



HAI provides integration advantage for Subway restaurant chain

by Allan B. Colombo

System integrators are known for providing their clients with features and benefits that go well beyond the mere capability of a security system. By providing an integrated platform with security at the center, a client's best interest usually is better served. In addition, customer's usually feel as though they're getting more for their money. In addition, the integrator benefits because it's easier for him to sell because the client sees the benefit on a weekly or monthly basis.

Eight years ago Chris Barton, owner of Scorpion Automation, Inc. of Gretna, Nebraska decided to bundle value-added services that utilizes security sensors as the ears and eyes of an all-encompassing integrated system. Barton studied what the market had to offer, which led him to handle a fully integrated line of products made by Home Automation Inc. (HAI), based in New Orleans, Louisiana.

"HAI offers a complete line of automation controllers, power line carrier devices, expander panels, temperature sensors, HVAC controllers, thermostats, and more," says Barton.

Making use of an integrated platform

There's a real need in the commercial property management market for a reliable, easy-to-use integration platform that can provide effective security in addition to environmental control. This is especially true of small- to mid-sized commercial properties. Barton says he uses the HAI Omni IIe control system in small- to mid-size commercial structures.

HAI's Omni line of control systems offers optimum control of heating, ventilation and air conditioning (HVAC) systems, for monitoring cooler/freezer temperature, for the management of outdoor signage and general indoor/outdoor lighting, as well as the execution of physical security and fire detection, and at a price point that Barton's clients like.

"HAI's Omni IIe offers my clients more for their money because of the scalability of the system, the ease of use, the convenient array of interface options (Android, iPhone, iPad, PC software, etc.), and at a price that my customers can live with," says Barton.

The Omni IIe takes advantage of every possible signaling technology in existence. Devices can be connected with the controller using metallic cable, radio waves,



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and over power lines using a variety of modulation methods. Radio and power line signaling are both ideal for retrofit applications where metallic cable may not be so easily installed. Metallic cable, on the other hand, can be easily installed in new construction as well as existing construction where the installation of cable is possible.

Subway chain in the Midwest

The owner of a nationally recognized chain of restaurants in the Midwest recognized the benefits of a fully integrated system. Because the Omni IIe can control lighting and HVAC while providing security and life safety functions, he selected Scorpion Automation.

“The owner of this chain of Subway stores was on the lookout for a product that would maximize his investment by saving money while providing a safe environment for his employees and patrons,” says Chris Barton. “I sold the Omni IIe on the merit of the platform’s flexibility, reliability, and ease of use once in place.”

The operating radius of this particular Subway corporation is 60 miles. To effectively manage dissimilar security and facility management subsystems in each store, management would have had to travel back and forth between them, which is the traditional approach used in a non-integration environment. Not only does this cost more due to travel expenses, but it would be an inefficient use of valuable time.

The HAI Omni IIe allows Subway management to control nearly every environmental subsystem and security from afar using special software. In addition, because of HAI’s versatility in design, any number of communication schemes can be employed with the use of computer software, such as hardline telecom, cellular, or broadband. “This is where the Dealer PC Access software comes in,” says Barton. “The owner can make changes to temperature settings, add/remove user codes to any of his Subway systems, update a lighting plan if needed, and more.”

The HAI advantage is that Subway managers can make changes from the comfort of the central office without driving a single mile. This includes the administration of user PINS (personal identification numbers) as new employees are hired and others leave the corporation.

HVAC control

The Omni IIe by HAI offers the latest and greatest in HVAC control using an assortment of command and control options. The most effective, which Barton used in this application, includes a sophisticated, practical multi-function thermostat called the Omnistat. What distinguishes the Omnistat from common, ordinary models is its ability to communicate with the main OmniPro IIe controller over a common four-conductor cable.



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“The HAI Omnistat2 thermostat maximizes energy savings in each lobby and the food preparation area. This allows full control of the energy consumption of the heating/cooling system,” says Barton. “If a customer complains of a temperature issue, the thermostat can be immediately adjusted, automatically reverting back to a preset point after a certain duration.”

