



Communications Standards: IEEE Standards Association and “ComSoc” Perspectives

16th IEEE Symposium on Computers and Communications

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IEEE ComSoc Standards Board (CSSB) Chair

IEEE ComSoc Director of Standards



Keynote Overview

- **IEEE**
 - IEEE Standards Association
 - The Standards Process
 - **IEEE Communications Society**
 - ComSoc Profile
 - ComSoc Standards Board (CSSB)
 - The current view
 - Where we're headed
 - Salient Projects – *today...*
 - CSSB invites *your* input for *new* projects

IEEE Today

World's largest technical professional society



**ADVANCING TECHNOLOGY FOR
HUMANITY**



MEMBERS

400,000+

COUNTRIES

>160

CONFERENCES

1000+ per year

PUBLICATIONS

**Over 30% of world's electro-technical
literature**

STANDARDS

**Over 900 active standards;
Over 500 active projects**

407,621 IEEE Members (December 2010)

North America

227,659 (-0.8%)

Europe

55,131 (3.6%)

Africa

5,952 (5.3%)

Asia

93,665 (10%)

Latin America & Caribbean

16,228 (9.4%)

Oceania

8,986 (7.7%)

(% Annual Growth during 2010)

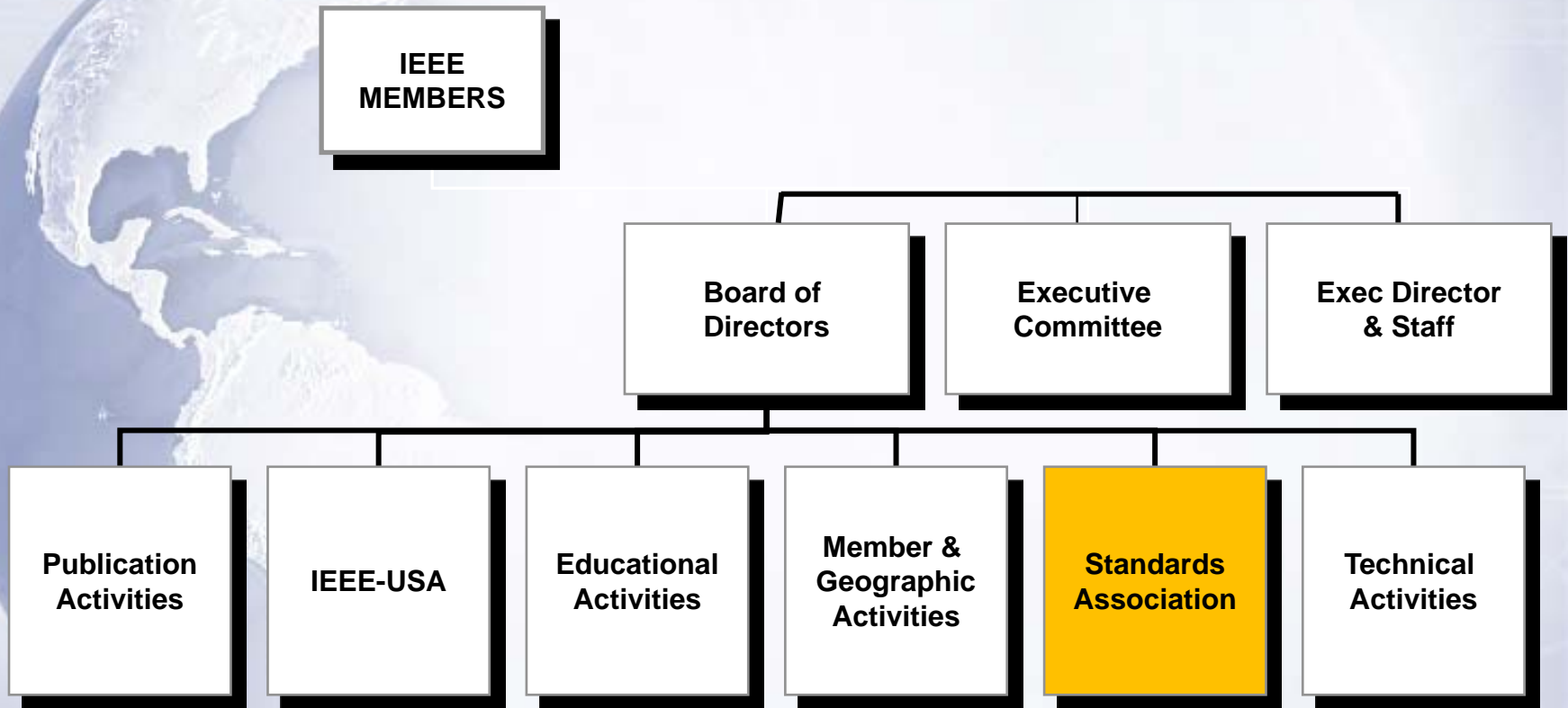
Only 44% outside North America



Keynote Overview

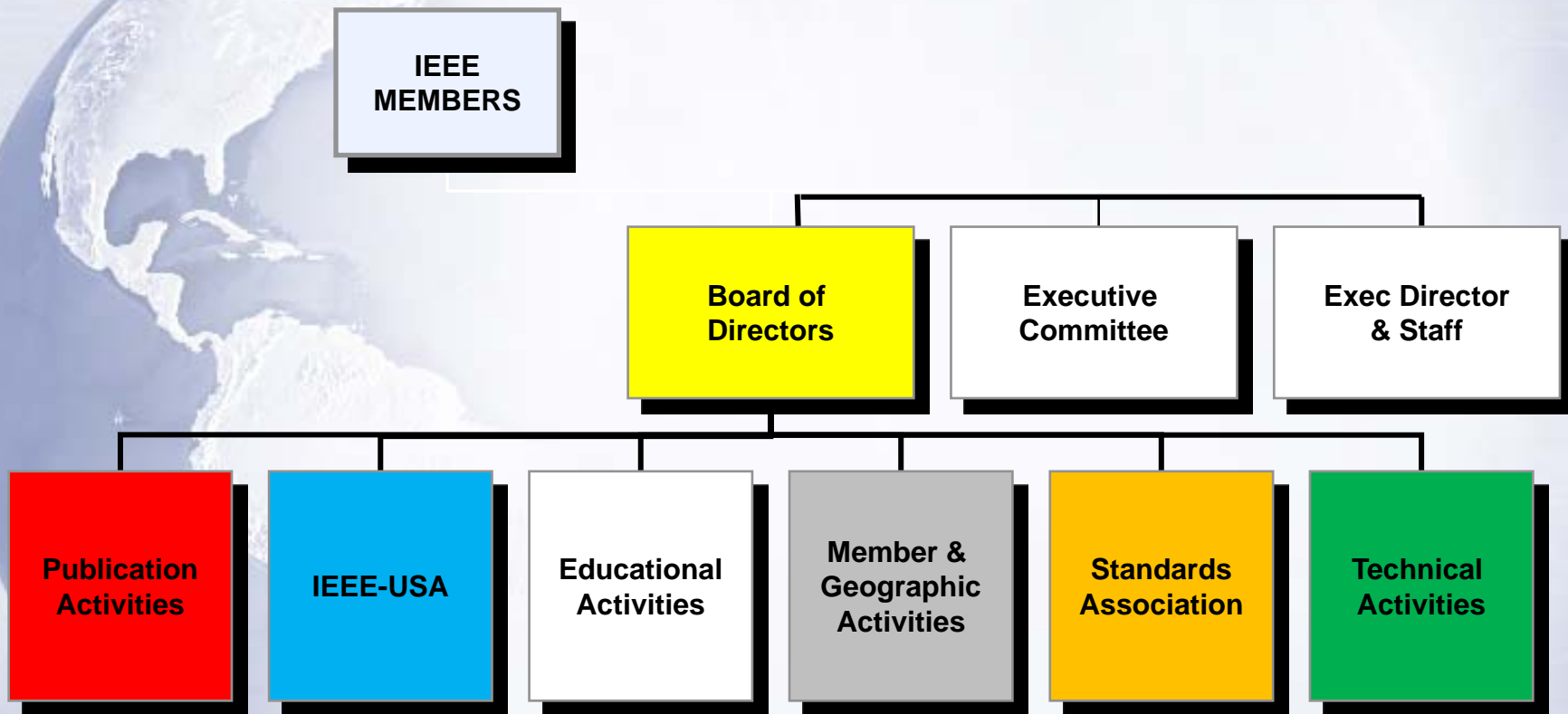
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Where IEEE-SA Fits Within the IEEE



Where IEEE-SA Fits Within the IEEE

Where Curtis Fits Within IEEE



IEEE Standards Association (IEEE-SA)

- Globally recognized standards-setting body
 - Over 900 active standards
 - More than 500 standards under development
 - 7000 individual and 200 corporate members
- Complete technology lifecycle management
 - Pre-Standards Development
 - Industry Connections
 - Standards Development
 - Individual- or entity-based
 - Standards Market Implementation
 - Conformity Assessment
 - Patent Pools
 - Registration Authority
 - Professional Support Services & More
- Ensures rapid introduction of new technologies to market



