The Sage Advisor

Lookout 4.0 Advances SCADA Technology

National Instruments just started shipping a major revision to their Lookout HMI/SCADA software. Lookout 4.0 has been in beta testing over the last six months. A number of those testing the beta version were Sage Designs' customers looking to take advantage of the powerful features offered by Lookout. Some Lookout 4.0 highlights are:

Multi-server, Multi-client Networking: Browse and click method of server, client selection makes it very intuitive and easy to configure

New HART Interface Module
for Control Microsystems' SCADA Controllers

Control Microsystems' Model 5904 HART interface module allows connection of HART communications devices, such as flow and pressure transmitters, directly to the SCADAPack SCADA controllers and Micro16s. The 5904 HART interface is ideal for applications using the CMI RealFLO Gas Flow Computer, oil/gas well monitoring or simply any application in which smart transmitters are used.

Up to four HART interface modules, each supporting up to 15 devices, may be connected to each SCADA controller for a total of 60 devices. From the SCADA controller's Ladder Logic program, process variables may be read using an easy-to-configure communications block. From C applications, complete read and write functions are available to allow users and OEMs to have complete access to the HART devices.

The SCADA controller may be configured as a primary or secondary master, allowing two SCADA controllers to access the same HART transmitters. This ability is critical for redundant applications, or where two separate processes/users require the same information. Convenient terminals are provided for connection of portable HART programming devices.

Like all of Control Microsystems products, the 5904 is designed for –40°C to 70°C operating temperatures, and has been submitted for CSA Class 1, Division 2 area classification approval.

networked applications. You can connect multiple servers and clients in a networked configuration to publish data across multiple factory floors, even across the globe. Any number of clients can connect to a server. A separately purchasable client license is required to connect a client to a server.

Interactive Web Support: With Lookout 4.0, you can export a client process file to a web server so that it can be loaded remotely by Internet Explorer on a Windows platform. You not only can monitor the process, but also control it. Tight security is enabled so that only authorized users can control the process. Using the Web client, connection can be made to a server across the globe.

Distributed Historical Logging: Lookout enables logging of real time data to any computer in a network. Data can also be retrieved from any computer in a network.

Distributed Alarms and Events: All alarms and events are stored in the Citadel database at any computer in a network. Alarm activations and deactivations can be done from any computer in the network. Events can be logged to a database either on the local computer or a remote computer. Alarms and Events can also be printed to a csv file and opened using a spreadsheet in the local computer. Alarms can be organized in a hierarchy of alarm areas, making it possible to associate alarms with different areas (such as different parts of a production facility or different stages of a process).

Security: Security set up is very intuitive and easy to use. Users are organized into different groups. You can limit group and user access to processes and folders. In addition, access limitations to screens and individual objects are based on each user's priority level, as currently done in Lookout 3.
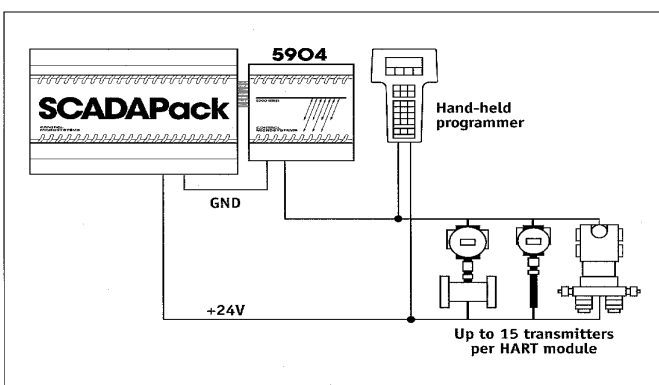
FREE SCADA SEMINARS

October 20th — Ukiah, CA
October 21st — Gilroy, CA

Sage Designs is hosting two regional SCADA seminars in October. These half-day seminars will introduce you to various SCADA products on the market, such as the Control Microsystems' SCADAPack line of SCADA-optimized PLCs, Lookout HMI software from National Instruments, Specter Instruments' WIN-911/WIN-411 alarm dialing and paging software, and various SCADA communications options. The seminar is free, but you must call to reserve your place. Both seminars will be held from 8:00AM until noon.

Ethernet Gateway for SCADA Controllers

The 5905 Ethernet Gateway from Control Microsystems connects Modbus devices to an Ethernet LAN. The 5905 is available in 2 versions, a stand-alone unit to connect to third-party Modbus devices, and one to connect with the SCADAPack, TeleSAFE Micro16 or SmartWIRE controllers.

The 5905 has a serial port for connection to either Modbus master or slave serial devices. These messages are transposed into Modbus TCP/IP messages and are connected to the Ethernet LAN via a RJ-45 10BaseT connection. Each 5905 supports up to 8 other Modbus TCP/IP connections, such as to other 5905s, Lookout HMI host software, or PLCs.

Serial port connections may either by via RS-232 or RS-485, allowing multiple Modbus devices to be connected to each 5905. The 5905 also supports RTS and CTS on the RS-232 port, allowing it to be used with radios or other communications modems in half duplex mode. It should be noted that the 5905 allows easy interface of multiple or dual-redundant host computers that must be able to communicate to SCADA systems over a single communications system.

