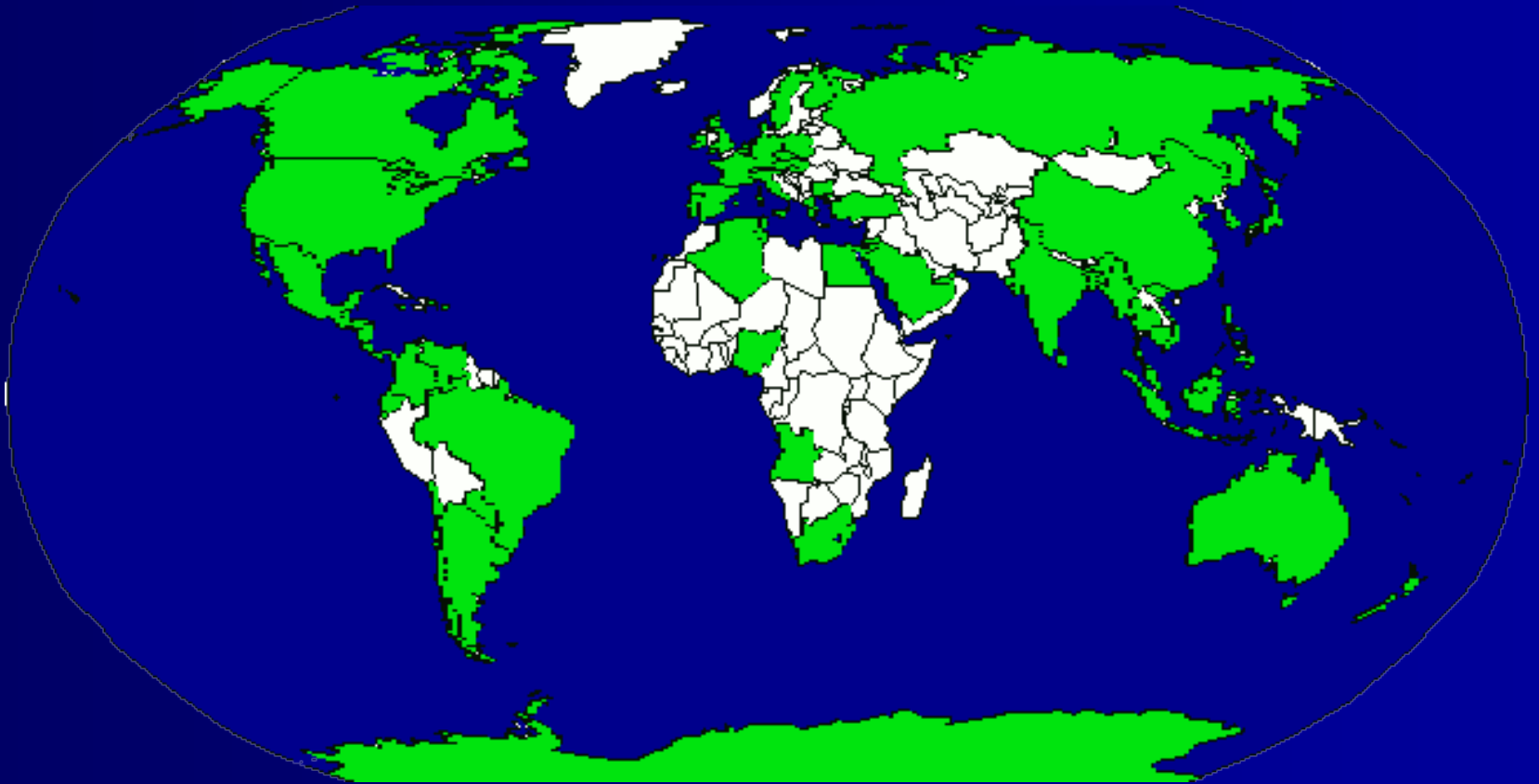
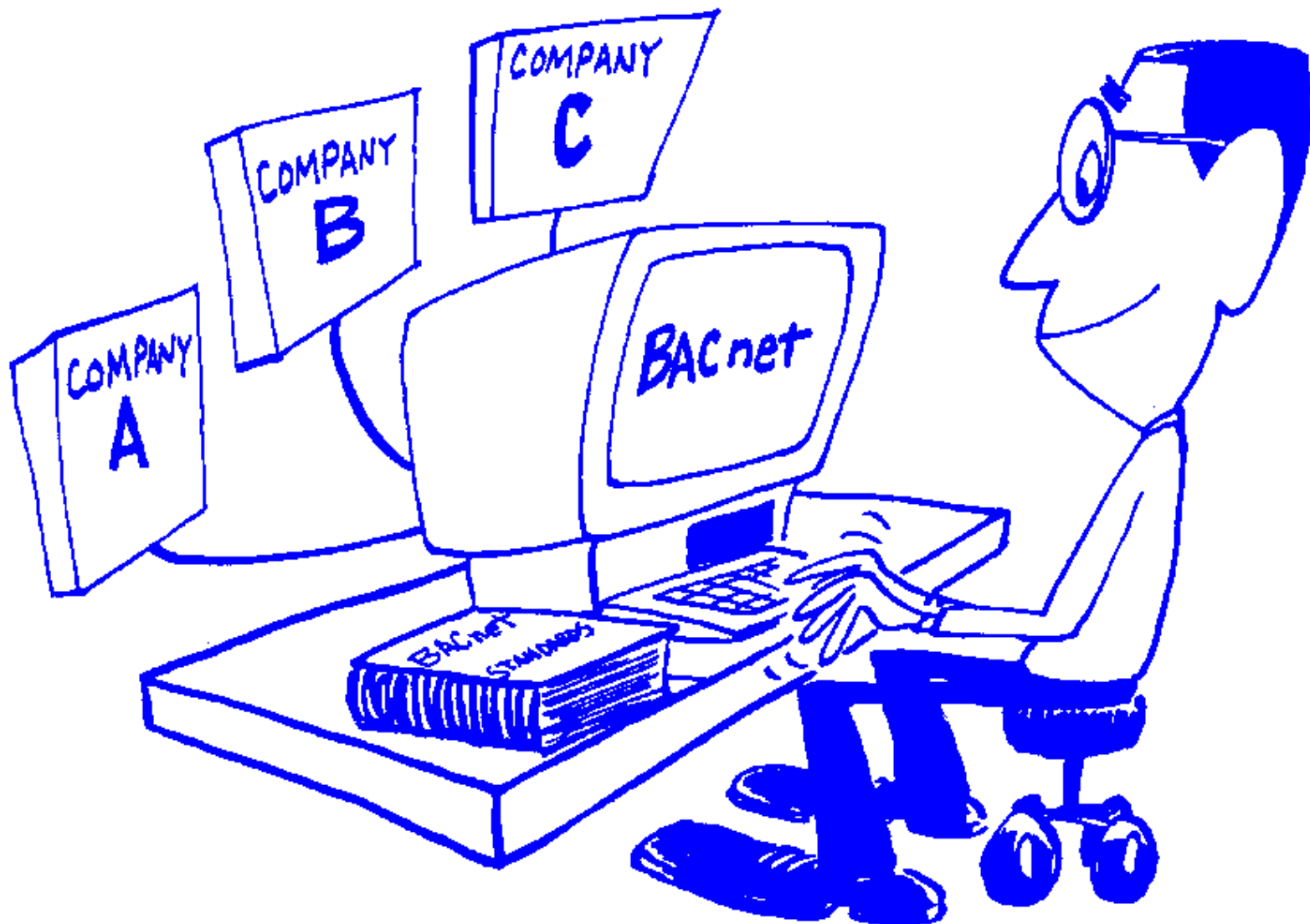




