modbus as the default protocol for water and wastewater SCADA systems will want to attend.

This session is fairly technical but, is not so detail-oriented as to be beyond anyone with a basic understanding of SCADA. This session is a must for anyone planning to be involved with their first DNP3 system. Full 2-day DNP3 training classes are available for those who wish to understand more than the basics.

----- Download the Registration form at: <http://www.sagedesignsinc.com/events/index.htm> -----

Pre-registration Required

To Register: Call 1-888-275-7243 to reserve your seat. Then complete the information below and send to us via fax to 1-888-329-7243 or by email info@sagedesignsinc.com. Do not email credit card account data. A confirmation will be emailed to you. Hotel Directions can be found on the Events Page of our website: <http://www.sagedesignsinc.com/events/index.htm>

- Register the person below in the Buena Park seminar from 12-5PM on October 15, 2008 - \$50 Fee, includes lunch
- Register the person below in the Oakland seminar from 12-5PM on October 16, 2008 - \$50 Fee, includes lunch
- Also sign me up for the free SCADA & Security Seminar from 8-Noon.

Name (please print):	Title:
Company:	Phone:
Address:	Fax:
	Email:
City/State/Zip:	

METHOD OF PAYMENT: Check, Visa or Mastercard. Fees \$50 per person, includes lunch. Payment should be made to Sage Designs, Inc. Fees are due on or before the Seminar. No Shows or Cancellations made less than 5 days prior to the event are not refundable.

- Check:** After telephoning your intent to register, mail a check addressed to Sage Designs, Inc. along with a copy of this form, or bring it to the seminar.
- Visa/MasterCard:** After telephoning your intent to register, complete the info below & fax to 1-888-329-7243. Your account will be charged the day of the event.
 Cardholder Name (please print): _____
 Cardholder Authorization Signature: _____
 Account # (Visa or Mastercard only) #: _____ Exp Date: ____/____
 Cardholder Billing Street Address: _____
 Cardholder City/State/Zip: _____
 Cardholder Phone & email: _____

***** Limited Seating. Registration Deadline: October 9, 2008 *****

Training Classes

ClearSCADA

SCADAPack

ClearSCADA Training Course

December 2-3-4-5, 2008 – Mill Valley, CA
February 24-25-26-27, 2009 – Buena Park, CA
May 12-13-14-15, 2009 – Mill Valley, CA

Day 1 (8AM– 4PM)	Installing ClearSCADA, Introduction to ClearSCADA, Components, Using ViewX, Using WebX, ClearSCADA Help
Day 2 (8AM - 4PM)	Configuring using ViewX, Database Organization, Basic Telemetry Configuration, Creating Mimics, Creating Trends
Day 3 (8AM - 4PM)	Configuring using ViewX, Templates & Instances, Logic Languages, Security, Communications Diagnostics
Day 4 (8AM - 4PM)	Reports, System Configuration, System Architecture, Questions

Cost: ClearSCADA Training Course \$1,800

SCADAPack TelePACE Training Classes

November 17-18-19, 2008 – Mill Valley, CA
February 18-19-20, 2009 – Buena Park, CA
May 6-7-8, 2009 – Mill Valley, CA

An optional SCADAPack, SCADAPack32 or SCADAPack350 is available at a special price with the course—an excellent way to get started using Control Microsystems' Controllers.*

Day 1 (8AM - 4PM)	SCADAPack controller operation, Series 5000 I/O, TelePACE introduction
Day 2 (8AM - 4PM)	TelePACE advanced programming techniques and advanced functions
Day 3 (8AM - 2PM)	Controller communications, Modbus Master/Slave protocol, Diagnostics, Modems

Cost: SCADAPack TelePACE Course \$1,125

- * Optional SCADAPack350 Training Kit – adds \$990
- * Optional SCADAPack 32 Training Kit – adds \$1,060
- * Optional SCADAPack Training Kit – adds \$970

Instructor: Tony Sannella, Sage Designs, a Control Microsystems' Factory-certified Instructor.