Typical applications include connection of devices, such as RTUs, PLCs, Variable Frequency Drives, radio modems, and PID controllers, to a LAN. This allows water and wastewater plants, pump stations, gas plants, gas compressor stations, etc. to take advantage of high-speed LAN communication systems for their Modbus devices.

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Sage Sitings:

North American Transformer Automates Manufacturing Process

North American Transformer Company in Milpitas, CA manufacturers power transformers for electrical distribution substations. The drying and oil impregnation of these transformers involves a 5-step process of heating the transformers under a vacuum and the introduction of a solvent vapor. The dual processes are now controlled entirely by Lookout using Koyo PLCs as dumb I/O.
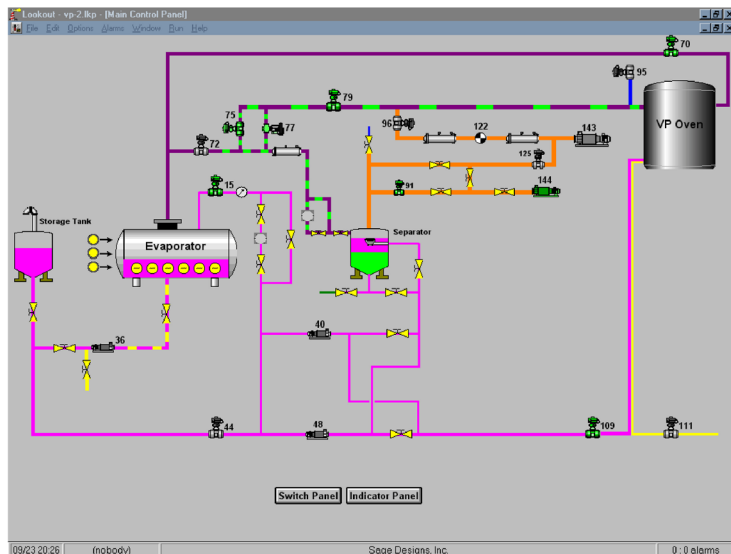
Rich Ferrante programmed this Lookout application without the use of a consultant or systems integrator. The application Rich developed includes permissives, stepping timers, multi-element neutral zone temperature

controllers and several levels of security. The system replaces two cabinets of electric and pneumatic controls, including relays, timers and interlocks used since the mid '70s. The two new systems each include redundant PCs with 200 I/O versions of Lookout, each communicating over an RS-232 serial link with DL 450 PLCs, each with two 8-point TC cards, one 8-point A/I card, two 16-point D/I cards and three 16-point relay output cards.
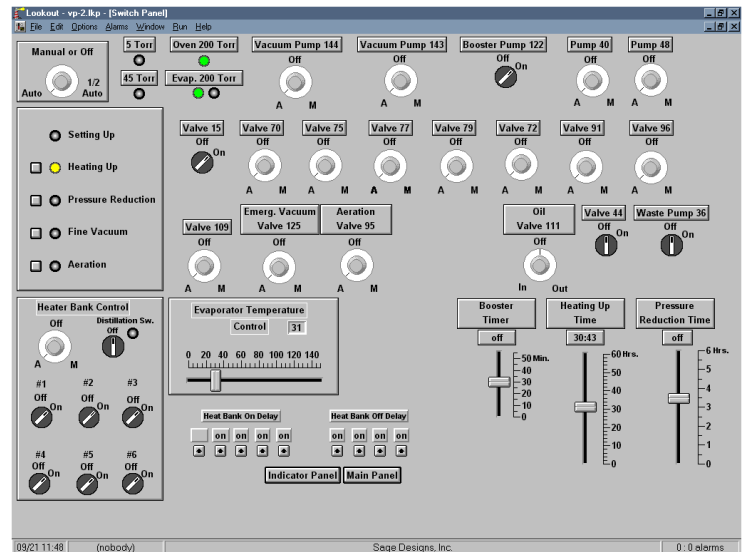
Rich has been working on the application since early this summer while managing his responsibilities as the Facilities Supervisor, which has always been a more than full-time position. He continues to fine-tune his Lookout control system and HMI, but feels as though there is little need for further improvement. *"I found the project to be a fun and interesting challenge. Although this is my first exposure to an HMI project, Lookout made the project easy to implement because of its ease of use and intuitive nature."*

Until very recently a division of Rockwell Automation, North American Transformer is soon to be a division of WES Systems in Waukesha, Wisconsin.

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UHF/VHF Microwave Radio Modems

Sage Designs now carries the Teledesign line of radio modems. Among those products is the TS4000, a high performance radio modem supporting over the air data rates in excess of 19,200 bits per second. Its advanced data processing architecture allows high data throughput even on narrow 12.5, 7.5 and 6.25 kHz channels. The TS4000 incorporates a wide range of high performance radio modules that meet the stringent demands of both domestic and international regulatory agencies. Advanced features, including address selective store-and-forward data repeating, multilevel packet management, remote system adjustment and network-wide diagnostics, makes the TS4000 the new benchmark for next generation radio modems.