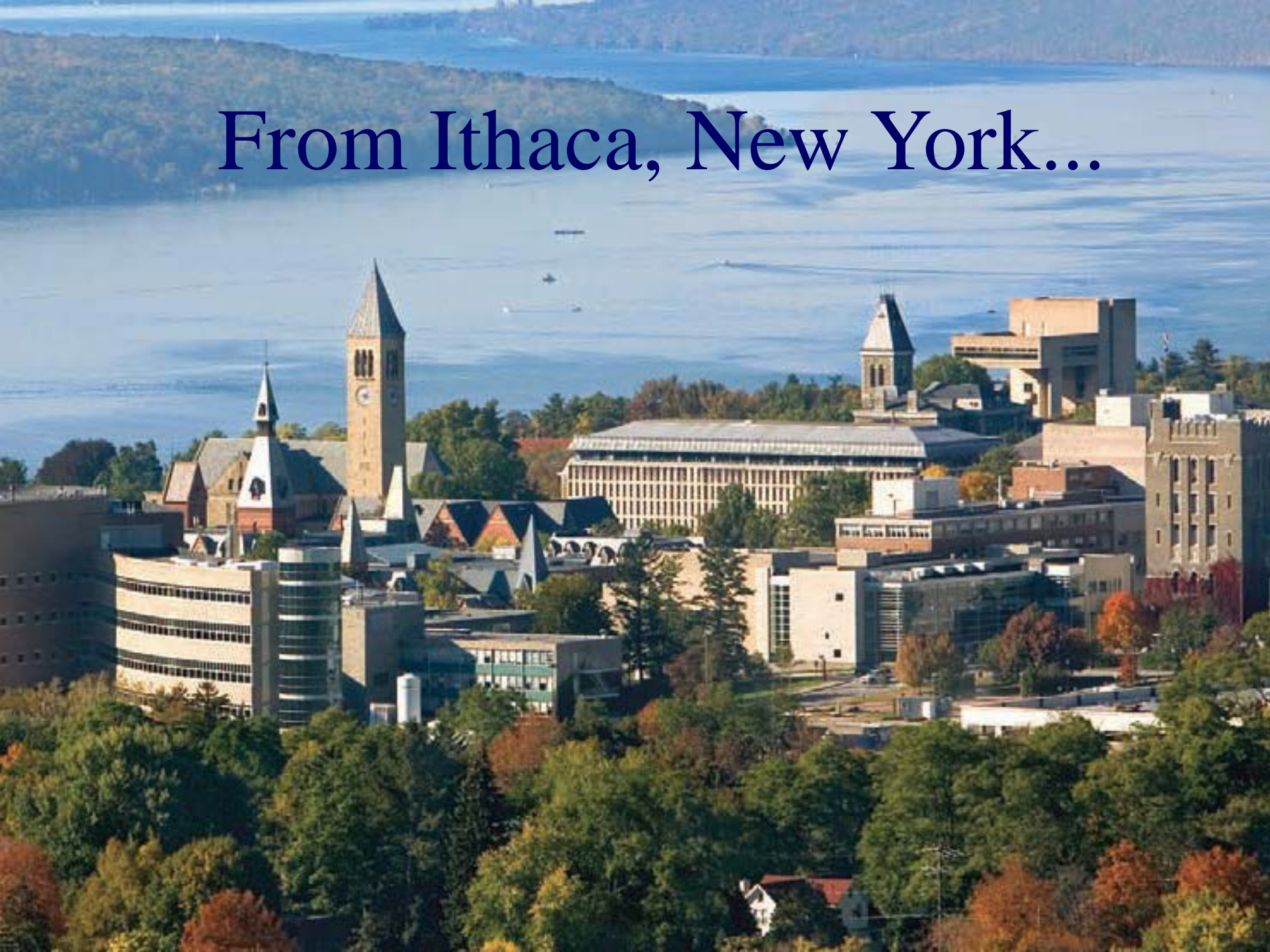
# BACnet on the World Stage







From Ithaca, New York...



