BACnet: Growing In Scope

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BACnet[TM] is expanding in scope and maturing as an industry standard with practical applications. Areas of recent development include the BACnet conformance testing standard, life safety and security capabilities, and a new standard specifying the use of BACnet with networking protocols-BACnet/IP. Additionally, a BACnet users group has formed.

As most fms are aware, BACnet is a data communication protocol for building automation and control networks. It was developed under the auspices of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standing Standard Project Committee (SSPC) 135. It's currently an American national standard, a European pre-standard, and a potential global standard.

Conformance Testing

Perhaps the most important BACnet development is a companion standard entitled "Testing Conformance to BACnet." The proposed new standard-Standard 135.1-describes in detail how to test devices to ensure their claimed BACnet functionality has been correctly implemented. SSPC 135 voted this past June to recommend public review.

In the past, the lack of formal product compliance testing procedures and/or product certification program was a hindrance in the advancement of BACnet-related products as a commercial force. It's expected the proposed standard will be used by both BACnet manufacturers seeking to verify their own implementations and by third party testers as part of a BACnet certification program.

"The completion of the public review draft of the testing standard represents a huge step toward creating a viable certification program for BACnet," says Steven T. Bushby, vice-chairman of the SSPC. "[This is] something that has been desired by both suppliers and users of BACnet equipment since the beginning, especially in Europe."

Life Safety & Security

Also this past June, SSPC 135 voted to recommend public review of two new BACnet objects and one new service that will facilitate the use of BACnet with fire, life safety, and security systems. One of the new objects models the functionality of life safety devices such as fire alarm panels, pull stations, and smoke detectors. The second object allows for consolidating groups of these devices into "zones."

The new service will allow users to interact with both devices and zones to the extent desired or allowed by regulations and codes. "The effect of these enhancements should be to improve [further] the acceptance of BACnet as the protocol of choice for integrating fire, life safety, and security systems with HVAC and other building systems such as lighting," says SSPC member Pat Sheriden, manager, software development of Gardner, MA-based Simplex.

In a further show of acceptance, the National Electrical Manufacturers Association (NEMA) has formally endorsed BACnet as the protocol for connecting life safety and security systems to other building systems.

Beyond the life safety and security developments, the SSPC also approved a new procedure for backing up and restoring BACnet devices in an interoperable way. In other words, users will be able to maintain a set of back up files for all their devices, independent of manufacturer. "The new procedures will become part of BACnet Addendum 135c," says H. Michael Newman, SSPC chairman. "We expect it to enter public review later this year together with some long awaited enhancements...."

BACnet/IP

Today the functionality of many systems is gauged by their capabilities over the Internet. The introduction of

BACnet/IP as an official ASHRAE standard this past year should pave the way for such convenience in BACnet devices.

BACnet/IP specifies the use of BACnet messaging with networking protocols generally known as Internet Protocols (IP). A BACnet/IP network is a group of one or more IP subnetworks (IP domains) that are assigned a single BACnet network number. BACnet has always had IP capabilities, but this protocol allows more flexibility because now building controllers can plug directly into the Internet.

Users Group

Formed last October, the BACnet Interest Group-North America (BIG-NA) is a "user organized revolution to change a vendor-driven market to a user-driven market in building automation systems," says Tom Ertsgaard, mechanical engineer at Penn State University and a BIG-NA founder.

The group was born out of a previous Staefa Users Group-and developed as a resulting need to share information and experiences about BACnet systems. Additionally, BIG-NA is a similar organization to the European BACnet Interest Group (BIG).

A Web site is under development at www.big-na.org, however Ertsgaard admits that growth of the organization and its Web site has been slow because leadership is voluntary. "Nevertheless, there seems to be a great interest and need for this forum [of] information exchange," he comments.

Currently, the group has 87 registered members. This includes: 36 vendors/manufacturers/product developers; 24 consultants/specifiers/construction managers; 15 facilities personnel/owners/end users; and 12 contractors/installers/service personnel.

Ertsgaard comments, "It was expected that end users would be the principal participants in BIG-NA. As this shows, vendors and consultants seem to have the most interest in the implementation of BACnet at this time. This is good, but for end users to really be getting what they want, they need to become informed and be involved."

The only "costs" to join BIG-NA, are time, effort, and interest. BIG-NA's Web site includes a newsgroup, a chat room, and other areas for information exchange. Questions about interoperability and other BACnet concerns can be posted for site visitors.

BIG-NA's main focus currently is Web site development and organization structure. As of press time, the group was also busy putting together plans for a fall meeting at Purdue University.

As for BIG-NA's future role, Ertsgaard says that includes "helping disseminate information about actual BACnet installations including 'the good, the bad, and the ugly.'"

Stay Informed

To stay on top of BACnet, fms should check the Internet on a regular basis. Both BIG-NA's and BACnet's Web sites (www.bacnet.org) are regularly updated with pertinent, current information. Bushby notes that while major BACnet developments often occur every six months-to coincide with ASHRAE meetings-new information may be posted on the site at any time.

As BACnet gains more attention and respect, it brings fms that much closer to true interoperability.