

## A New and Bright Future for Salt Lake City Library

An award-winning design and cutting edge control systems have raised the benchmark in building new libraries and positioned the Salt Lake City Library in Utah, USA as a front-runner among innovative public facilities.

### The Challenge

Salt Lake City envisioned walkways connecting three, six-storey buildings in its new library complex – one facility for administration, another for the library's collections and a third with reading galleries and meeting rooms.

The city also wanted control systems to manage everything from the environment and access to smoke alarms, window blind adjustment, melting snow on sidewalks, lighting and ventilation. With numerous windows throughout the facility and a requirement for under-floor installation of HVAC and electrical equipment, the project presented numerous challenges.

The building facility serves the new library, as well as a county government building and a retail area housing a radio station, a bookstore and various shops. As a result, the city needed to be able to track energy usage by each entity so that it could bill accordingly. Salt Lake City asked several companies to bid on the project. The proposal from Utah Controls, Inc. (a TAC partner) won out over five other bids.

### The Solution

The first phase of the project addressed control systems for the whole



**The spacious atrium at the timeless Salt Lake City Library**

facility (i.e., boilers, chillers, and BTU monitoring). The second phase dealt with control systems for the new, three building library complex.

All electrical, control and HVAC devices were installed beneath the floors. Although this process required more steps than a drop-ceiling installation, it offered the library greater flexibility to add or move devices in the future. This approach also offered increased energy savings, because it is more cost-effective to deliver cool air through the floor than from the ceiling.

The new library uses more than 1,500 TAC control points for HVAC and access control. A LONWORKS-based open database enables communication among systems from multiple vendors, including variable frequency drives and lighting control panels. The library has 24 duress stations in the garage to enhance security for patrons and employees alike. A burglar alarm system also monitors employee duress stations and emergency exits inside the library. All alarm notifications are sent to a 24-hour dispatch center.

Local and remote access to control systems enables facilities staff to monitor and analyze performance and change system settings simply by logging on from any PC, anywhere. In addition, web functionality and alarm notifications sent to pagers enable rapid response to any situation that arises.

### Customer Benefits

- Centralized and remote monitoring, control and support
- Flexibility to expand control systems
- Customizable, color graphics for system management
- Interoperability with third-party systems

### Facility Profile

Project: Controls for HVAC, building access, lighting systems, smoke and burglar alarms, walkway snow melting, video badging, duress systems, window blinds, chiller and boiler plants, parking garage ventilation

Property: 6-storey 3-building library complex, physical plant, 45 interior/exterior doors, 1 elevator, 50 access card readers, 2,500 card holders  
Equipment: TAC Xenta and I/NET controllers; LONWORKS LNS database, routers and controllers; stand-alone CCTV system; workstations with customizable color graphics

### The Bottom Line

Salt Lake City selected TAC's I/NET system because of its UUKL 864 listing for smoke and fire control. It chose LONWORKS-based technology for its ability to integrate with third-party equipment and provide easy access to systems via the Internet.

Today, the Salt Lake City Library offers all the imaginable amenities and more. For instance, controls automatically monitor solar radiation, light and temperature, and adjust the window blinds to ensure the proper environment. And the library uses a system that circulates hot water through the sidewalks to melt snow accumulations to keep pathways clear.