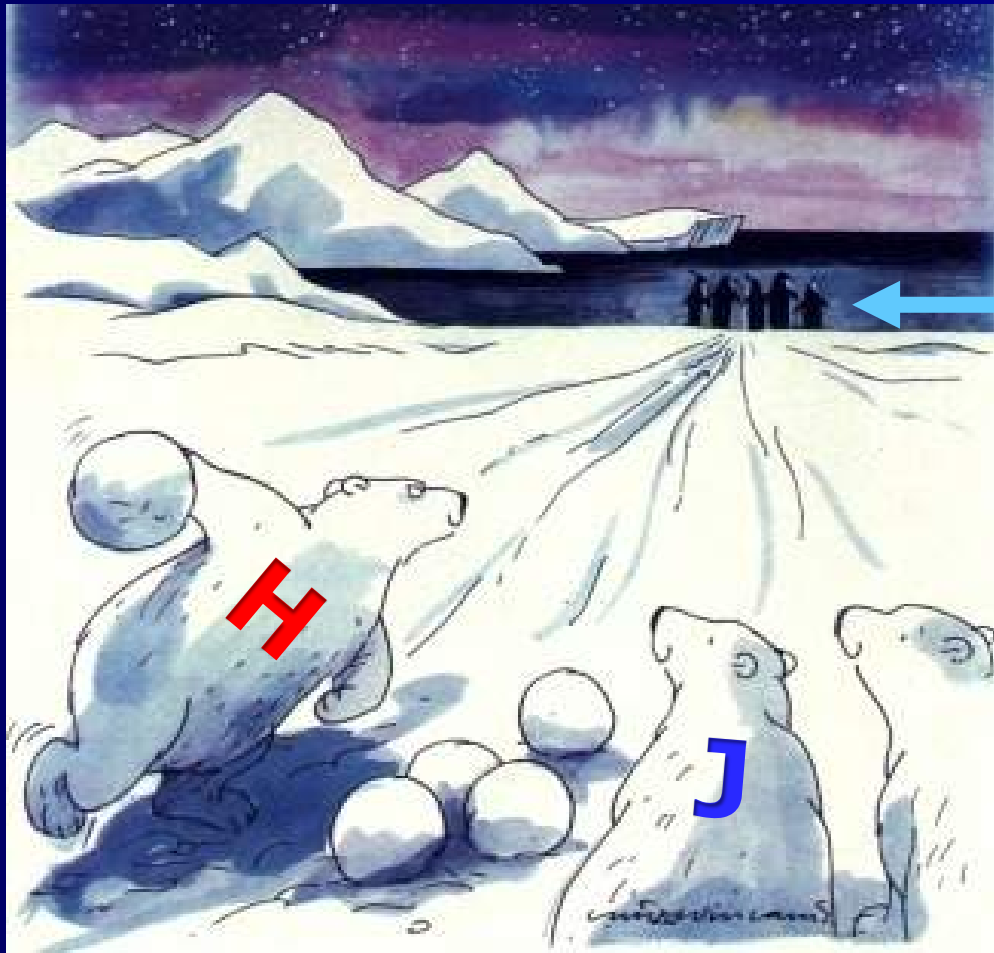
to the United States...



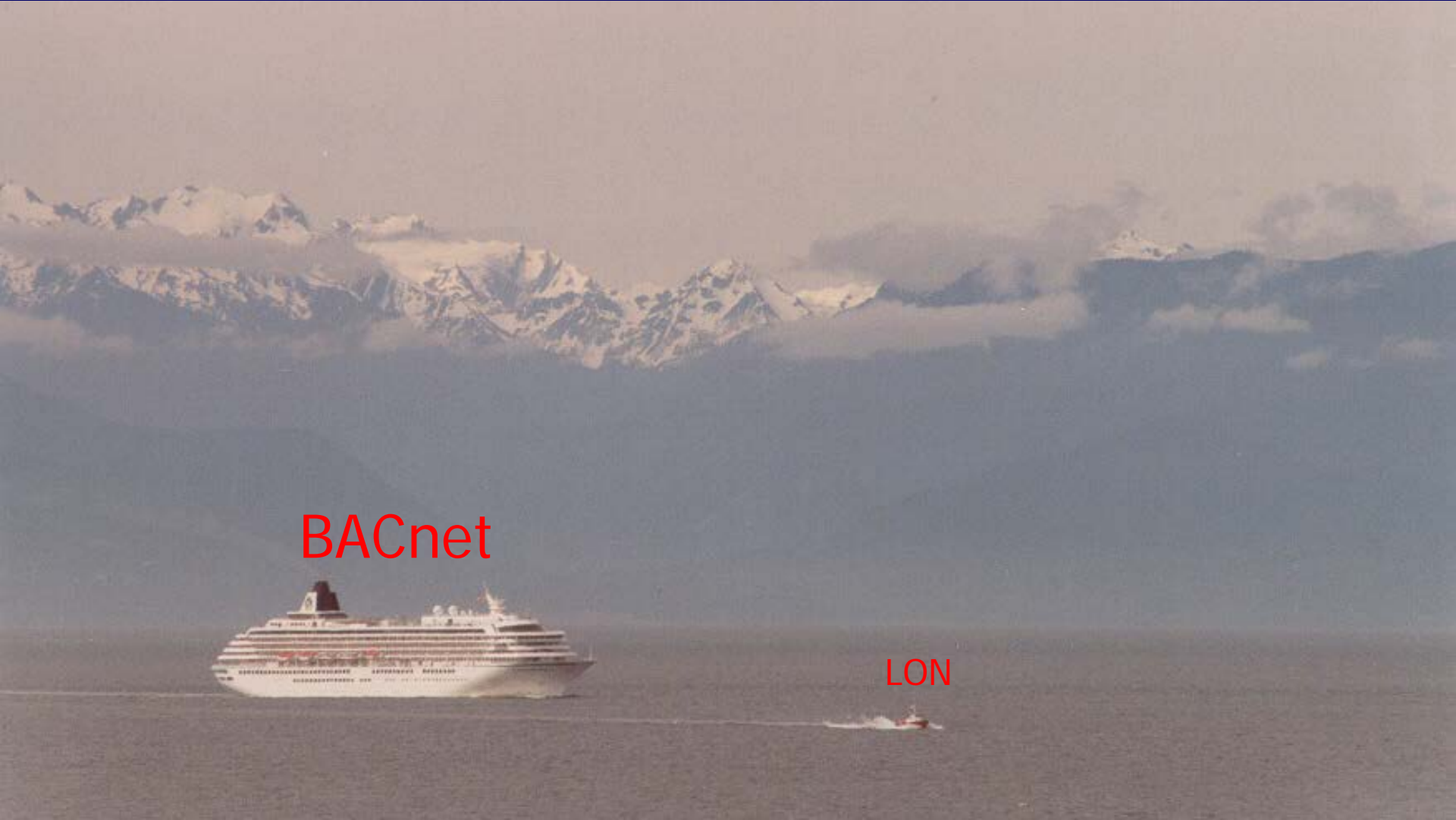
to Europe and Beyond!



