



BACnet from a global viewpoint



Klaus Waechter, Siemens



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.



1987 - 1995

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.

Mike Newman



David Fisher



Steve Bushby



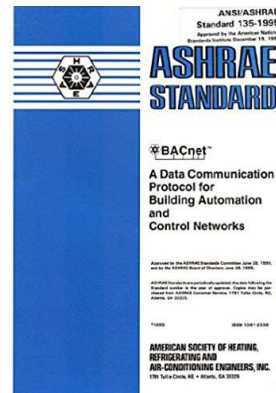


ASHRAE 135 / ISO 16484-5

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



1995 - 2003

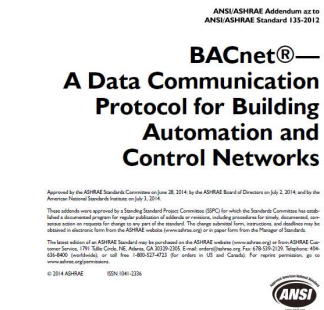
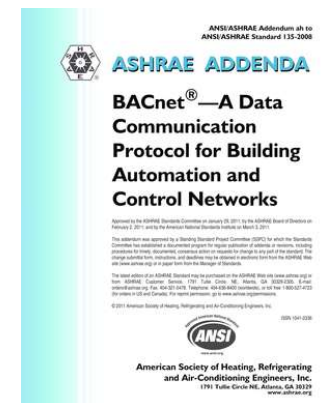


BACnet Protocol Revision 1 - 20

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.





ASHRAE 135 – DIN EN ISO 16484-5



ANSI/ASHRAE Standard 135-2016
(Supersedes ANSI/ASHRAE Standard 135-2012)



A Data Communication Protocol for Building Automation and Control Networks

See the History of Revisions at the end of this standard for approval dates by the ASHRAE Standards Committee, the ASHRAE Board of Directors, and the American National Standards Institute.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the Standard. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org) or in paper form from the Senior Manager of Standards. The latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8900 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

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Due to the process of standardization, it takes 6-12 months to convert an ASHRAE 135 to ISO 16484-5.



Responsible:
ISO TC205 WG3

2017-07-17; Waechter, Klaus; SIEMENS BT, BT CPS R&D PRD

DEUTSCHE NORM

September 2014

DIN EN ISO 16484-5		DIN
ICS 35.240.99; 91.140.01		Ersatz für DIN EN ISO 16484-5:2012-11
<p>Systeme der Gebäudeautomation – Teil 5: Datenkommunikationsprotokoll (ISO 16484-5:2014); Englische Fassung EN ISO 16484-5:2014, nur auf CD-ROM</p> <p>Building automation and control systems (BACS) – Part 5: Data communication protocol (ISO 16484-5:2014); English version EN ISO 16484-5:2014, only on CD-ROM</p> <p>Systèmes d'automatisation et de gestion technique du bâtiment – Partie 5: Protocole de communication de données (ISO 16484-5:2014); Version anglaise EN ISO 16484-5:2014, seulement en CD-ROM</p>		
		Gesamtumfang 1092 Seiten
<p>DIN-Normenausschuss Heiz- und Raumlufttechnik (NHRS) DIN/VDE-CKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik</p>		

Standard 06/12

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ANSI/ASHRAE Standard 135-2016



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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

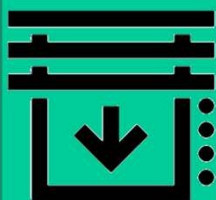


Additional Domains

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.