HAI also offers other options, such as their Programmable Energy Saver Module (PESM), which allows users to make temporary, last minute changes in room temperature based on real-time data. Temperature can be controlled globally or by zones—according to a facility’s HVAC needs. Programming can be as easy as day and time or as complex as security arming levels—sometimes both.

Barton says there is an advantage to using arming levels to dictate temperature set-points. In the Subway stores, temperature adjustments are performed by the HAI Omni IIe instead of having employees make adjustments on a daily basis. This allows for greater energy savings than is usually possible when relying on the memory of busy employees at each location.

“I like to sell this as occupancy based automation. This is a huge benefit because the system always knows if the building is occupied. If there are long periods of time when no one is in the building, the system can keep the HVAC system at lower levels, thus saving the client money,” says Barton.

Lighting control using HAI integration

Forgetful employees often fail to turn lights off at appointed times. They can forget to turn lights off when leaving at the end of the day or they may forget to turn them on before dark. One solution is to use occupancy-based control.

This entails the control of lights through monitoring security arming levels. This is a great way to control outdoor signage and general lighting in and outside of a commercial facility. In this manner lights can be turned off and on when the system is disarmed, which means that people are present. Electrical devices also can be controlled by day-and-time programming as well as in real time over mobile devices, such as a smart phone.

“Before switching to HAI for outdoor lighting, each store was required to implement a lighting timer to turn signage on and off that would require manual adjustments when the season changes or if the hours of a store for a particular day are different than normal,” Barton says. “The controller now automatically adjusts for these scenarios so that lights come on when the sun sets or they automatically shut off if the security system is armed early. If the store is closed for a day (Christmas) the lights never come on thus saving money.”

Subway Equipment Install

The previous Subway installation focused on security and energy management. The latest update includes the following HAI equipment:

- Omni IIe Controller (1)
- Omni Console (1)
- Omnistat2 RC-1000 PCTs (2)
- 15A Relay UPB Switches (3)
- Indoor/Outdoor Temp Sensors (2)
- Motion Detectors
- Door/Window Sensors
- Panic Button
- HAI Dealer PC Access Software



HAI Gen III UPB includes improvements to the core UPB technology, including improved drive for CFL and LED lamps and better tolerance for power frequency variations and interruptions*.

*Gen III UPB is compatible with all previous generations of UPB.



For example, if the store is closed on specific holidays, the system automatically knows that everything in the store is to be kept turned off for the day. Outdoor lighting as well as Subway signage also are controlled automatically according to time of day, thus assuring that lights are only turned on when required. Time-of-day adjustments are controlled by an atomic clock built into the OmniPro IIe controller. The HAI Omni IIe uses a variety of methods to control electrical devices, Power Line Carrier (PLC), including low-voltage wiring, radio-based transceivers, X10 products, Z-Wave, Zigbee, ALC Hardwire, and others. In this instance, Barton employed HAI Lighting Control (HLC) products specifically using Universal Power Line Bus (UPB) devices that use PLC technology.

Power Line Carrier technology

In years past X10 was the predominate technology used for PLC-controlled devices. The technology was relatively inexpensive to buy and it served its purpose well. But X10 is susceptible to a variety of maladies as it relates to power line interference. This includes the distance that command and control signals can be sent down a power line.

In due time, new, more robust forms of PLC communication have been created that has all but eliminated many of the problems that X10 suffers from. One of these relatively new PLC technologies is UPB (universal powerline bus).

Barton chose to use UPB in the Subway chain application for several reasons. First, UPB is more reliable than X10. This is because UPB signals are more robust. In fact, UPB signals operate across power lines at an amplitude that is up to ten times stronger than X10. This gives the HAI Omni IIe the ability to communicate up to a mile. UPB data rates during transmission also are faster than X10.

“The direct integration that HAI provides with its UPB line of power line control modules is second to none. The reliability of a UPB signal over an X10 signal is the main reason I use UPB,” says Barton. ■