There were, of course, many struggles...



BACnet  
Committee



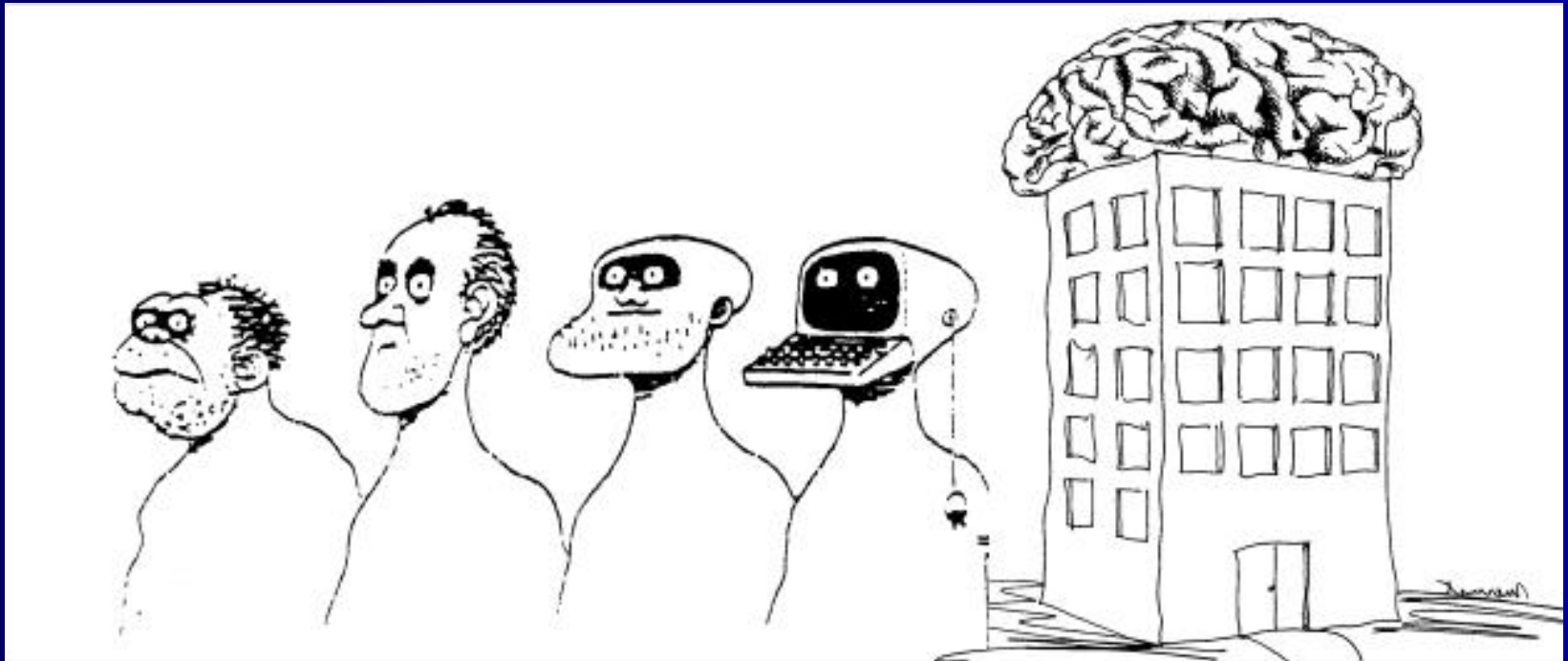
BACnet

LON





All along, BACnet has been evolving



to meet world-wide needs...

...with the assistance of people from all over the world!



**BACnet™**  
ビルディングオートメーション用  
データ通信プロトコル

ANSI/ASHRAE 135-1995 AN AMERICAN NATIONAL STANDARD

**BACnet™**  
A Data Communication Protocol for  
Building Automation and Control Networks

Approved by the ASHRAE Standards Committee June 25, 1995, by the ASHRAE Board at December 18, 1995, and by the American National Standards Institute September 15, 1995.