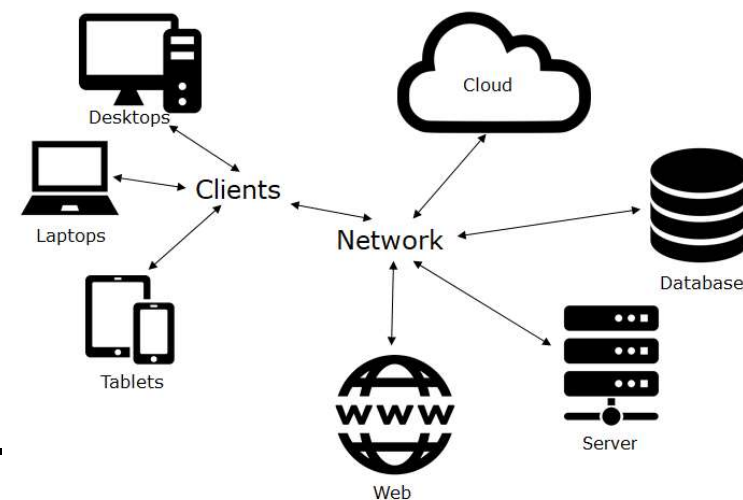


IT Compliance

25 years ago the data networks in buildings has been very different from today's 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.



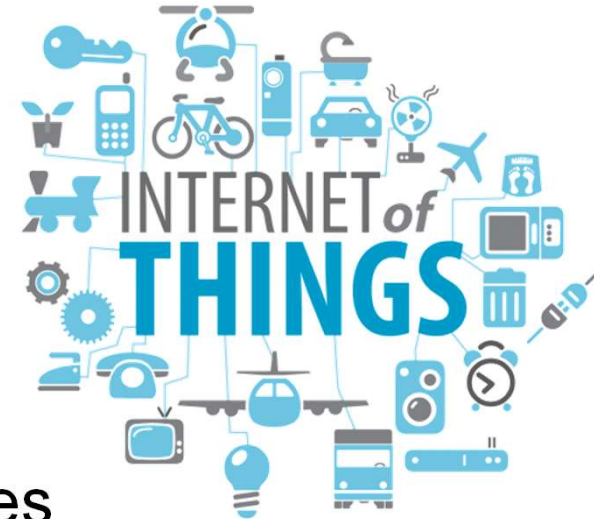


BloT

BloT (Building Internet of Things) becomes also a topic in the BACnet community.

Due to the fact that BloT 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.



15B
CONNECTED
DEVICES IN 2015



40B
CONNECTED
DEVICES BY 2020



 = 1B DEVICES



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.

