version at www.Intelligent-Building-Dictionary.com, designed for fast lookup of terms and concepts. The online version includes the ability to suggest additional terms or alternate definitions in order to help keeping the dictionary up to date with changing terminology. In order to maintain the quality and reliability of the definitions, all suggestions are reviewed by an editor before they appear online or in the book version.

The dictionary is a valuable resource for building owners and managers planning to invest in an integrated building management system. It explains important terminology to ensure that they have control over which system and technology is installed in their buildings and to prevent their being locked into a propriety system.

Contact
Chuck Ehrlich
CTO of Building Intelligence Group, LLC
www.BuildingIntelligenceGroup.com

Editor's Note:
This is a commendable effort to help educate the market about the growing terminology list in the industry. In addition, LONMARK has its own glossary at: http://www.lonmark.org/technical_resources/terminology_ac - which is primarily focused on the lexicon of LON related terms.

Technical Corner

The Vertical-Integration Bridge

Plethora of Protocols

There are protocols for buildings. There are protocols for the home. There are protocols for factory automation, industrial process control, air filtration, paint-spray applications, lighting systems, agriculture, railway signage, locomotive braking, textiles, automated food service, gasoline/petrol stations, security, and for milking cows.

So, where does LON fit into the sea of existing protocols for all of these diverse, vertical markets? Squarely in the middle. LON's greatest advantage to the facility, factory, building, and property owner is in bridging the gap between those protocols – and in being the backbone for the business, not just the building. What do I mean by that? An example: with regard to control networking, a business deals with more than just the HVAC&R systems of its buildings. The business must look beyond what it can automate in the traditional controls-networking component of its facilities and look to how the elevators/lifts, lighting controls, smoke/fire systems, and security systems all interplay on the bottom line. More than that, a building owner needs to look beyond the building's walls; into the parking lots, for example: electronically metered parking, dynamic signage systems for parking garages (showing which floors/wings have how many available spaces), lights in the parking lots or garages being given "smarts" for informing maintenance teams and recording and curtailing en-

ergy consumption. Likewise, owners and occupants have an increasing need to be conscious of new energy-reduction directives – from the California Building Standards Code (Title 24) to the European End-use Efficiency and Energy Services Directive to the new US Energy Bill 2007. More than ever, regarding energy consumption, owners and occupants need to respond, reduce, record, and report – what I like to call the "4Rs of Demand Response." With LON, there is a cross-industry way for even the simplest of devices to participate in an "enterprise-wide" collecting and commanding of energy use.

The Rosetta Stone

LON plays the part of the universal translator between specialized systems. Take DALI, for example: this is a protocol specific to lighting. If the protocol is implemented in a facility, should the owner or occupant need to learn how to implement the 4Rs for that protocol – and every other protocol for a specific system they might have? Not if LON becomes the liaison for information. Efforts are underway in the Lighting Task Group of LONMARK to map lighting profiles to their DALI equivalents. Efforts like these allow even mixed-protocol facilities to respond, reduce, record, and report through a single interface to the enterprise system, to the utility interface, and to the facilities-maintenance system. Using LON as the virtual "energy-reduction router" of a facility, a business can have complete control over vertical systems' responses – regardless of whether those systems understand demand-response signals from a utility or from some facilities-control software, or not.

Does this approach undermine the idea of using LON for all facility control-networking needs? Yes and no. The reality is: though many of us feel there is no need for any protocols other than LON to be used in a facility, there are other people who disagree. Additionally, there may be many retrofit applications that warrant keeping the existing systems but enhancing their total-system interfaces

to be accepting of energy curtailment and cost reduction. It isn't always feasible to rip-out the old for the new; for many reasons. But with LON, the old and new can share a common ground; a translator that crosses industries and media with ease and effectiveness. It is precisely LON's ability to cross vertical industries that makes it such an ideal solution for integrating vertical applications. LONMARK Profiles (the functional specifications for very application-specific devices, like thermostats, occupancy sensors, and sunblind controllers) enable the true interoperability/interworking necessary to extend information from one system to another in a seamless, vendor-agnostic installation scenario.

If you're a LONMARK member and interested in being a part of defining these routing interfaces and profiles, join us in the various LONMARK Task Groups. If you're not yet a member, visit the Membership section of our website for more information on how you can participate.

Jeremy J. Roberts
Technical Director
of LONMARK International

The ISO Standard

The LONMARK International Staff is eagerly anticipating the announcement of the EN 14908-series of documents (-1 through -4) as being accepted as Draft International Standards for ballot by ISO and IEC's Joint Technical Committee (JTC1) to become an ISO standard for control networking. Though balloting will be a big step for LON, it does not automatically make LON a global standard; for that, we will need your help: As soon as we have an official ballot number, users of LON from around the world need to inform their ISO country representatives that the new ballot is something they want to see succeed. As mentioned in the *Technical Corner* of July 2007 (Vol. 3, Issue 3), your representatives will not know you want LON to become a standard unless you share with them the importance of the standard to your company within the global market. If you're willing to help, please visit us for the latest details: www.lonmark.org/iso.

Integrator's Perspective

LON is Now Open to Mass Integration

The most brilliant software specialized for LON installation exists in the market today to quickly design a network in the easiest way, providing a purely flexible solution. Today, however, the integrators' time is lost in completing the projects on the job sites. Experience shows that skilled integrators are staying night and day at the job site in order to perform uninteresting and boring work. They come to set up a network and end up checking the wiring, testing the connections, and checking terminations and network topology consistency. But tools are not available to address this problem. Or so many integrators believe. There are solutions which address this problem, and they provide a tool without technical terminology which can be easily handled by a non-technician to perform these functions.

Most time-consuming integration phases are, indeed, network checking and commissioning on the job site. Time spent engineering the database and performing the logical integration can be already dramatically reduced using the appropriate tools. Many software firms specialize in developing solutions specifically for LON systems, especially Newron System.

The goal is to reach the electrical contractor or the installer in charge of the installation. This is what we call: the Pre-commissioning. The concept in its broadest sense is a process to check a system, incorporating the design, physical installation and preparation for operation of networks.

What is happening today? The installer wires the project but has no tool to check his work. He leaves the site knowing he must come back because of problems. So when the system integrator arrives at the job site with his LNS® database, he faces all the problems linked to wiring and bad connections – network communication is poor, some devices are badly wired, terminations are absent, etc. The integrator switches on Lamp 1 and Lamp 3 turns on! He not only loses time and money but also enthusiasm for his work.

Newron System conducted research in this area. We sent surveys to well known integrators as well as just listened to the demands of a large panel of speakers from the LON community, especially HVAC manufacturers and large system providers. Through our research, we realized that they all wanted the integrator not to have to do the project pre-commissioning. Instead, we learned that the companies want to outsource this to the electrical contractor and installer, who arrive at the job site with a PC and the network database to complete the system's functional design and to ensure that everything is tested and correct.

The aim of the tool developed to solve this problem is to evaluate the network before the commissioning