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2000年7月  
社団法人 電気設備学会

**KS**

빌딩 자동화 및 제어  
KS X 6909  
(ANSI/ASHRAE 135-1995)

한국산업표준심의회  
1995년 6월 25일

ASHRAE Standard 135-2001  
(formerly ANSI/ASHRAE Standard 135A, 135B, 135C, and 135D)

**ASHRAE STANDARD**

**BACnet™**  
A Data Communication Protocol for Building Automation and Control Networks

Approved by the ASHRAE Standards Committee June 25, 2001, by the ASHRAE Board of Directors June 26, 2001, and by the American National Standards Institute September 7, 2001. See History of Revisions section for significant dates of adoption.

The standard is under continuous maintenance for a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular meetings, documentation, consensus action on requests for change by any part of the audience. The change request form, instructions, and guidelines are given at the back of this document and may be accessed in electronic form from the ASHRAE website Home Page, <http://www.ashrae.org>, or in printed form from the Manager of Revisions. The latest edition of an ASHRAE Standard and previous copies of a public review draft may be purchased from ASHRAE Customer Service, 1791 Taylor Drive, Atlanta, GA 30328. E-mail: [orders@ashrae.org](mailto:orders@ashrae.org), Fax: 404-875-4646, Telephone: 404-875-6399 (toll-free), or 404-875-6399 (toll-free in U.S. and Canada).

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ANSI

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.  
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ANSI/ASHRAE 135-1995B/C/D

**BACnet™**  
楼宇自动控制网  
数据通信协议

**BACnet™**  
A Data Communication Protocol for Building Automation and Control Networks

ASHRAE  
楼宇自动控制网  
数据通信协议  
中文标准征求意见稿  
广东经济出版社

INTERNATIONAL STANDARD ISO 16484-5

Building automation and control systems —  
Part 5:  
Data communication protocol

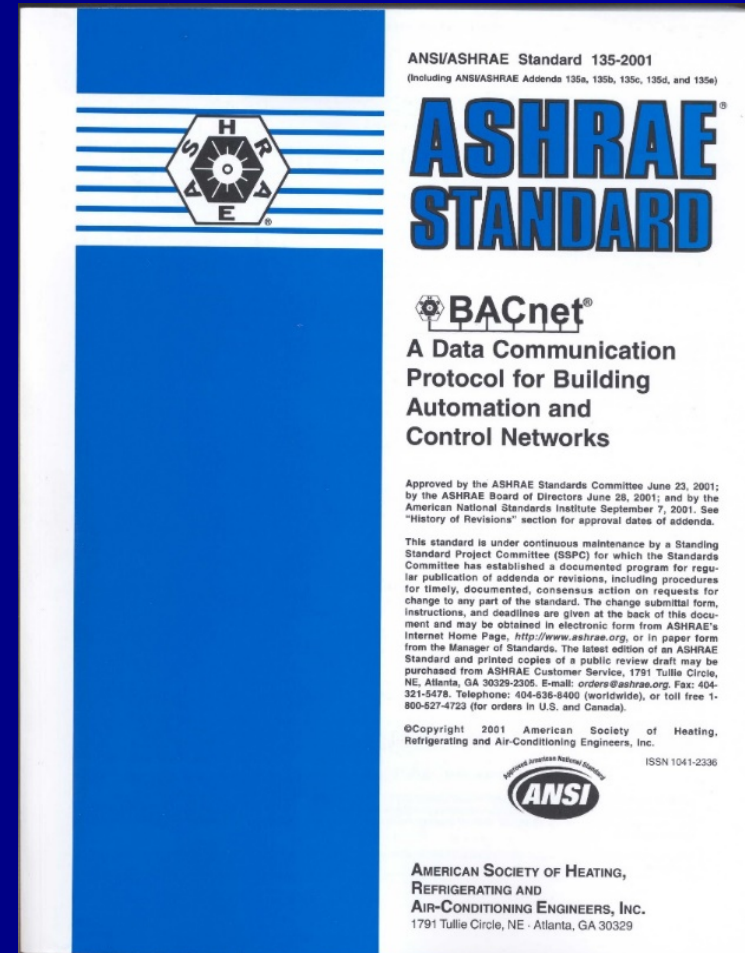
Système d'automatisation de bâtiments technique de bâtiment —  
Partie 5: Protocoles de communication de données

Reference number  
ISO 16484-5:2003(E)

© ISO 2003

# Now BACnet is a World Standard ISO 16484-5

- BACnet was adopted as an ISO standard in January 2003 by a unanimous vote of ISO/TC 205
- The testing standard has also been adopted by ISO and CEN as 16484-6