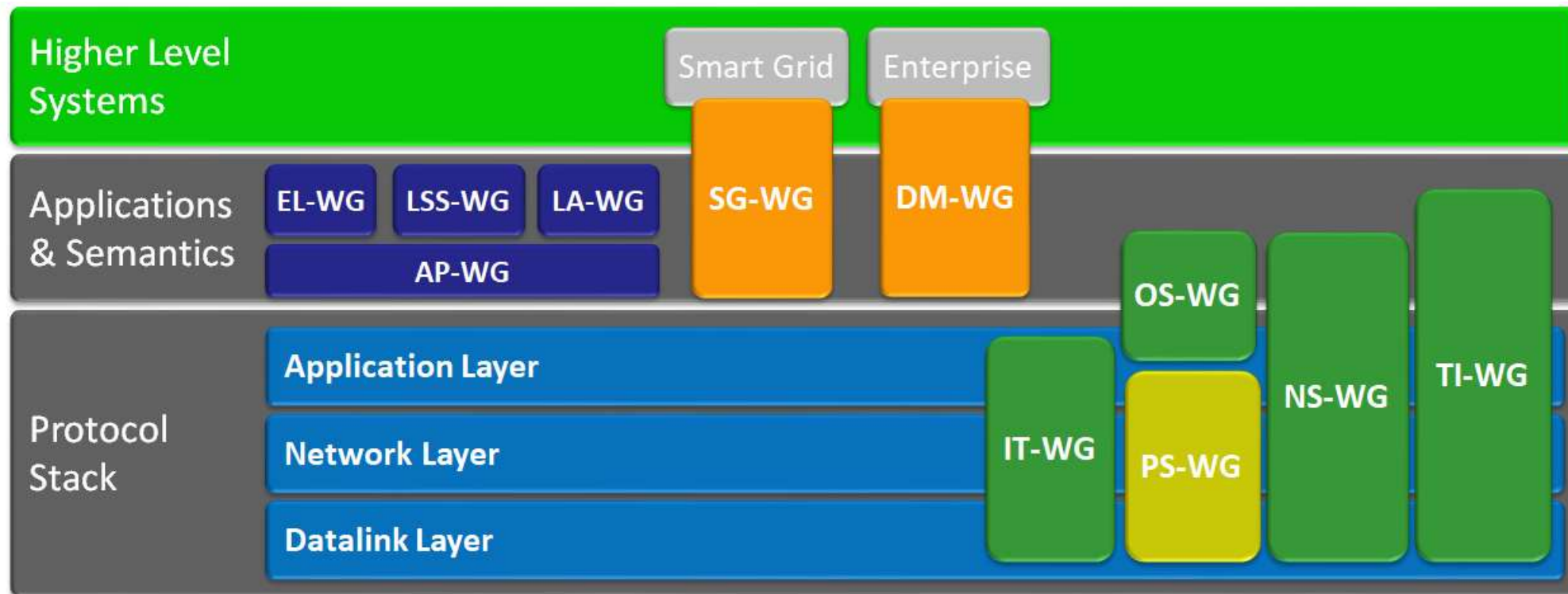




BACnet (Global) Relations

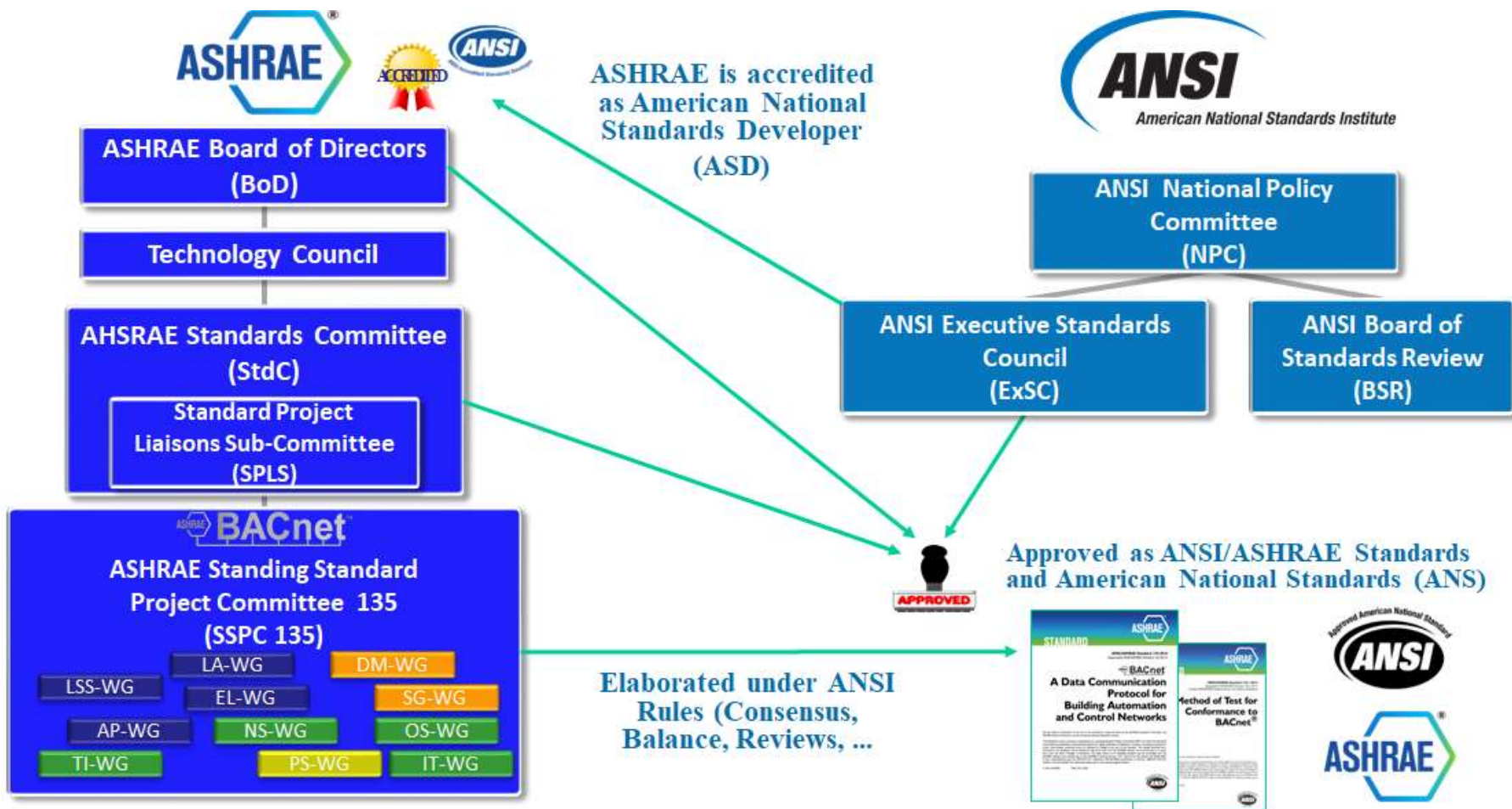


