Maintenance Solutions Online

Special Report: Interoperability

Going Beyond the Standard

Manufacturers group takes the next steps to bring BACnet to the marketplace

— A special report in conjunction with the BACnet Manufacturers Association

Since the release of BACnet more than five years ago, most managers in commercial and institutional facilities have become familiar with the standard and its implications for managing facilities and streamlining the performance and integration of multiple HVAC systems.

What some might not know, however, is that a new organization — the BACnet Manufacturers Association (BMA) — has been formed to support the protocol beyond the charter of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).

Setting the standard

BACnet is a non-proprietary data communications protocol standard for building automation and control networks. Officially known as ANSI/ASHRAE Standard 135-1995, the protocol's purpose is to standardize communication between building automation devices from different manufacturers, allowing data to be shared and equipment to interoperate. A consortium of building managers, system users and manufacturers developed the standard to give facilities more choices, uniformity and flexibility.

Although the BACnet standard was published in 1995, additions, changes, extensions and refinements are continuously in process. Two addenda have been approved.

One in January 1999 added BACnet on TCP/IP, and one in February 2000, among other things, added a trend log object, an averaging object, and a multi-state value object, and made changes to alarming. Coming in a future addendum will be new objects for fire and security applications and improvements to existing services.

Following that, the section of the BACnet protocol dealing with conformance and specification will be rewritten. Conformance classes and functional groups will be discarded and replaced by BACnet interoperability building blocks (BIBBs) and profiles. The goal of this change is to improve interoperability among implementations.

BACnet is an American national standard, a European pre-standard, a South Korean standard and an ISO Committee draft standard. The protocol is supported and

maintained by the ASHRAE Standing Standard Project Committee 135 (SSPC 135).

This close tie between BACnet and ASHRAE is extremely important, due to the nature of the standards process. No changes can be made to the standard protocol without formal review and consensus from the SSPC 135 committee.

ASHRAE is a guidelines organization, not a commercial marketing, testing or enforcement body, so another complementary organization must fulfill these needs, and BMA is that organization.

BMA members are companies that design, market and install building automation products. All member companies either offer or plan to offer products that support the BACnet protocol, and they are committed to ensuring that their BACnet products interoperate.

Alerton Technologies, Automated Logic, Cimetrics, Delta Controls, Lithonia Lighting, Siemens and Simplex are founding members of BMA, and many other manufacturers have joined the group since its inception.

Testing, testing

Interoperability testing is important for control networks because it allows end-users and network integrators to buy BACnet devices from different manufacturers and have them work together as a system. Interoperability goes a step beyond having products developed to use the same technology or protocol. Interoperability means they actually work together to provide owners with solutions, and the key to interoperability is testing. The benefit to end-users is reduced project risk and easier implementation.

BMA is forming the BACnet Testing Laboratories (BTL) to perform BACnet compliance testing of building automation products. Testing tools will be developed and made available to BMA members, and there will be a product-listing program, which will list products displayed on the BMA Web site.

Products that have been successfully tested by the BTL may display its logo, which will be copyrighted and its use strictly regulated.

End-users and specifiers can be assured that products with the logo comply with the BACnet standard. A company can have a product tested by submitting an application form that specifies the BACnet functionality present in the device. After the form is submitted, a BTL staff member will contact the manufacturer to arrange for shipment of a product sample to the BTL.

Physically testing devices is the only way to know if they truly work in an interoperable manner. Testing software will be made available to manufacturers to pre-test their products and prepare for actual certification testing.

BMA is different from the BACnet Interoperability Testing Consortium, which was formed by NIST under a cooperative research and development agreement. The consortium has been supporting BACnet through interoperability testing and technology demonstrations for several years. The consortium's charter places significant limits on its commercial activities, however. BMA is a private corporation whose broad charter permit it to support BACnet through a range of activities.

The next steps

Since BMA's creation in January 2000, much activity has taken place. In that month, Cimetrics Inc. received a contract to staff the BTL, develop testing procedures and tools, and test products for BACnet compliance. BMA will monitor BTL activities to ensure accuracy and fairness.

A BTL working group composed of vendor representatives and other interested parties has been working on defining test procedures for interoperability and compliance of BACnet devices and systems. Test procedures performed by BTL will be based on compliance guidelines developed by the BACnet committee, ASHRAE SSPC135. A meeting planned for October will bring together products and begin the first interoperability testing between vendors. BMA plans to begin accepting applications for testing and listing by January 2001.

Going global

The need for and interest in BACnet interoperability is global. A similar organization has been formed in Europe, BACnet Interest Group-Europe. This manufacturers' organization has the same goal as BMA —interoperable BACnet products — and the organizations will work together so tests developed can be used worldwide to assure BACnet interoperability.

Besides the testing laboratory activities, a marketing association committee has been formed to focus on educating the industry about BACnet and BMA, as well as the benefits of having BTL-certified products. The marketing association committee was formed in June 2000.

The association committee also is working on plans for the October 2000 BACnet Interest Group-North America (BIG-NA)/BMA meeting in Pennsylvania, as well as the January 2001 AHR Expo in Atlanta.

Also, "BACnet for the 21st Century," a conference presented by BIG-NA and BMA, is scheduled for Oct. 9-10 at Penn State University in State College, Pa. This first day of the conference will be an intensive conference, exposition and seminar on building system interoperability, background, theory, specification and application of the BACnet standard. The second day will focus on BMA and BTL.

BMA also will have a booth dedicated to promoting interoperability testing of BACnet devices and systems at the 2001 AHR Expo on Jan. 29-31, 2000, in Atlanta. A demonstration of interoperable BACnet products is planned.

BMA is continuously looking for additional members to work on its initiatives. Anyone in any of the following groups should consider joining BMA:

- manufacturers of building automation equipment, including HVAC products and controls; fire and life safety systems; security and access control systems; lighting control systems; and elevator and vertical transport equipment
- systems integrators and installers of building automation equipment
- consulting engineers and end-users with a significant interest in BACnet
- independent software vendors developing BACnet products.

This information was provided by the BACnet Manufacturers Association (BMA).

Sidebar

The Goals of BMA

The BACnet Manufacturers Association (BMA) was created to encourage the successful use of the BACnet protocol standard in building automation and control systems through interoperability testing, educational programs and promotional activities. BMA's stated objectives are to:

- develop testing procedures for BACnet devices based on the ASHRAE 135.1 Testing Conformance to BACnet
- establish a test lab to support compliance testing and interoperability testing activities of BACnet devices
- promote interoperability and compliance with the BACnet standard by developing conformance testing software and organizing multi-vendor interoperability testing activities
- provide information about BACnet technology and products through educational events and a Web site that displays certified BACnet products
- market and promote the use of BACnet to consulting engineers, end-users of building automation equipment and the building automation community at large
- work with existing organizations to promote and improve BACnet.

The number-one objective of BMA is to develop a BACnet conformance certification and a listing program that will award an interoperability mark to BMA compliant products.
— *BMA*