BACnet® Goes Global

By Bill Swan, Member ASHRAE

T

wo years ago in BACnet Today, my article “BACnet in Europe”
featured BACnet activities in Europe, particularly those conducted
by the BACnet Interest Group-Europe (BIG-EU, www.big-eu.org/eng/).
The 12-year-old BIG-EU is the oldest of all BACnet Interest Groups. As
with BACnet International (BI), www.bacnetinternational.org, BIG-EU is
actively involved in promoting BACnet, conducting user education, sup-
porting conformance and interoperability testing of BACnet devices, and
advancing technical aspects of the BACnet standard.

BIG-EU has continued to grow, with
a total of 88 member companies as of
September 2010. Through its office, BIG-
EU’s BACnet presence has gone beyond
Europe to the Middle East and China. In
fact, the world of BACnet has become so
interconnected internationally it is dif-
ficult to focus on a specific region.

Marketing BACnet

BIG-EU’s Working Group—Marketing
(WG-M) continues to actively promote
BACnet in Europe. The amount of activ-
ity is so high that BIG-EU decided it
needed to produce a periodic newsletter
just to keep its own membership up to
date on its activities and various related
events. Starting in mid-2008, eight such
newsletters have been distributed and their
coverage has grown to include news items
further abroad, including an event put on
by BIG-RU in Russia and the formation
of BIG-CN in China last year.

For its outward reach, MarDirect GbR,
the BIG-EU office, is now producing a
series of BACnet Journals (www.bac-
netjournal.org). These journals cover
a range of BACnet-related information,
including technical articles, news items,
events coverage, exhibitions worldwide,
product launches, BACnet projects, up-
coming meetings and events, and more.
Starting years ago with the BACnet Eu-
rope Journal (in German and English),
its 12th edition having been recently
published, the office now publishes a
range of BACnet Journals in the local
languages except as noted, these are: The
BACnet Italy Journal, the BACnet France
Journal, the BACnet Middle East Journal
(in English), the BACnet China Journal,
and it recently launched the BACnet
International Journal (for North America
and the world, in English) to the list. The
list is not likely to end here because oth-
ers are under discussion.

BACnet is also a regular presence at
conferences and fairs throughout Eu-
rope, with focuses on various aspects of
buildings. These have included a “Smart
Building” conference in the Netherlands
(in Dutch), the biennial light-building
and ISH trade shows in Frankfurt and the
interclima+elec fair in Paris (presented by
the BACnet France Association), and will
wrap up this year with BIG-EU speakers
at the GebäudeEffizienz 2010 (Building
Efficiency 2010) conference in Frankfurt,
Germany, this November.

In addition to being a presence at other
conferences and fairs, BIG-EU produces
its own events, which have included the
BACnet Forum Wien (Vienna, conducted
in German and English), BACnet Forum
Helsinki (in Finnish), BACnet Forum
Milano (in Italian), with a second BACnet
Forum Germany to be held later in the
year and the first BACnet Forum London
in planning. These forums combine BAC-
net exhibitions with speakers on various

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topics related to building automation systems, often with multiple tracks.

These forums are also seen as a way to help start new national BACnet Interest Groups where there is interest. Two examples of this are BIG-Italy and BIG-China. Typically, financial assistance is provided for the first forum; by the second or third forum, the BACnet Interest Group is self-sustaining.

The message presented by BIG-EU has changed over time. When BIG-EU was formed, the issues addressed were the advantages of interoperability provided by BACnet under the theme “BACnet: World of Integration.” Over the years, these advantages have come to be understood and appreciated. As the issue of sustainable buildings came to the forefront, BIG-EU began demonstrating how integration of various building systems through BACnet could help provide the energy-efficiency aspect of sustainable buildings.

With energy prices rising as the result of carbon dioxide reduction policies, energy efficiency has become an issue in its own right, and BACnet International and BIG-EU’s marketing groups have combined their message under the common theme “BACnet: the Standard for Efficient Buildings.” This was the theme for conferences in the interclima+elec fair in Paris and Mostra Convenzione Efficent Buildings. This was the theme for conferences in the net: the Standard for Efficiency has become an issue in its own right, and BACnet International and BIG-EU’s marketing groups have combined their message under the common theme “BACnet: the Standard for Efficient Buildings.”