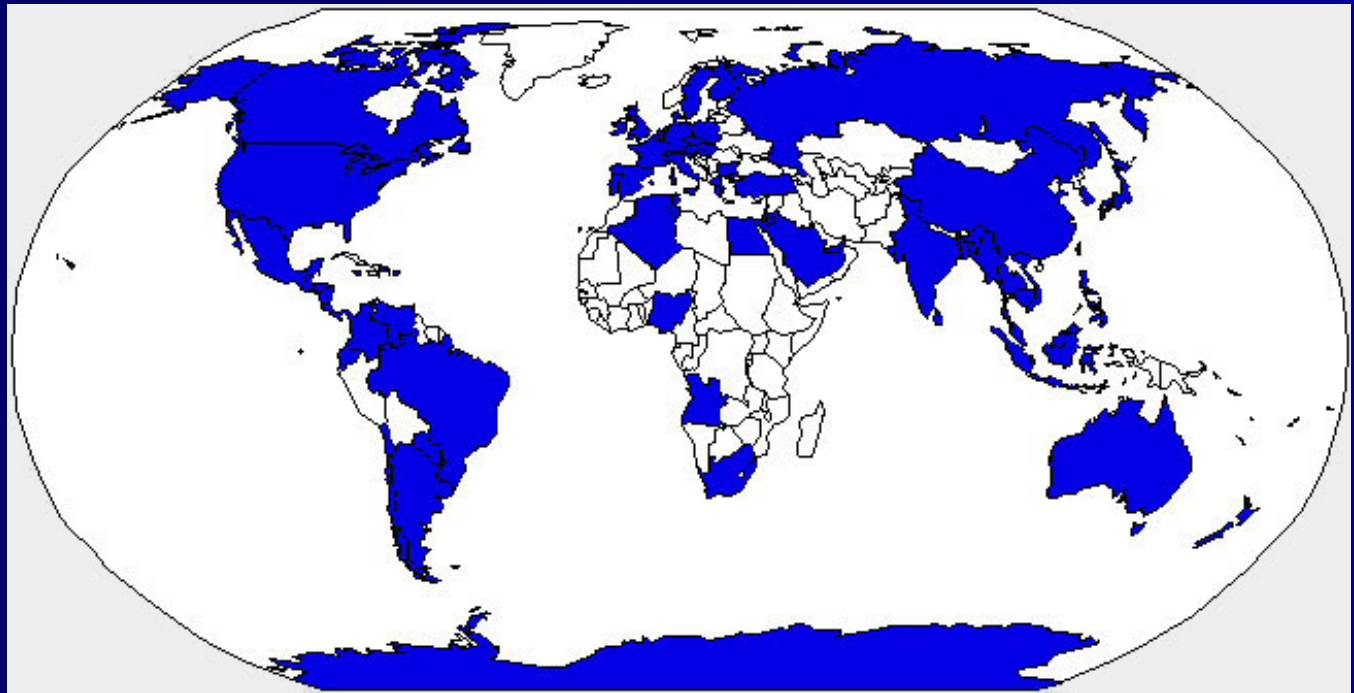
# More than 1,000 BACnet Vendor IDs in 49 countries show manufacturer interest

USA	353
Germany	114
Canada	75
Japan	61
China	50
United Kingdom	38
Switzerland	32
Australia	31
Italy	23
Korea	23
Poland	23
France	17

...

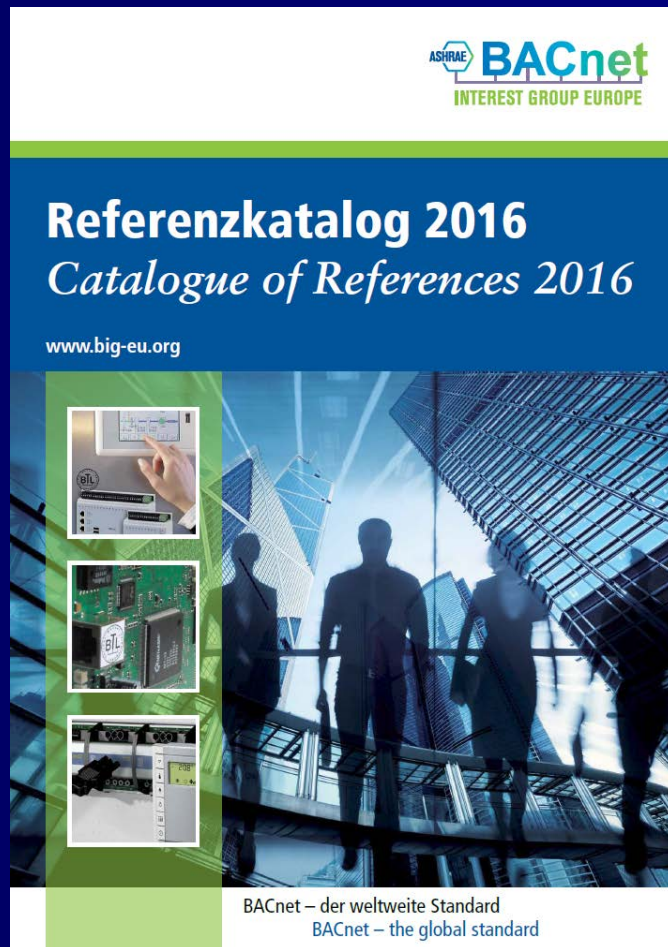


# Where is BACnet being used?



Countless systems are installed today world-wide in more than 100 countries and on all continents.

# BIG-EU has published a "Catalog of References" (i.e., case studies)



Arranged by type of facility:

- Commerce & Services
- Congresses & Venues
- Health Care & Geriatrics
- Hotel & Gastronomy
- Industry & Trade
- Office & Administration
- Public Sector & Politics
- Science & Research
- Sports & Leisure
- Transportation & Infrastructure

## And BACnet International...

has listed dozens of "Success Stories" on its website:

*[www.bacnetinternational.org](http://www.bacnetinternational.org)*

Here are a few examples of international BACnet activity:

# BACnet 专题报告会

- China plans to build 5 billion m<sup>2</sup> of new buildings over 10 years!
- About 20% would be suited for BACnet technology
- By comparison the US government maintains about 75 million m<sup>2</sup> of office space





