BACnet from a global viewpoint

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BACnet - An Overview

BACnet Facts

The brand BACnet is owned by ASHRAE.

Any technical work regarding the BACnet standard or the BACnet test standard will only be done in ASHRAE SSPC135 (aka as the BACnet Committee).

A number of marketing organizations are active globally and collaborating under liaison agreements.
How it all started ...

The BACnet kick-off happened June 1987 with the first meeting of ASHRAE SPC 135P at the ASHRAE-Conference in Nashville, Tennessee.

The "P" in "135P" means „proposed".

Nevertheless, it took another 8 years and 6 months before the first BACnet standard could be released. Reason: Any ASHRAE Standard is consensus based.
In 1995 the first release of ANSI / ASHRAE Standard 135 happened and the BACnet standard was born.

Just one year later the ASHRAE Standing Standard Project Committee 135 (SSPC 135) was founded to interpret, maintain and enhance BACnet.

In 2003 BACnet reached the ISO status as ISO 16484-5. Responsible committee: ISO TC 205/WG3
Since 1995, the standard has been improved and expanded from year to year, this work is done by volunteers and is open to everyone.

From time to time the new addenda will be worked into the existing standard and a new version will be published.

Each addendum belongs to a so-called "Protocol Revision". Currently the BACnet standard supports revision 20.
Due to the process of standardization, it takes 6-12 months to convert an ASHRAE 135 to ISO 16484-5.

Responsible:
ISO TC205 WG3
ANSI/ASHRAE Standard 135-2016

The current standard has 1368 pages and is available in PDF format in the ASHRAE book store.

Any new addenda is identified by a combination of two characters. In 1995 we started with „aa“ …

… currently we work on „bw“. 
Current and Future Work
Additional Domains

Primary controls for HVAC and heat/cool distribution to floors and/or rooms, Individual room controls, Fire Safety, Access Control, Lighting Control and indoor transportation like Elevators and Escalators is covered.

What‘s next …?

The focus has already moved to the room (office, hotel, hospital, …) and missing pieces will be added.
SmartBuildings & SmartCities

With more than 1000 vendor ID’s the global support of manufacturers makes BACnet today to the leading communication standard for non residential buildings.

For the cities of the future it is essential that smart buildings talk to the smart grid and other smart buildings as well as to smart cars, smart trains and so on.

As one example you might look at IEC TC57/WG21 where the data exchange between smart grids and smart buildings is currently under standardization.
25 years ago the data networks in buildings has been very different from todays IT based building networks.

The average live time of a BACnet automation station today is 20-30 years.

Therefore BACnet needs to be able to support the current and upcoming network infrastructures. We always do this in a backward compatible manner to take with us the huge installed base and secure the customers' investment.
Cyber Security

BACnet supports different media, therefore the cyber security is not focused on IP networks only.

For any of the supported media „BACnet Security“ could be used because it encodes the payload.

For the popular case of IP only networks, BACnet SC (Secure Connection) with TLS support will be available soon.
BIoT (Building Internet of Things) becomes also a topic in the BACnet community.

Due to the fact that BIoT devices are sometimes battery driven and might „sleep“ to save energy BACnet needs to be extended for the support of „sleeping devices“.

IPv6 is already supported by BACnet.
Semantics

The most forced future topic in BACnet currently is the usage semantic tagging.

To add „Tags“ to any BACnet object makes it more and more independent from the communication protocol or even vendor specific features.

BACnet revision 19 already supports semantic tagging for objects and properties.
BACnet (Global) Relations
SSPC135 Working Groups
SSPC 135 in ASHRAE and ANSI

ASHRAE is accredited as American National Standards Developer (ASD)

ANSI National Policy Committee (NPC)
ANSI Executive Standards Council (ExSC)
ANSI Board of Standards Review (BSR)

Approved as ANSI/ASHRAE Standards and American National Standards (ANS)

Elaborated under ANSI Rules (Consensus, Balance, Reviews, ...)

ASHRAE Board of Directors (BoD)
Technology Council
ASHRAE Standards Committee (StdC)
Standard Project Liaisons Sub-Committee (SPLS)

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BACnet INTEREST GROUP EUROPE
SSPC 135 and BTL
SSPC 135 and ISO/CEN

ASHRAE Board of Directors (BoD)
- Technology Council
- ASHRAE Standards Committee (StdC)
- BACnet
  - ASHRAE Standing Standard Project Committee 135 (SSPC 135)

ISO/TC 205
- Maintenance Agency
- Change Proposals
- Secretariat
- Updates, Addenda

ISO Standards:
- EN ISO Standards
  - 16484-5, 16484-6

CEN/TC 247
- Experts
- “Vienna Agreement”
SSPC 135, Project Haystack, Brick Schema

- BACnet – An Overview
- SSPC 135
- Project Haystack
- Brick Schema

- ANSI/ASHRAE Standard 223P
  - Haystack Meta-Model
  - Haystack Dictionary (defined version)
  - ASHRAE Extensions (if needed)

- Model Proposals, Tag Proposals

- BoD, ...

- Developers

- Published Ontology
  - Project Haystack
  - TXT
  - CSV
  - TTL

- Published Schema

- AP-WG

- TI-WG
- LSS-WG
- DM-WG
- PS-WG
- LA-WG
- EL-WG
- NS-WG
ASHRAE and BACnet Marketing

There are several BACnet Interest Groups active globally (more or less). A global BACnet responsibility for marketing is not existing today.
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