IEEE-SA International Partnerships

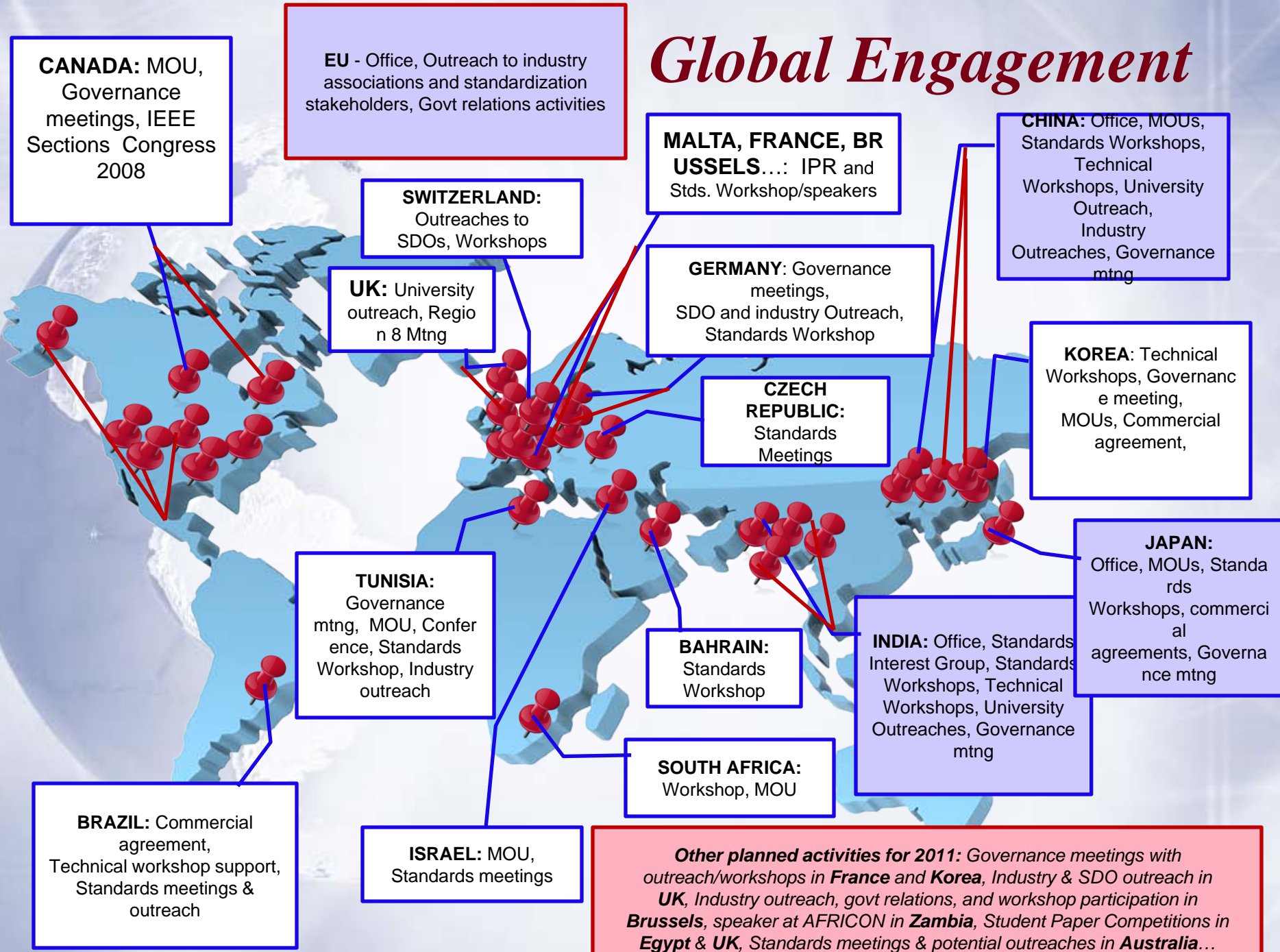
China
Japan
Korea
Brazil
Canada



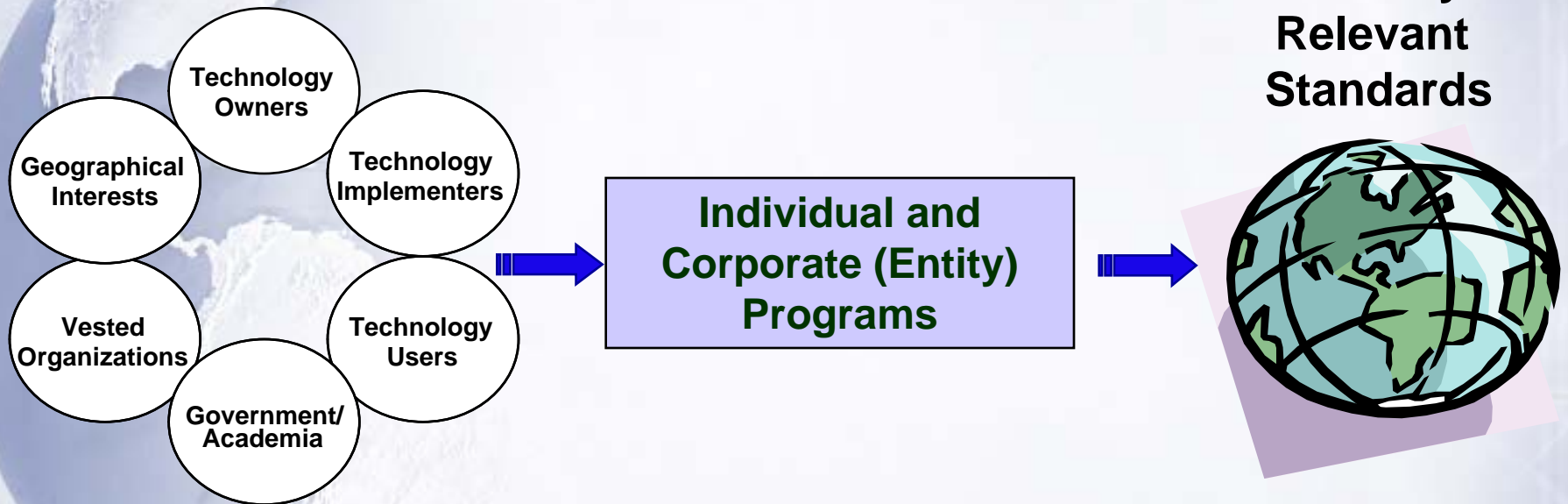
Middle
East/North
Africa
Europe
South Africa



Global Engagement



IEEE-SA Supports Standards-Development *Constituents*



*Recognizing the expanding breadth of constituents and stakeholders
in the adoption of global standards*

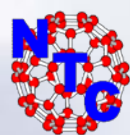
IEEE Standards Are Pervasive

Addressing a broad spectrum of technologies

- Aerospace Electronics
- **Broadband Over Power Lines***
- Broadcast Technology
- Clean Technology
- **Cognitive Radio***
- Design Automation
- **Electromagnetic Compatibility***
- Green Technology
- LAN/MAN
- Medical Device Communications
- **Nanotechnology***
- National Electrical Safety Code
- Organic Components
- Portable Battery Technology
- Power Electronics
- Power & Energy
- Radiation/Nuclear
- Reliability
- Transportation Technology
- **Test Technology***