Location: See individual course registration form. Those requiring overnight accommodations should call the hotel directly for reservations at 415-332-5700.

What should I bring? Laptop computer with minimum of Win 2K or XP with 15mb free disk space, CD ROM, mouse with a scroll wheel, working serial port, and necessary permissions to install software on your computer.

What is provided? Lunch and coffee, soft drinks and snacks each day.

Optional SCADAPack Training Kits at special course pricing: **Limit one (1) for every two (2) students per organization. Training Kits will be shipped N/C to training facility, provided your registration is received approximately 4 weeks before the first day of the course. Training kits include a SCADAPack 350, SCADAPack32 or SCADAPack Controller, TelePACE Software, Hardware Manual (on CD-ROM), I/O Simulator board, AC/2 Transformer, & programming cable. Prices do not include applicable California sales taxes.*

----- Download the Registration form at: <http://www.sagedesignsinc.com/events/index.htm> -----

Please send me the Registration Form

ClearSCADA: Dec 2-5, 2008 Feb 24-27, 2009 May 12-15, 2009
4-Day Course

SCADAPack TelePACE: Nov 17-19, 2008 Feb 18-20, 2009 May 6-8, 2009
3-Day Course



Name (please print):	Title:
Company:	Phone:
Address:	Fax:
	Email:
City/State/Zip:	

***** Registration Deadline: 4 weeks before 1st day of course *****

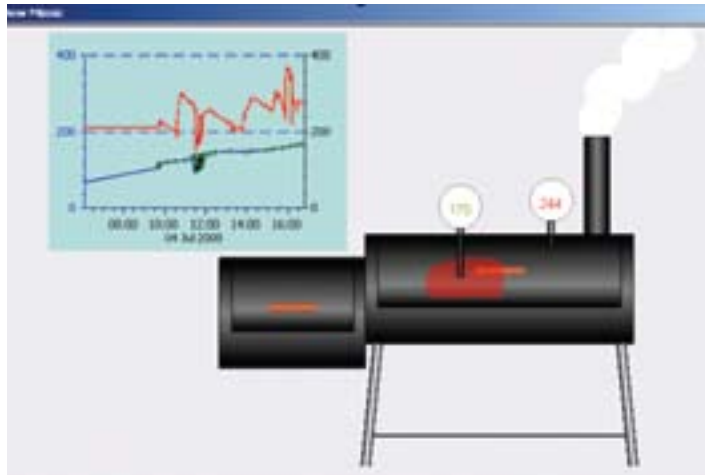
All registrations are subject to cancellation fees. A confirmation notice will be sent to all registrants on or before the deadline date.

What's Tony Been Smoking?

This 4th of July, I set about preparing a pork shoulder roast in my wood-burning smoker for a gathering of friends. After getting up at 5:30 AM to start the fire and getting the properly spiced roast on by a little after 6:00, I discovered that the dial thermometer I was using to monitor the cooking chamber had become unreliable because the dial portion disconnected from the sensor, making the instrument unusable.

Digging through my box-o-spares at the house, I pulled out an old SCADAPack and a thermocouple input expansion

board which I quickly put into service. One TC, I put into the cooking chamber, the other was shoved into the now use-less thermowell from the disassembled dial thermometer. I then set up my laptop with ClearSCADA to monitor the two temperatures which I trended and then set up ClearSCADA to send my cell phone an alarm message whenever the temperature in the chamber got too high or low. The entire deployment of the Bar-B-DAQ™ system took less than an hour and yielded a savory result. Next year, I plan to add damper control.



Wireless Mesh: New Approaches... *Continued from page 1*

in water tanks and delivery systems is critical for public safety, true. But just as important are preventative systems that ensure any breach in water security doesn't occur from the start.

Surveillance systems that use mesh for streaming live, digital video feeds are ideal for monitoring water tanks. For example, Sage Designs' deployment for the City of La Palma utilizes Firetide wireless mesh network to provide video surveillance at water treatment plants—to prevent vandalism and secure water supply at remote locations. Three or four strategically placed cameras can monitor 12 tanks without the need to trench and pull expensive cable.