SSPC135 Working Groups



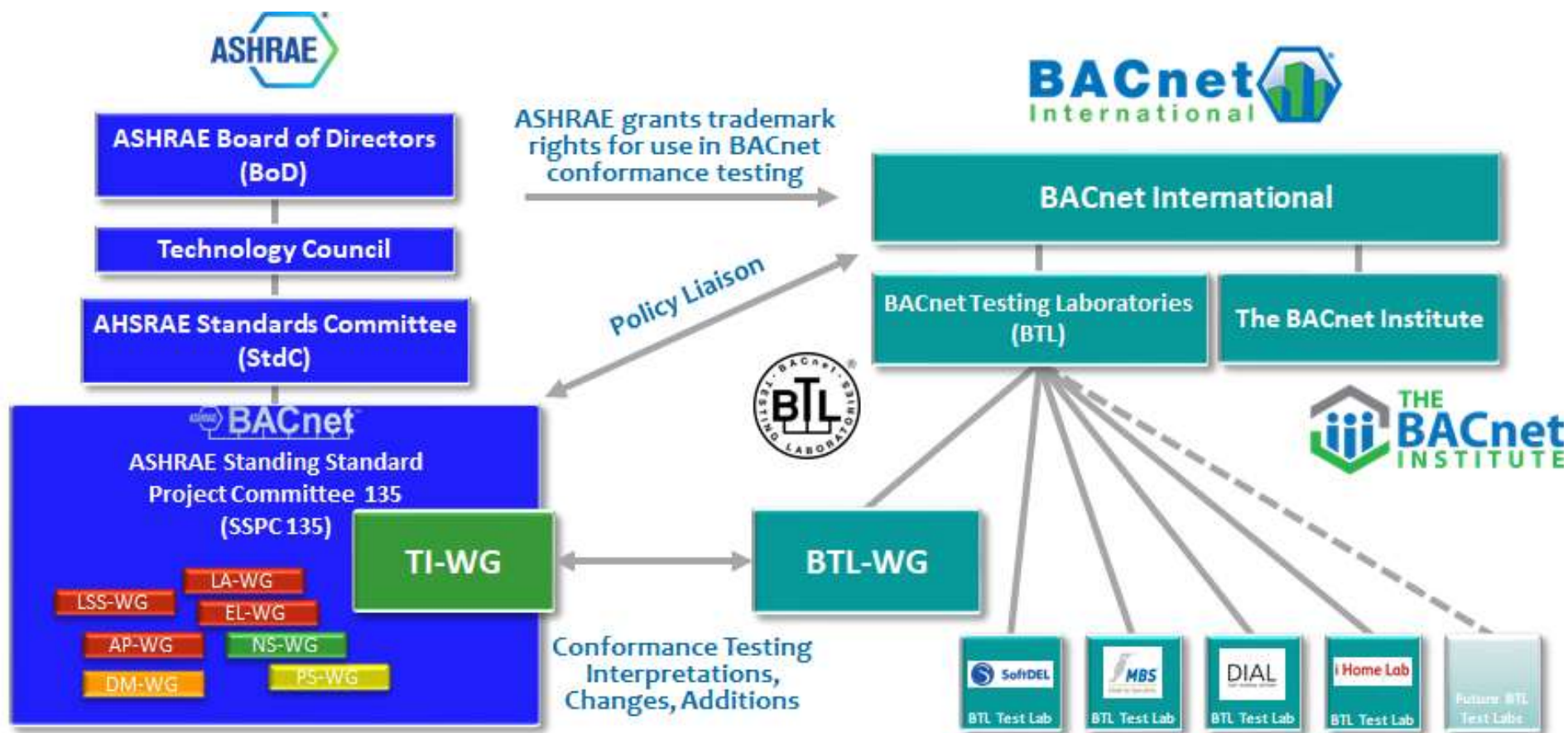


SSPC 135 in ASHRAE and ANSI