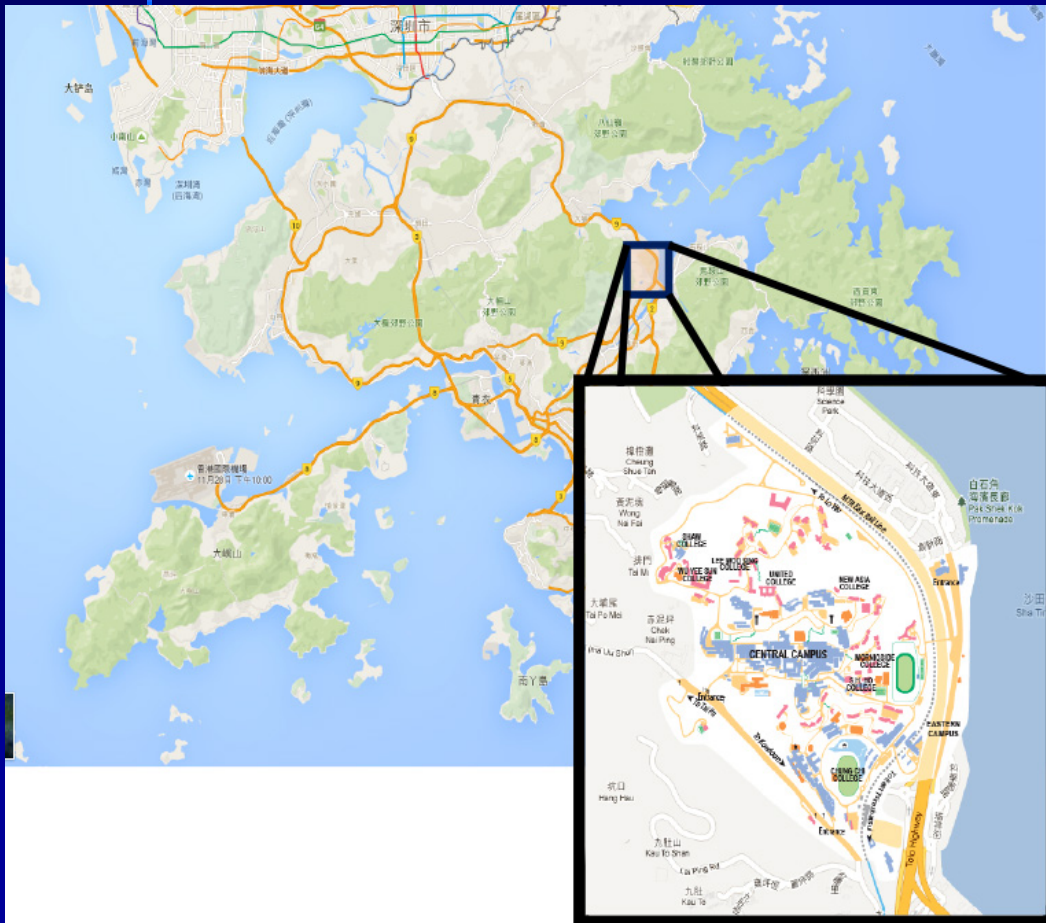
# Shanghai Scienceland Museum

Shanghai, China



- Government/Public
- Boiler, Chiller, HVAC, Lighting, Power Monitoring, Security
- BACnet Devices: 700
- BACnet Points: 3,200

# The Chinese University of Hong Kong Sha Tin, Hong Kong



- Colleges/Universities
- 36 Buildings, Space and Lab monitoring
- BACnet Devices: 2,589
- BACnet Points: 34,800

# Railway Plaza Building

Tsim Sha Tsui East, Hong Kong



- Commercial Office
- Chiller, HVAC, Lighting, Smoke
- BACnet Devices: 25
- BACnet Points: 2,000

# Air Mobility Training Centre

Canadian Forces Base Trenton, Ontario, Canada



- Military
- LEED Silver
- BACnet Devices: 669
- BACnet Points: 10,579

# Ashburton Court

Winchester, Great Britain



- Government/Public
- Hampshire County Council
- BACnet Devices: 126
- BACnet Points: 4,761

# Deutsche Post - German postal service

## 120 locations in Germany



- Government/Public
- Power and Water Monitoring
- BACnet Devices: 120
- BACnet Points: 2,500

# Mercedes-Benz (O<sub>2</sub> World) Arena Berlin, Germany



- Mixed Use
- 17,000 seats, 59 lounges, 100 shops
- BACnet Devices: 36
- BACnet Points: ~1,800

# Nowogrodzka, Poland



- Modern office building
- Location-Warsaw
- 80 ASC controllers
- 1 global controller
- 1 front-end computer



# Melbourne Cricket Ground

## Melbourne, Australia



- Sports
- Boiler, Chiller, HVAC, Lighting, Power Monitoring
- BACnet Devices: 550
- BACnet Points: 8,500

# West Rolleston Primary School

Selwyn, Rolleston, New Zealand



- Schools
- CO<sub>2</sub> Monitoring, Heatpump, HVAC, Power Monitoring, Water Monitoring
- BACnet Devices: 25
- BACnet Points: 250

# Hilton Pyramids Golf Resort

Cairo, Egypt



- Hospitality
- 230 rooms, 18-hole golf course
- BACnet Devices: 920
- BACnet Points: 5,500

# Kuwait Oil Company Headquarters

## Al Ahmadi, Kuwait



- Mixed Use
- 10 Buildings
- BACnet Devices: 2,150
- BACnet Points: 15,000

# Neutec Pharmaceuticals

## Sakarya, Turkey



- Industrial
- ~800,000 ft<sup>2</sup>
- BACnet Devices: 300
- BACnet Points: 4,000

# Royal Saudi Naval Force Headquarters

## Riyadh, Saudi Arabia



- Military
- HVAC, Smoke
- BACnet Devices: 788
- BACnet Points: ~20,000

# Hachikoda-maru

Aomori, Japan



- Full native BACnet
- Japanese Windows WS
- Zone level DDC of all HVAC

While the committee deliberated...

BIGs (not BUGs!) began to form  
and they began publishing journals!