Plan for Success

To ensure the success of any installation that adds wireless mesh networking on top of SCADA technologies requires advance planning. Organizations must perform site surveys to determine any issues involving line-of-site obstructions that may be present in the surrounding geography (hills and valleys) or metro areas (buildings and tunnels).

Planning for scale is a key consideration, especially where IT departments expect to add new nodes or entire mesh clouds. Video applications can eat bandwidth quickly and any wireless backhaul in-

frastructure should have plenty of room to grow. This might sound obvious, but SCADA-centric organizations that focus on low-data rate, narrowband data can easily underestimate the requirements for transporting high-throughput data across multiple paths for redundancy.

Data redundancy capabilities are a central component of self-healing mesh networks, which ensure data is always accessible across a network. It's a key point, particularly in video security applications. The impact of redundancy should never be overlooked during the planning phase.

There's no question whether wireless mesh networks layer well with SCADA systems. The latter deals specifically with mission-critical data that impacts not just the industry, but also the very core of public safety. As agencies such as the Department of Homeland Security require greater mechanisms for protecting those systems—streaming digital video surveillance, for example—it's not a matter of if, but when wireless mesh will become the go-to option for enhancing SCADA networks.

Jeff Butler is Systems Engineer at Firetide. He can be reached at jbutler@firetide.com

SCADAWave

Industrial Strength Data Radios

SCADAWave Ultra

Flexible Spread Spectrum Radios

- Industry leading performance with unique practical features

SCADAWave E-Series

High Reliability Licensed Radios

- The fastest, most advanced licensed digital radios available

SCADAWave M-Series

High Value Licensed Radios

- Easy, reliable and rugged

SCADAWave Manager

A companion software package for over-the-air configuration, firmware upgrades, diagnostics, alarming and performance data.

All SCADAWave products come with our industry leading 3-year warranty.

**CONTROL
MICROSYSTEMS**

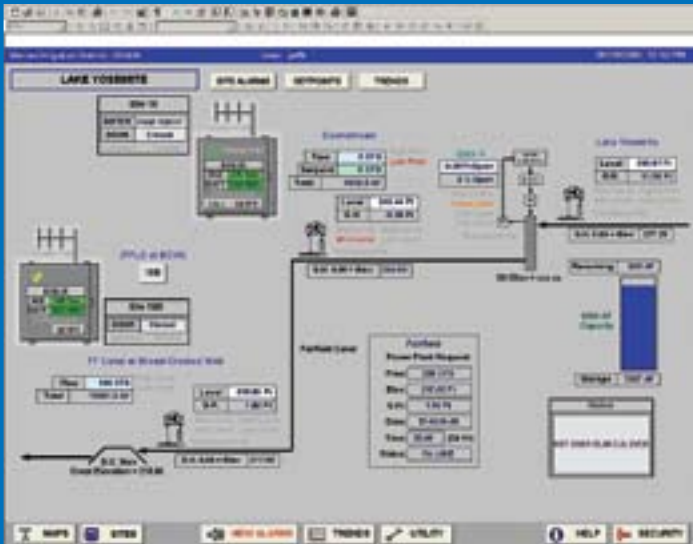
SCADA products... for the distance



From the company
that brought you **SCADAPack**

www.controlmicrosystems.com

SAGE SITING



Lookout! Here Comes ClearSCADA

The Merced Irrigation District (MID) has embarked on a multifaceted project that includes upgrading their existing Lookout™ SCADA software and computer hardware. Control Microsystems' ClearSCADA was chosen as the HMI replacement utilizing new redundant servers to allow use of ClearSCADA ViewX clients for Control Room operations and programming, while ClearSCADA WebX clients would be utilized for operators in the field.