**IEEE
COMMUNICATIONS
SOCIETY***



**IEEE
Nanotechnology
Council**

IEEE Standards Development: How to Get Started



IEEE- SA Individual & Corporate Programs



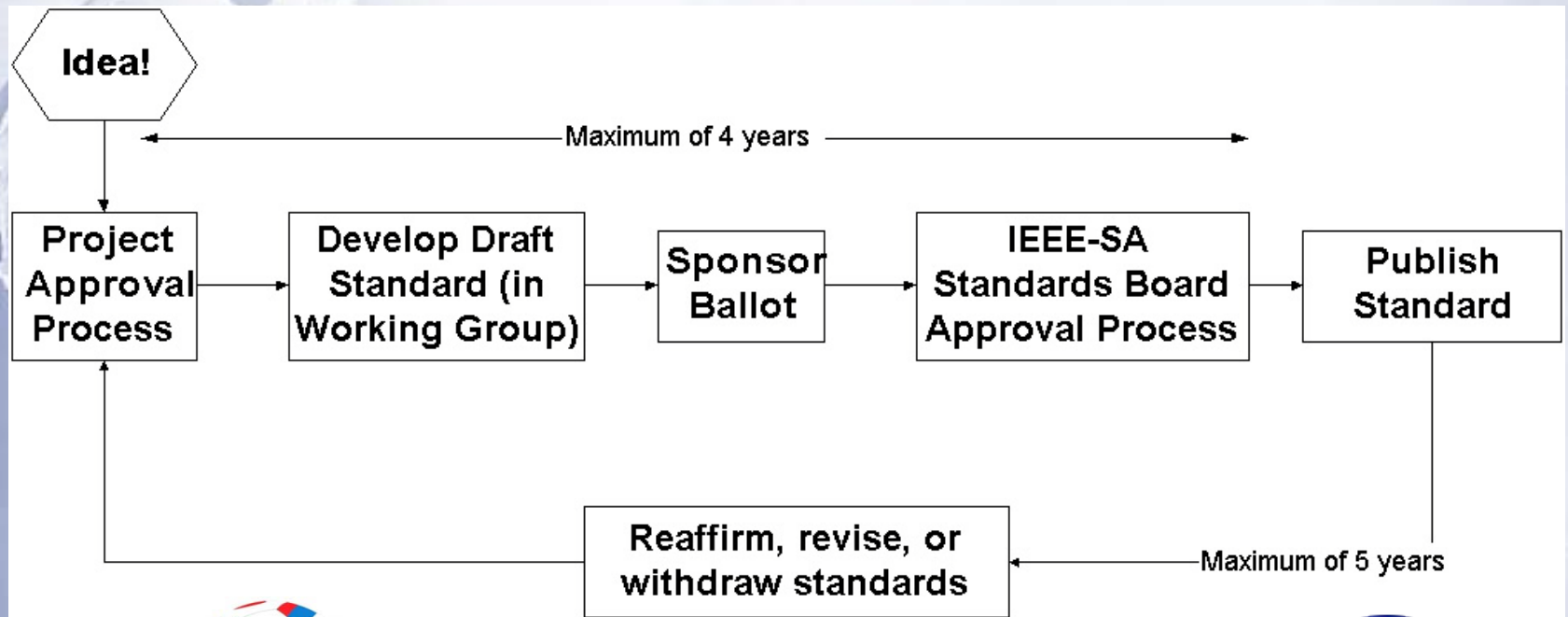
IEEE Standards Development: Project Approval Process



IEEE Standards Development: Develop Draft Standard



IEEE Standards Development: Process Flow



See Standards Board Operations Manual,
Sections 5.2 and 9, at:
<http://standards.ieee.org/develop/policies/opman>



**IEEE Standards Development:
Approval Process → Publication
Not a Sponsor technical assessment**

IEEE-SA Information & Materials

- IEEE-SA Web site
 - <http://standards.ieee.org/>
- IEEE-SA News
 - <https://standards.ieee.org/sa-mem/central/sanews.html>
- IEEE Xplore = Standards!
 - <http://ieeexplore.ieee.org/xpl/standards.jsp>

- For further information contact:
- Theresa deCourcelle t.decourcelle@ieee.org
- Jennie M. Steinhagen j.steinhagen@ieee.org

IEEE Standards Association Development Groups

Generic Hierarchical Structure

Generic Hierarchical Structure

ComSoc Standards Board

Working Groups
and Study Groups

Ideas for Getting Started: IEEE Communications Society



Keynote Overview

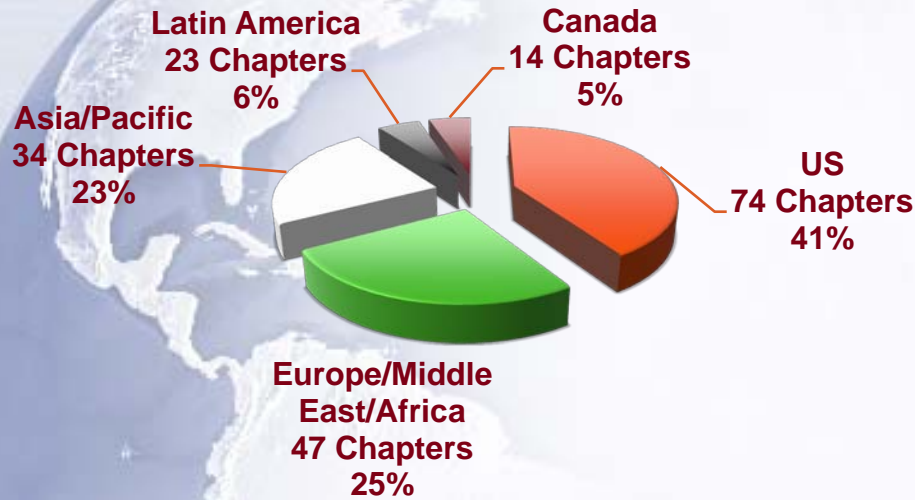
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IEEE Communications Society – Where the Action Is!

