

Technical Corner

Alternative Energy, Continuous with LONWORKS

In keeping with the energising theme of this edition of the magazine, I want to bring to your attention the nascent functional-profile efforts in the direction of renewable-energy resources: More often we are seeing electric utilities and gas utilities becoming solar-wind-energy providers and biogas providers – at least in the experimental, pilot, or early rolled phases of such efforts to find political, economical, and/or environmental solutions to nuclear, coal, and oil dependence. As utilities become more focused on these efforts through their own accord or through municipality, national, and consumer pressure, there is a need for products for handling the data that are produced, which differs from what's needed for conventional generation. Enter LONWORKS® onto the scene.

The first meeting of a group to look into solutions was held by LONWORKS users in Germany (outside of the organisation of LONMARK) in Schwäbisch Hall in August. For more information, see “LONWORKS and Renewable Energy” elsewhere in this magazine edition. Due to the positive results of this meeting, the Utility Task Group within LONMARK International will be rising to the challenge of meeting the demand for suitable functional profiles for the renewable-energy playground. The first strawman of this effort is a draft profile for Photovoltaic Inverters.

Those interested in this industry should involve themselves in the Utility Task Group, where international efforts to liaison and pool ideas will take place.

Vulnerabilities Detected: Your Network

August also saw the addressing of a topic so seldom considered by most systems integrators and installers in the BAS market: control systems cyber security – the ability of control systems to be compromised through remote access. The United States' Department of Homeland Security (DHS) National Cyber Security Division (NCSA), through their Control Systems Security Program (CSSP), arranged the second workshop of its kind to guide a cohesive effort between government and industry to improve the security posture of control systems within the nation's critical infrastructure: the 2006 International Control Systems Security and Standards Coordination Workshop, held in August in Portland, Oregon, US.

The goal of the workshop was to share information between a variety of international consensus standards and industry groups about how to secure critical-infrastructure control systems (gas, electric, water, etc.) against cyber events – be they intentional or otherwise.

I had the honor of being selected to help facilitate and structure this international workshop, and Dr. Samuel M. Smith, a LONMARK Associate member, Adept Systems Inc., was chosen to present and lead a breakout session on “International Coordination and Collaboration” defining the international utilities' needs for coordinated standards: for sharing information related to security threats, defining best practices, and coordinating the efforts of various groups tackling the security issues. Other breakout sessions included “Control System Cyber Security Challenges,” “Standards Coordination,” and “Metrics Development.”

The greatest thing I bring back from the workshop to share here is the lack of visibility the controls people have into the efforts of groups like ISA, IEEE, NIST and others toward developing standards and best practices for control networks, and the lack of reciprocal knowledge of the power of LONWORKS technology – with its embedded authentication algorithm and its ability to be

implemented in a no-single-point-of-failure network design. The lesson for the LONWORKS integration world is: design with security in mind – even for an HVAC system of seemingly little exposure or criticality. It can be important to offer such features to the end-user as an inherent benefit of LONWORKS technology: to turn-on authentication if the network has an Internet or intranet interface, to prevent control from intrusion; and to prevent remotely downloading new applications to devices, by use of network-management authentication. As integrators, in addition to finding-out more about the cyber-security standards being developed around the world, I urge you to take an industry-leading step in securing the networks you install. As the world becomes more connected, there's no telling what may be connected to your control network in the future.

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Integrator's Perspective

Room Automation Meets the Challenge of New Energy Regulations

With rising energy costs and new regulations on saving energy, there is growing pressure on building owners and users to reduce energy consumption. Effective strategies for optimizing energy consumption whilst maintaining high levels of comfort for occupants are well suited to intelligent building automation, in particular room automation.

Today, a building's market value is determined not only by its location, condition, fittings and functionality but also by the running costs that the owner or user needs to pay. Of these costs, energy consumption is becoming an increasingly decisive factor.

One reason is the rising price of energy. Oil, gas, district heating and elec-