With the help of Sierra Control Systems, a systems integrator located in Carson City, NV, a framework was established so that site creation time could be minimized and yet allow handling of specialized needs required at many of the sites. The question was, would MID take advantage of all the new features in ClearSCADA or duplicate the type of screens used previously? Because of time restraints, which included the upcoming irrigation season, getting more familiar with ClearSCADA, and installing new hardware and infrastructure, it was decided to basically "mimic" what they already had while taking advantage of some of the advanced features. In this way, the operator's learning curve would be minimized while sites could be created and checked against the system already in place.

As it turned out, MID benefited by creating screens similar to the previous HMI displays. The screens are mostly tabulated data on a simple site schematic which doesn't require much system overhead to display. Certain key values are displayed in

boxes with color-coded backgrounds to help the operator quickly locate vital information specific to their operations.

Duplicating the existing trend charts was more of a challenge; specifically, while using WebX in the field over a slow connection. Experimenting with the various types of trend charts available, it was decided to include an embedded trend chart for the simple sites and utilize fly-out menus for individual trend chart selections at all sites. In this way, convenience and flexibility were achieved in an easy to use manner.

A variety of aids were utilized to help navigate to site screens or trend charts. A user could navigate to a site from one of the overview maps, or simply pick from one of the various fly-out menus provided on each screen. In this way, the user could jump immediately to the site screen or trend chart of interest.

Although some behind the scenes work is still in progress, the new ClearSCADA system is successfully up and running. It began with the ViewX users and has progressed to the WebX users. This upgrade added true redundancy, the ability to easily extract historical data, and allow numerous users to keep an eye on things instead of relying on just a central operator. Working as a team, system operators now have a clearer picture of their system.

*By Jeff Keller, SCADA Specialist,
Merced Irrigation District*

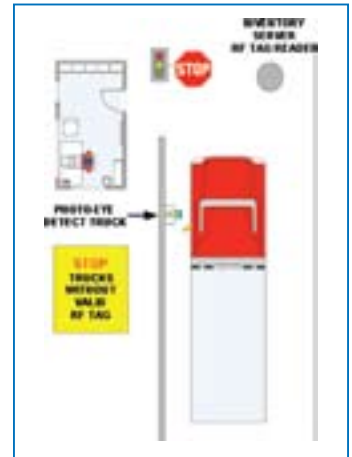
SCADAPack Integrated into RFID System

Control Microsystems' SCADAPack technology is being used to increase security and streamline sea port efficiencies at the Port of Long Beach. The system, designed by Chuck Chiapellone of System Automation & Maintenance Engineering, Inc. (SAMEI), uses the low power capabilities of the SCADAPack350 with wireless and a solar-charged battery system, eliminating the need for expensive electrical concrete cutting, trenching, and long conduit runs, making for a fast and cost-effective installation.

One of the larger cargo container loading facilities was planning to implement a new system to track real-time movement of cargo container deliveries to their facility by outside trucking companies. The new inventory tracking system utilizes multiple RF Tag readers mounted throughout their facility by detecting a RF (Radio Frequency) Tag mounted on the trucks. Critical to the success of the new tracking system is the identification and operation of the RF tag on the arriving trucks.

To detect the information offered by the RF tags on the incoming trucks, a remote entry station was installed next to the main truck entrance. This remote station utilizes a SCADAPack350 controller connected to sensors and a RF Tag Server to detect the identification of a truck and then wait for a verification that a valid tag was detected from each truck by the real-time inventory system. The complete transaction needs to be less than 3 minutes per arriving truck, making timing critical to the success of the operation. The design required the ability to use wireless Ethernet for communication and portable power such as a solar panel array to power the remote station. The SCADAPack350 was the perfect choice for the communication and low power consumption.

The SCADAPack controller continually monitors for the presence of a truck using a photo-eye which closes a contact, then waits for a message received from the remote Real-time Inventory Server. Simultaneously, the arriving truck is monitored by the Real-time Inventory Server for an installed valid RFID tag on the



arriving truck. Once the RF ID tag is read, the specific ID number is verified against the server database to determine if it is a valid tag. If the tag is valid, a message is sent to the waiting remote SCADAPack station, and if the valid ID Tag message is received within the 3-minute window, the traffic light changes to green, signaling the truck driver to proceed to the main entrance.