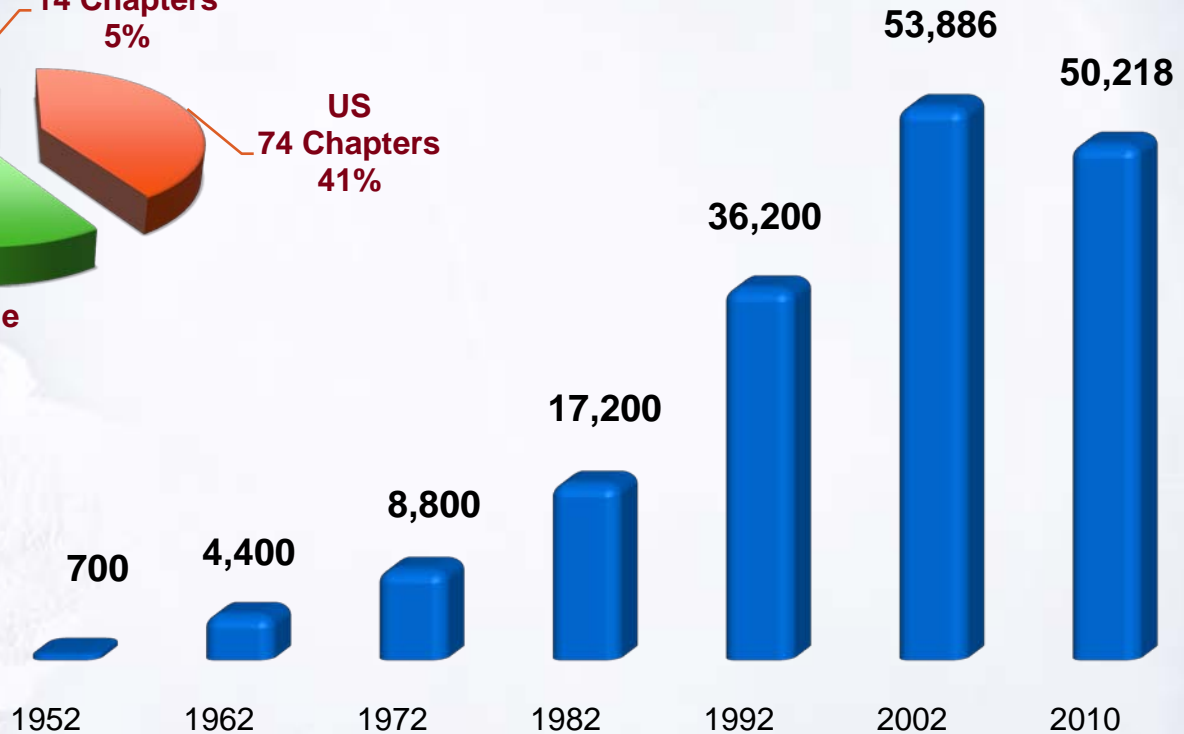
ComSoc Profile

- **Membership**
 - 50,218, year-end 2010
 - Second largest society (after Computer); growing faster in full, non-affiliate memberships
 - Largely industry based; academics a solid 2nd.
- **Chapters**
 - 192

ComSoc Membership



192 Chapters



- 1952 IRE Professional Group on Communications Systems (PGCS)
- 1964 IEEE Group on Communications Technology (ComTech) – 4,400
- 1972 IEEE Communications Society (ComSoc) – 8,800

Member Employment

Self-Employed/Consulting
8%

Public/Gov't
8%

All Other
6%

Students
14%

Private Industry
45%

Educational Institutions
19%

“All Other” includes retired and unemployed.

Members by Grade

Graduate Students 10%

Students 10%

Affiliates 1%

Associates 4%

Fellows 2%

Senior Members
10%

Members 62%

IEEE Communications Society – Where the Action Is!

ComSoc Profile (Continued)

- **Publications**
 - 13 Publications (Magazines, Journals, Transactions, etc.)
 - Five ranked within top Ten (5/10) by *Journal Citation Reports Science Edition* (2009) published by Thomson
 - A digital library, monthly e-News (free), webinars, webcasts, online tutorials
- **Conferences**
 - 90 conferences, 33 with ComSoc financial interest
 - Annually draw approximately 9000 attendees
- **Technical Committees**
 - 23 - spanning every aspects of communications technology
 - Oversees ComSoc Standards Board (CSSB)
- **Member Relations with 26 Trans-National (Sister) Societies**
 - Plus 8 other Technical (Related) Societies and most of the 40+ IEEE Societies