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BIG-EU provides a manual for properly using the B-PAT file called the “B-PAT Description.” This manual provides necessary definitions, BACnet addressing rules, special requirements for BACnet/IP networks, the use of the B-PAT in a project from planning through implementation and subsequent revisions, and is followed by detailed information on use of the various worksheets in the B-PAT file.

In addition, several years ago BIG-EU published an aid to consultants specifying BACnet’s alarm systems, in the form of a white paper on BACnet’s two systems of detecting and issuing alarms. The white paper, “Compare Intrinsic and Algorithmic Reporting: The Project Engineer’s View,” was generated in response to a number of bid invitations that seemed to show a lack of clear understanding of BACnet alarming.

Internal European efforts, such as the B-PAT, have the potential to produce results useful across the wider world of BACnet. One is the creation of W/G-Germany, a working group for planners, specifiers, system integrators and consultants that addresses the particular regulatory environment in Germany. One such organization, AMEV, the “Arbeitskreis Maschinen- und Elektrotechnik staatlicher und kommunaler Verwaltungen” (Mechanical and Electrical Engineering Working Group of German National, Regional and Local Governments), has published (in German only) “BACnet in Public Buildings—BACnet 2007,” a recommended practice guide for use by governmental authorities throughout the country, currently under revision for publication this year.

Testing BACnet

One additional aid published by BIG-EU is for manufacturers of BACnet devices. “Conformance Testing and Certification—a BACnet Handbook” lays out the process for preparing and submitting devices for BACnet conformance testing, obtaining the BTL Mark for devices that pass (and rules for the use of the Mark) and achieving certification. As it notes in the introduction:

“BACnet Interest Group Europe defines a certification/listing scheme for products conforming to the BACnet protocol standard. This handbook describes this scheme, the certification/listing process and the process to qualify test labs.”

Originally published in 2006, this guide is being updated to reflect procedural changes resulting from the convergence of the BIG-EU and BI testing labs towards identical testing with unified listing and certification, and will be necessary as additional BACnet testing labs open around the world. In addition, BIG-EU has conducted pre-testing workshops to acquaint manufacturers with the tools and processes used in BACnet testing to prepare them for the actual submissions to the test lab.

The desire to converge the testing conducted by these two BACnet labs has been around for as long as there have been two such labs, but the different market forces between Europe (Germany, in particular) and North America sent the two organizations’ test-development working groups in different directions. The North American group advanced in new test drafting and deployment while BIG-EU honed in on automated test execution with automatic certification-level documentation, but both were effectively working from the same scripts.

With the increasing maturity of the tests and testing tools, the convergence was able to get under way two to three years ago with expressed wishes for plans and signed agreements. The process is ongoing, but many hurdles have already been cleared, including having a single website to list products approved by either test lab (www.bacnetinternational.net/btl/) instead of a separate site for each lab and merging the two test-development working groups into a single group.

BIG-EU and BI continue to sponsor “plugfests,” which are cooperative events where manufacturers bring their BACnet devices to test with other BACnet devices. Although the test lab working groups have long defined interoperability requirements over and above the BACnet standard, the flexibility of the standard means that implementers’ assumptions need to be checked. In general, issues are most likely to be in an area once considered out of scope by the original BACnet committee: configuring devices using standard BACnet services. BIG-EU’s next plugfest is scheduled to be held in early May 2011, possibly in Vienna to attract even more North American participation.

In the first BIG-EU plugfests there were observable differences between European and North American implementation philosophies, but six years later, with more companies from around the world attending both plugfests, those differences have largely vanished.

Summary

As the BACnet standard matured, it spread from its first applications in HVAC control to integrate other formerly independent areas of building automation including fire/life safety, physical access control and more. Similarly, the world of BACnet has grown from a few relatively independent regional efforts to an increasingly integrated global community.