- Selectable operating modes for transparent and packet data operation
- Provides addressed communications for devices that are not directly addressable themselves
- Includes store-and-forward repeating for wide area coverage
- Provides two individually configurable data ports
- Supports data activation (3-wire) and RTS/CTS handshake protocols
- Includes powerful network diagnostics

Million $ Customer Award

Control Microsystems and Sage Designs recently hosted a luncheon for the entire staff of Sierra Control Systems to honor them for having purchased over $1 million of Control Microsystems' products and for their continued commitment to the SCADAPack product line.

Sierra Control Systems is a systems integrator located in Carson City, Nevada, specializing in the water and wastewater telemetry market. They have been in business since 1972 and a CMI customer for many years. They have recently completed projects for several irrigation districts in the Central Valley and water system SCADA projects for municipal utilities throughout Nevada and eastern California.

Sierra Control Systems stocks a supply of SCADAPack and SCADAPack Light controllers and various I/O modules to supply their projects, customers and others in need of quick deliveries.

Jim Quist , Regional Sales Manager for Control Microsystems (left), presenting Million Dollar Club award to Allen Wilson, President of Sierra Control Systems, Inc. (right)

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Lookout 4.0 Features *(continued)*

Connection Browser: The Connection Browser allows you to easily navigate between objects, to follow connections, and to identify unused objects. The Object Browser provides a window into the project, making it easier to edit objects and connections without getting lost in a single, alphabetical list of objects.

Object Explorer: The Object Explorer allows dragging and dropping objects into the front panel, increasing project development efficiency and speed.

OPC Enhancements: Lookout is now both an OPC server as well as an OPC client. OPC support is extended to both synchronous and asynchronous modes. The Insert>>Expression dialog box gives the user access to all data items exposed by the OPC server's OPC Browse Address Space interface. OPC is the recommended way to communicate with many of the latest PLCs from all of the major manufacturers.

Multiple Process Files: You can load multiple projects into a single application of Lookout. Modular application development can be done using this feature. A project's objects can also be organized into a hierarchy of folders.

Polymorphism: Data is not strongly typed. You can add logical values and convert to any type that is required. When inserting in expression onto a panel, you can specify whether to display the expressions' value as a number, a string, or a Boolean.

Symbolic Links: Using symbolic link, a node can be created as an "*alias*" or another node. This makes changing names of servers possible in one step on an alternate or standby computer.

Value Quality: The quality of data, whether good or bad, is generated by device drivers and is saved along with the logged values.

Backward Compatibility: Lookout 4.0 is backward compatible with older versions of Lookout. You can open version 3.8 lks files in Lookout 4.0. No recompilation is necessary.

New Objects: The Loader object allows you to load or unload a Lookout process in response to a local trigger. The Monitor object is used for redundant connections, and maintains connection with the server computer.

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Lookout Library of Functions

Lookout 4 now supports libraries of function applications by allowing the user to open and run multiple Lookout process files and Lookout instances. This allows developers to write commonly used applets, such as pump alternators, special function timers or special graphical objects such as circular charts or strip charts with user-selectable time basis or automatic scaling.

Sage Designs has already begun compiling a list of function applications and has started development work on several modules that will be offered to supplement the library for the standard Lookout package. In addition to the ones listed above, there will be a user configurable paging application with a seven day scheduler, that will allow the user to input messages, generate automatic alarm messages and schedule on-call personnel. The seven-day scheduler is available as a stand-alone application that can be used to turn on equipment or schedule other events within Lookout.
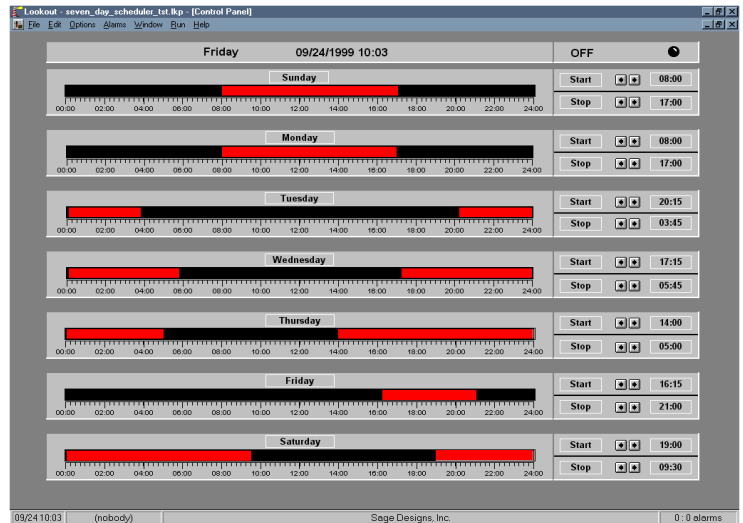
Sage Designs is looking to our Lookout integrators and users to supplement this list with other applications and solicits your suggestions about some of the applications that you would like to see.

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