If no RF ID tag is read or the tag ID number is invalid, no message is sent to the remote SCADAPACK controller. The controller then waits for three minutes after a truck is detected, and if no message is received, the traffic light changes to red, holding the truck until the Tag ID issue is resolved. The controller resets, then waits for the next truck.

Start-up and operation of the system improved the recognition of valid RF ID tags from 56 percent to 99 percent, providing higher throughput, less delays and valid tracking of the containers through the Port. The ability of SAMEI to provide a solution for managing the gate and interfacing with the Real-time Inventory Server enhances port safety and efficiencies.



SYSTEM AUTOMATION & MAINTENANCE ENGINEERING, INC.
307 E. Chapman Ave., Suite 101 Orange, CA 92666
Phone: (714) 670-9822 E-mail: info@sami.com

What is happening on your watch?



What if you knew, in real-time?

Wireless video from Firetide.

Firetide wireless mesh networks enable you to deploy real-time surveillance wirelessly faster and more cost effectively than wired.

Find out why Buffalo, Chicago, Dallas, and Phoenix have already chosen Firetide for wireless video surveillance.

Visit www.firetide.com or call 1-877-FIRETIDE.



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The Sage Advisor

SCADA, SECURITY & AUTOMATION NEWSLETTER

Calendar of Events

September 7-8, 2008	CWEA Northern Regional Training Conference, Sparks, NV
September 11, 2008	CWEA Tri-Counties Section Workshop & Vendor Exhibit, SLO, CA
September 16, 2008	SDCWWG & CWEA Vendors Fair, Lake Poway, CA
September 21-24, 2008	Society of Petroleum Engineers ATCE 2008, Denver CO <i>(Visit the Control Microsystems exhibit)</i>
September 25-26, 2008	Tri-State Seminar on the River, Primm, NV
October 15, 2008	Free SCADA & Security Seminar*, 8AM-Noon, Buena Park, CA
October 15, 2008	DNP3 Protocol Basics* ½ day Seminar, 12-5PM Buena Park, CA
October 16, 2008	Free SCADA & Security Seminar*, 8AM-Noon, Oakland, CA
October 15, 2008	DNP3 Protocol Basics* ½ day Seminar*, 12-5PM Oakland, CA
October 15-16, 2008	ISA Expo 2008, Houston, TX <i>(Visit the Control Microsystems exhibit)</i>
October 18-22, 2008	WEFTEC '08, Chicago, IL-Oct 18-22) <i>(Visit the Control Microsystems exhibit)</i>
October 21-22, 2008	CA-NV/AWWA 2008 Fall Conference, Reno, NV
November 5-6, 2008	Remote 2008 Conference and Expo, Atlanta, GA, <i>(Visit the Control Microsystems exhibit)</i>
Nov 17-19, 2008	SCADAPack TelePACE Training Class*, Mill Valley, CA
December 2-5, 2008	ClearSCADA Training Class*, Mill Valley, CA
December 2-5, 2008	ACWA Fall Conference & Exhibit, Long Beach, CA
February 18-20, 2009	SCADAPack TelePACE Training Class*, Buena Park, CA
February 24-27, 2009	ClearSCADA Training Class*, Buena Park
April 6-9, 2009	CA-NV AWWA 2009 Spring Conference, Santa Clara, CA
April 28-30, 2009	CRWA 2009 Education & Exhibitor Expo, Lake Tahoe, NV
April 29-30, 2009	CWEA Annual Conference, Palm Springs, CA
May 6-8, 2009	SCADAPack TelePACE Training Class*, Mill Valley
May 12-15, 2009	ClearSCADA Training Class*, Mill Valley
May 19-22, 2009	ACWA 2009 Spring Conference, Sacramento, CA

* Download the registration form from our website or call for more information.

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