# BACnet Interest Groups exist around the world!



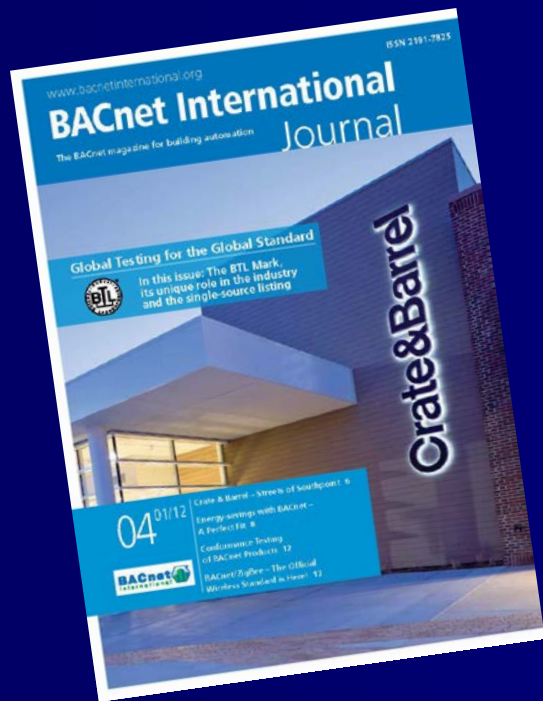
BIG-Sweden

There are now 9 BIGs with more on the way!



BIG - Poland

# Publications promote BACnet world-wide!

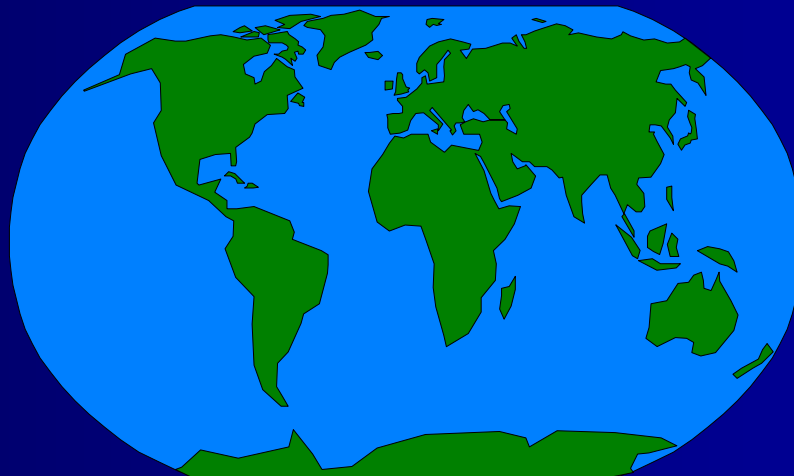


# Publications promote BACnet world-wide!



# Testing is also International

- Organizations in North America and Europe have worked together to create a unified testing and listing program
- Four test labs have been established in India, Germany, and Switzerland



# BACnet Education and Training

But attending seminars, forums, and visiting with fellow "BACneters" around the world has been the most enjoyable...



# International BACnet Symposium in Japan

社団法人 電気設備学会 IEIEJ 後援 経済産業省原子力安全・保安院

## Tokyo and Osaka



- Sponsored by the IEIEJ
- Speakers from China, Japan, and the U.S.
- Revealed the great enthusiasm for BACnet in Japan
- The IEIEJ continues to sponsor BACnet educational and promotional activities



# BACnet Forum 2009 - Beijing



# BIG-China - Beijing

The Great Wall

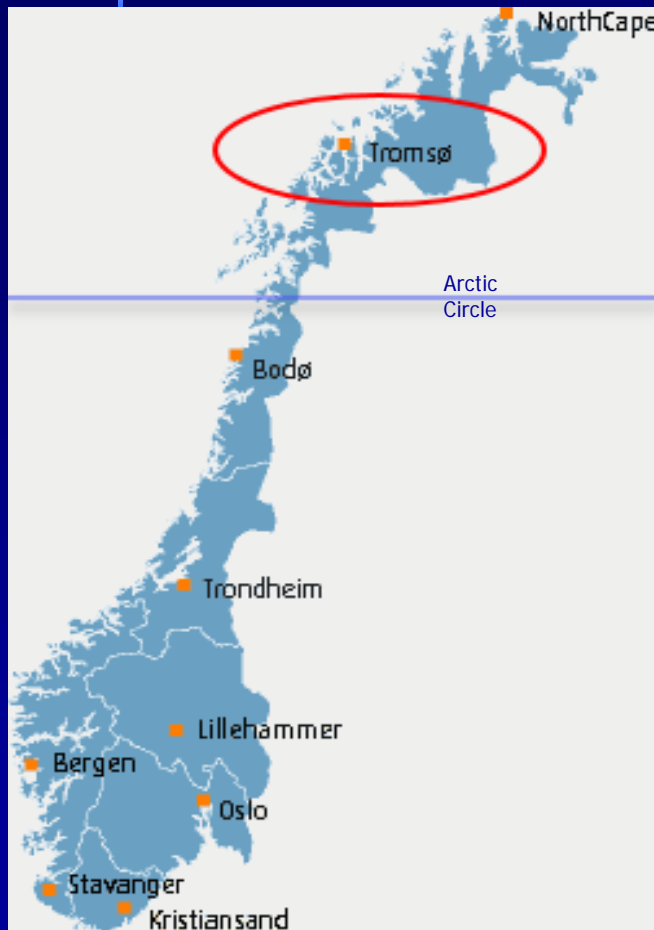


# BIG-China - Beijing



The Forbidden City

# ISO/TC 205 – Tromsø, Norway



ISO/TC 205 – 317 miles  
north of the Arctic Circle!



# ISO/TC 205 – Cairo, Egypt



# BIG-Middle East - Dubai



# ISO/TC 205 – Copenhagen, Denmark





And lots of other fascinating places...



Beerwah, Queensland, Australia

Qutub Minar, Delhi, India



# From India to Mexico!



Karnataka, India

Teotihuacan, Mexico



Tokyo — September 2017



Welcome to Ithaca!



# Campus Smart Summit: Beyond the Dashboard!

