

Integrator Spotlight: Sierra Control Systems



As the decade of the 60's came to a close, Sierra Control Systems, Inc. founder Allen Wilson recognized a need for accurate measurement of open channel water systems. In 1972, he

incorporated Sierra Control Systems in Carson City, Nevada. Initially working from a garage with the help of family, the company developed highly accurate water level instruments, water control systems, and radio telemetry. Employing a soup-to-nuts approach, SCS engineered, designed the circuits and the circuit boards, and machined and fabricated much of the hardware in-house. They developed the programs and installed the finished product. SCS then followed through with support and training.

SCADA was a relatively new, emerging technology. One of the industries to make wide-use of the technology was hydroelectric power generation. Sierra Control Systems was contracted to engineer and provide equipment to monitor and control the critical processes involved at many of the hydro power plants in California. The expertise and reputation of the company grew along with the SCADA industry itself.

In addition to SCS's work with the power industry, municipal utilities and irrigation districts also wanted to monitor and control their facilities. To this end, the company developed tank top monitors with telemetry for water storage tanks, pump controllers, and gate controllers. These could report to a master telemetry unit in a central location. Again, the product was engineered and built down to the board level at the Sierra Control Systems facility. The company was quickly becoming known as a provider of reliable, quality equipment, much of which is still in service today.

As the 90's approached, open architecture in SCADA systems became an important consideration, as more vendors vied to provide products for the growing SCADA industry. It became essential that equipment from vendor "A" could integrate with equipment

from vendor "B". Suddenly, everyone was speaking Modbus. Sierra Control Systems quickly embraced the changes. The new Control Microsystems' VS/3 RTU had been introduced. The convenient, single-board package began appearing in SCS controllers. The Control Microsystems' TeleSAFE 6000 RTU soon followed. SCS continued to develop products to expand the new controller's capabilities. These included multiplexers for enhanced I/O count and telemetry interfaces to existing SCS technology, among others. As the choice of OIT devices was limited at this time, Sierra Control Systems designed and built its own. These capabilities helped accelerate the company's entry into the System Integrator ranks, while setting the company apart.

Today, SCS remains at the forefront of modern SCADA system suppliers. Their Series 900 controller, which is based on a Control Microsystems' SCADAPack controller, has been deployed in hundreds of measurement and control applications throughout the West. The DNP3 protocol capabilities of these controllers can provide their customers with the latest in open architecture SCADA solutions, without the need to reengineer the products. Control Microsystems' ClearSCADA SCADA host software nicely ties these systems together, creating a system that can meet the needs of the most demanding of customers.

Sierra Control Systems works closely with engineers at the Irrigation Training and Research Center at California Polytechnic State University, San Luis Obispo. The ITRC has developed a vast knowledge of irrigation system practices and flow studies that it shares with irrigation districts throughout California. ITRC assists the districts with engineering aimed at maximizing the efficient use of valuable water resources through monitoring and automated control. Sierra Control Systems has provided, installed, and tested gate monitoring/control telemetry units for several California and Nevada Irrigation Districts.

Sierra Control Systems is located in a 15,600 sq. ft. facility at 940 Mallory Way in Carson City, Nevada. Currently,

SCADAwise

Tools of the Trade

Software programs used for path studies are an amazing tool. They allow you to estimate losses you will have in your radio system before you get to the field, so you know what is worth testing and what is not. Although there are programs for this that cost tens of thousands of dollars, there is one piece of freeware that does a pretty good job despite its minor flaws: Radio Mobile.

The program allows you to place radios anywhere on the earth and uses elevation data to generate a profile of the terrain between stations, which is how it calculates the path losses. It can use a variety of sources for the data, including the Shuttle Radar Topography Mission (SRTM) data from NASA.

You then input details about your radio frequency, sensitivity, antenna gain, cable losses and other information and it will generate details about the path.

Unfortunately, none of the programs for path studies take into account buildings, trees or other man-made obstructions, which can spell disaster for a radio path, and even the most

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careful practitioner cannot make up for this omission. On the up-side, this will tell you if there is hope for your system.

Now anyone can get a picture of what challenges they will face in building a radio network, whether it be for voice, video or data, without committing to an expensive field survey, but buyer beware. It's not that Radio Mobile doesn't accurately calculate the losses. I have compared the results to the expensive products and found that the results are pretty much identical. It's that no matter how well these programs work, they are no substitution for a real survey done in the field.

You can download a free copy of Radio Mobile at: www.cplus.org/rmw/english1.html, but please consider sending a donation to help pay the expenses of the programmer.



SCS is headed by company president Jerry Kelley. Mr. Kelley has been with the company since its inception and is a major influence in the product integrity and engineering practices employed. Day-to-day operations are overseen by general manager Joel Mc Menamy. SCS provides skilled jobs for 22 local Nevadans. With a full-time staff of 7 engineers and the support of fabrication, manufacturing, test, field, and administrative resources, the company has never been busier. SCS still uses state-of-the-art products from Control Microsystems in their "Series 900" controllers. Sierra Control Systems is an active Control Microsystems SCADAPartner Plus member and a major user of ClearSCADA. As new products come to market, SCS carefully

evaluates their usefulness and reliability. The engineers continually update their knowledge of new software and hardware with manufactures training, including reporting options and advanced HMI development. Sierra Control Systems enjoys a long reputation for quality, reliability, and service.

With decades of experience as a manufacturer of telemetry and control systems, and a pioneer in the field of systems integration of SCADA systems, Sierra Control Systems enters the new century with optimism.

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