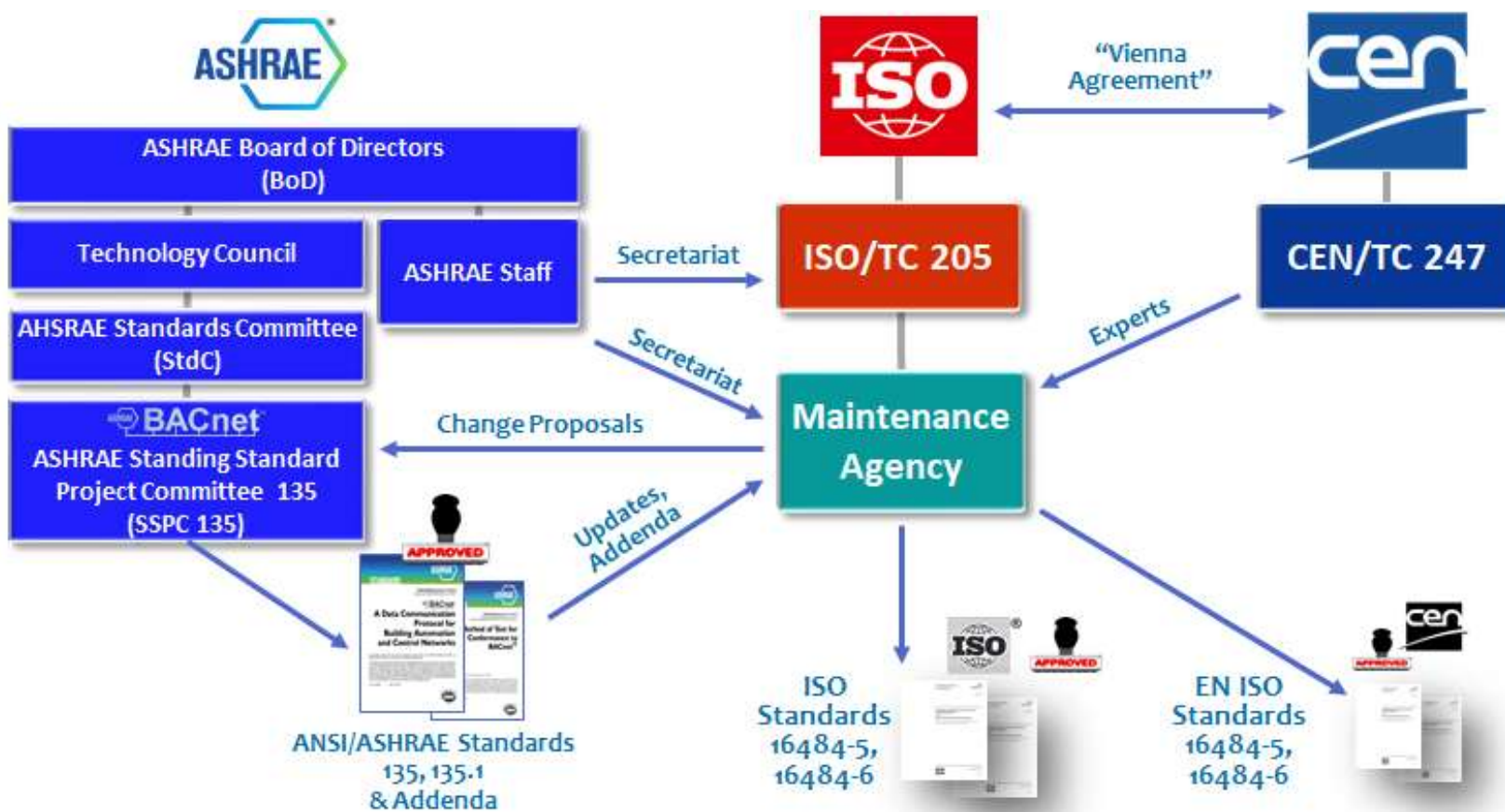


SSPC 135 and BTL



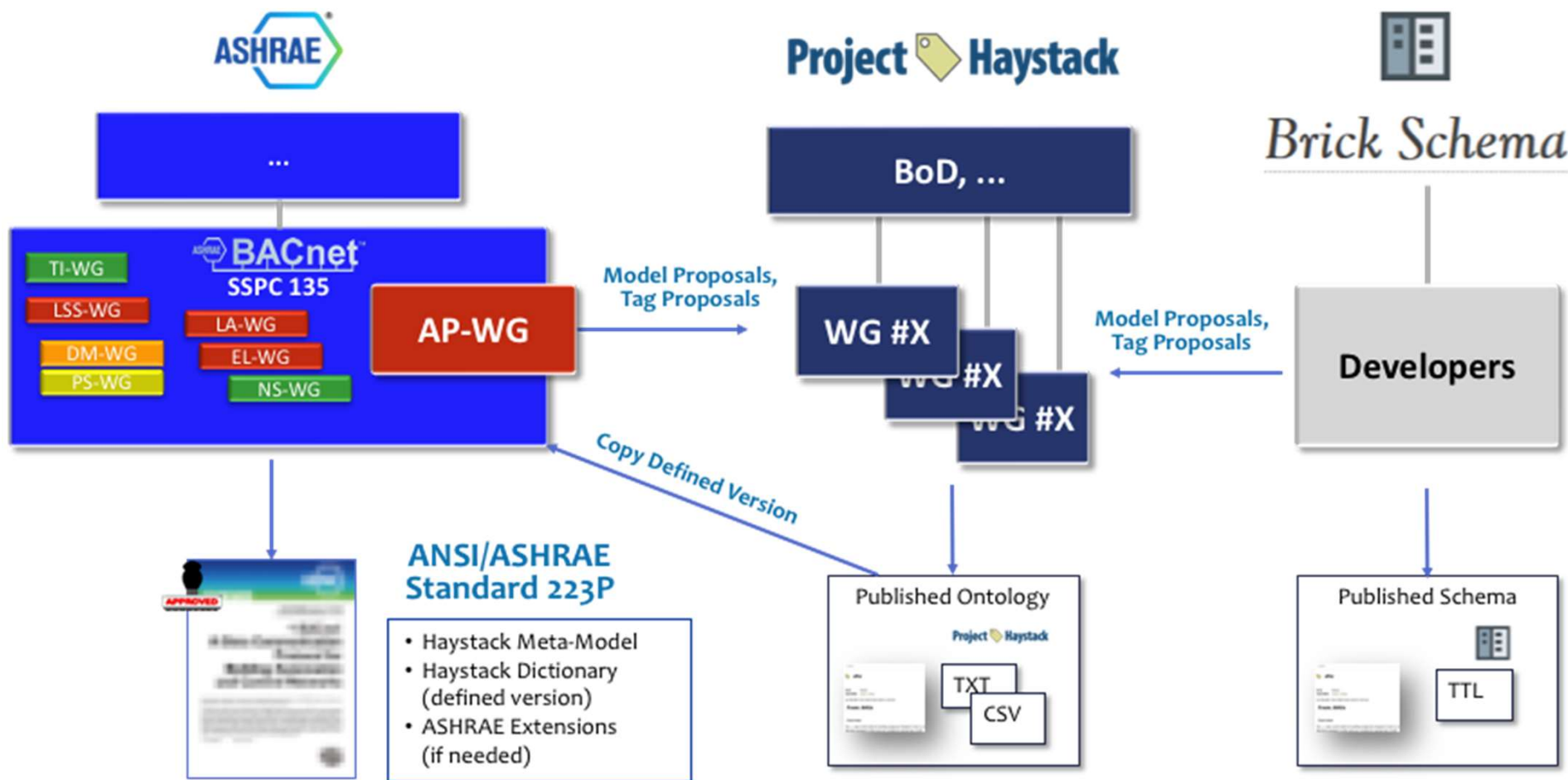