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## Technical Corner

### New Tool Simplifies Device Certification

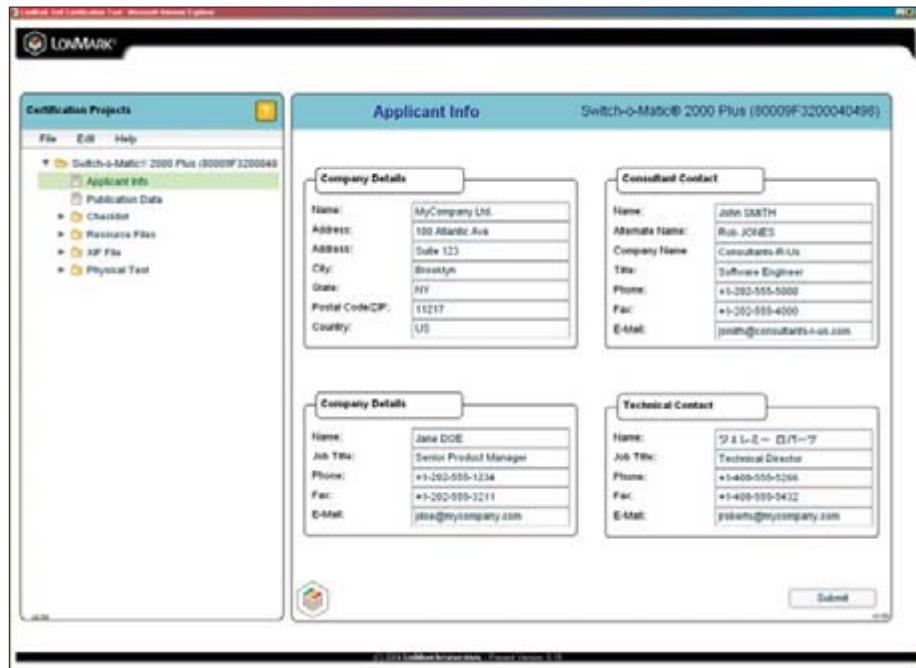
Reducing the cost and time required to certify a device to the LONMARK Interoperability Guidelines are goals of the organization's staff and membership that have been realized in the creation of a member-operated, quali-

fying utility we call the LONMARK Self-Certification Tool (SCT).

Capitalizing on the ubiquity of the web browser, the SCT's interface is dynamically produced from the LONMARK website, and pushed to the client browser window: a server-side application. This concept allows licensed users worldwide access to the tool without us having to support multiple versions of the SCT as tool enhancements are made over time. The user experience is further enhanced by way of its Macromedia Flash Player-based interface. This gives the client side of the tool full certification-database interaction via SOAP web services and XML, and allows us to further tailor the user interface to the needs of our members without affecting the core server-side processes.

License to use the tool is granted to the LONMARK member company, and the employees of that company are each able to create their own accounts to view and shepherd their company's products through the online testing process. Consultants and independent developers are able to test products from several manufacturers from within the same unique, consultant account.

The tool abrogates the need for completing paper forms by allowing the tester to complete the forms online. The SCT also allows the tester to view each SCT-reported Error, Warning, and Notice during each phase of device testing; thus reducing the support burden, allowing us to reduce the



**SCT reduces certification cost and time needed to certify interoperable products.**

cost of certifications to our members.

Supporting our internationally diverse community is accomplished by the growing list of world languages—including the support for two-byte (Unicode) characters/glyphs. Changing from one language to another can be done at any time, and on an individual-user account level.

Testing involves examination of the Device Interface File (XIF file), the Device Resource Files (TYP, FPT, FMT, and one or more language-specific string files), self-attested answers, and physical examination of the device.

Physical examination is accomplished by the download of the Physi-

cal-Test Utility (PTU). This Microsoft Windows OS-based executable communicates through your existing Echelon OpenLDV™ network-interface driver to dialogue with your device-under-test. If present on the device, the Node Object functional block is then tested for proper interaction.

It is our hope that by reducing the cost of certification, and the time it takes to certify a device, we will be able to increase the demand for certified products and enable the manufacturers to meet that demand with greater ease.

**Jeremy Roberts** is the Technical Director of LONMARK International.

## Integrators Perspective: No LONMARK, no Real System Integrator

What do we need today in system integration? First of all, a new professional role: the real system integrator is someone who can work on a common platform in order to realize a complete open system that will optimize automation in general, not only in buildings, homes or industry.

The market is maturing, but there is still confusion about the real role of the system integrator: the individual isn't simply a specialist working on

building automation, nor a producer, but someone who has to choose from all the products on the market the best according to the customers' requirements and, to these products, the person adds an other important value - integration.

This new professional role necessarily has to mature, and competence in this sector needs to develop. The companies of the future will have to make sure that they are qualified and competent in open systems. And so, the wiring installer has to evolve, becoming an intermediary between

the actual installers and the wiring designers: the integrator will have to supervise the cabling as well as organising it. One person for a complete service, that is what the end users are currently asking for.

But that's not all: today the system integrator offers, apart from the start up of the system, a complete maintenance and servicing contract. There is a well known killer application in this sector - software that can integrate various systems and devices, regardless of the manufacturer, through a common communication standard