SSPC 135 and ISO/CEN





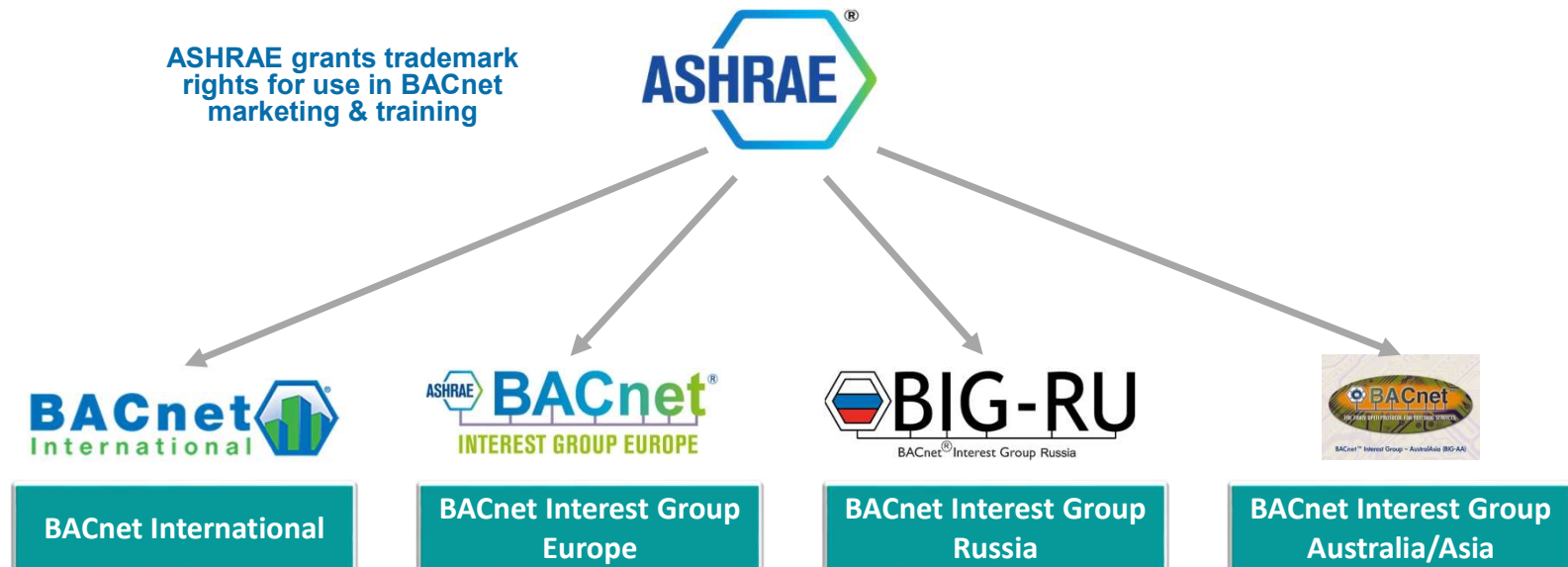
SSPC 135, Project Haystack, Brick Schema





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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