Technical Activities

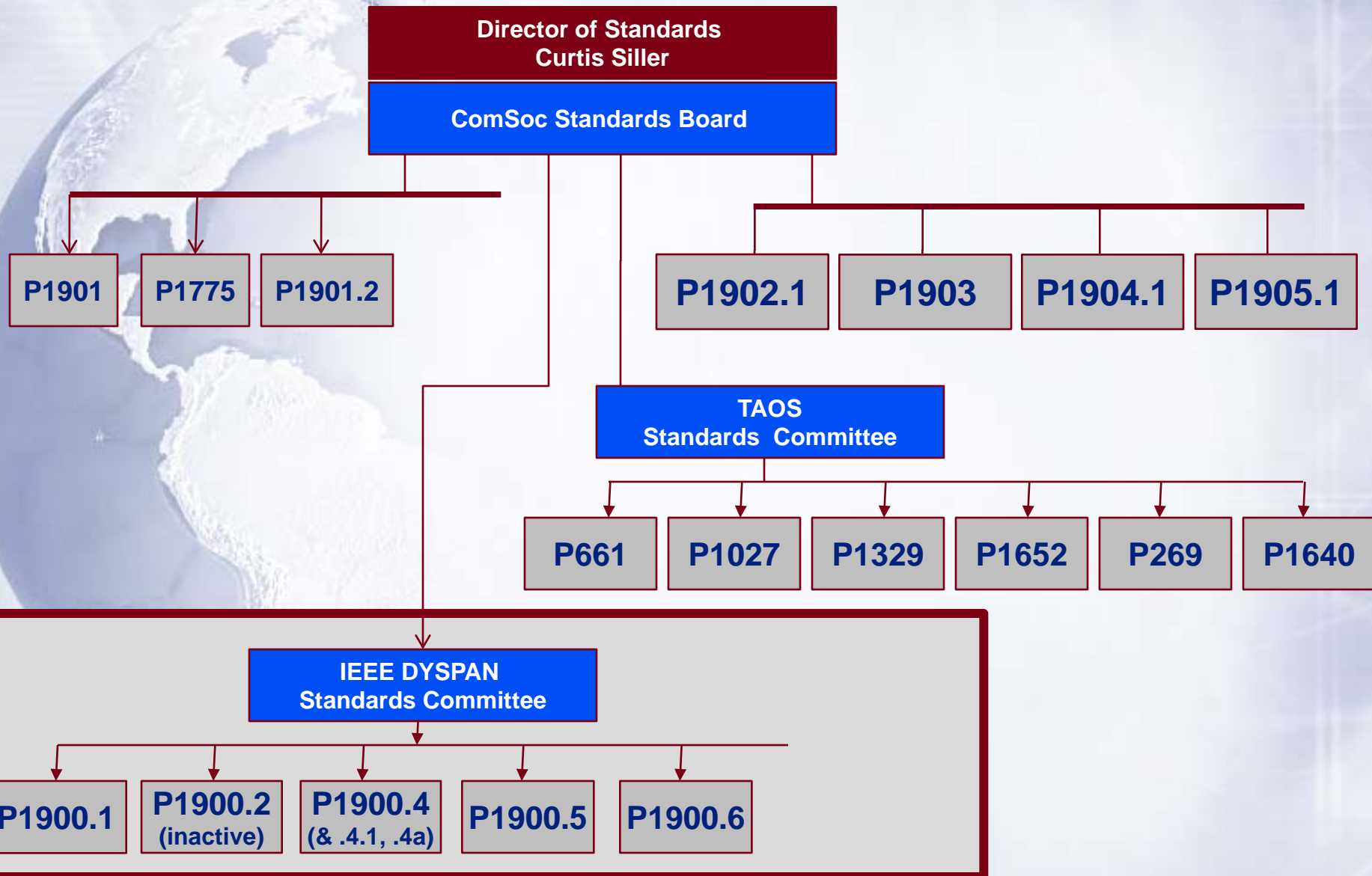
VP Technical Activities (1/4; 2011)

Technical Committees:

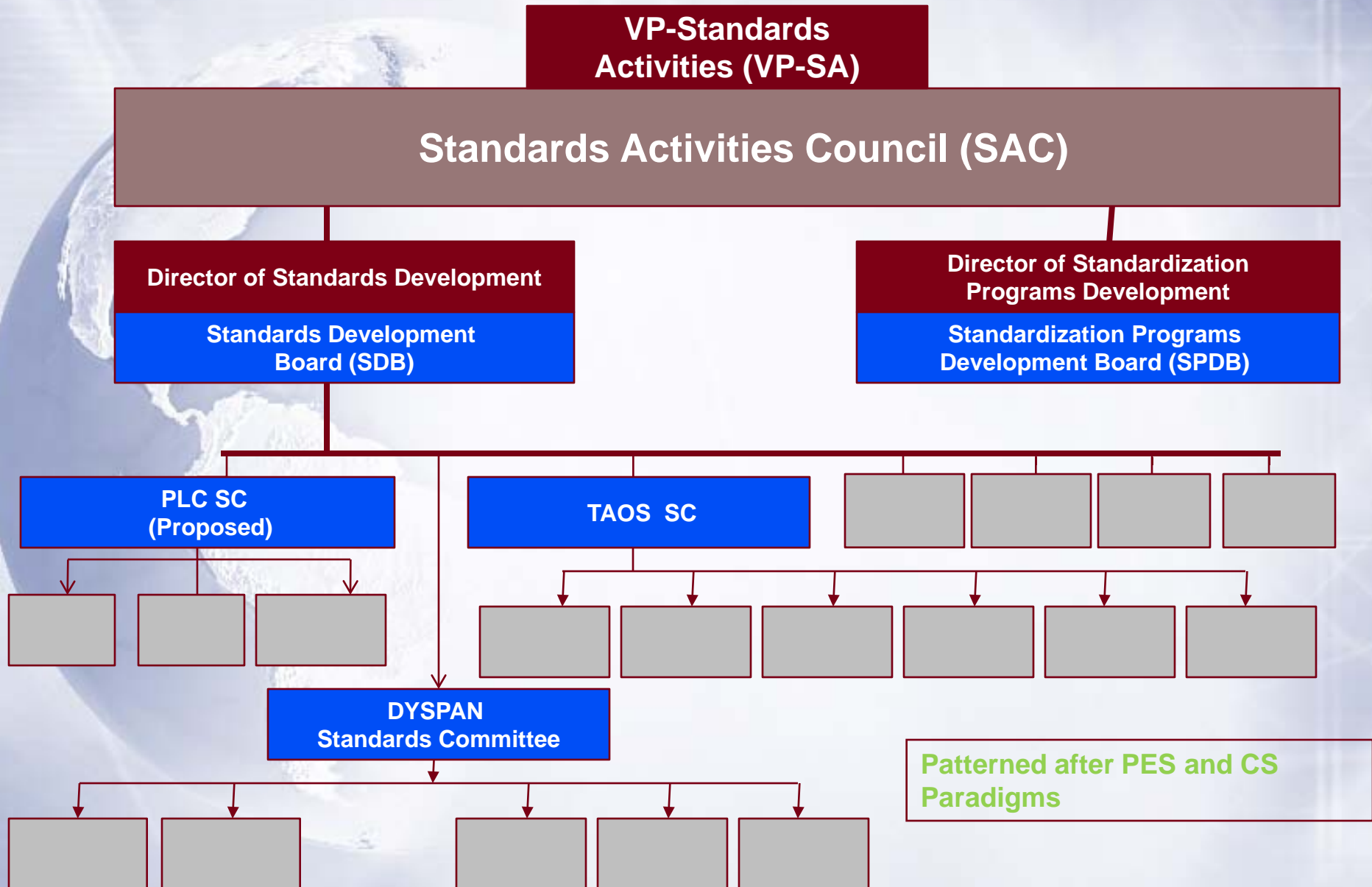
Ad Hoc & Sensor Networks	Information Infrastructure & Networking
Cognitive Networks	Internet
Communications & Information Security	Multimedia Communications
Communications Quality & Reliability	Network Operations and Management
Communications Software	Optical Networking
Communications Switching & Routing	Power Line Communications
Communications Systems Integration & Modeling	Radio Communications
Communication Theory	Satellite and Space Communications
Computer Communications	Signal Processing & Communications
Data Storage	Electronics
e-Health	Tactical Communications & Operations.
High-Speed Networking	Transmission, Access & Optical Systems
	Wireless Communications

PLUS: Directors of **Education** and **Standards** (*since 2005*)

ComSoc Standards, Spring 2011



ComSoc BoG-Approved Restructuring – Beginning 2012



ComSoc Standards - Organization

- **TAOS – Transmission Access and Optical Systems**
 - Series of predominantly older analog telephony and related technology standards
- **PLC – Power Line Communications**
 - Broadband over power line
 - Narrowband over power line
 - Electromagnetic compatibility
- **DySPAN – Dynamic Spectrum Access Networks**
 - Growing family of standards and new projects
- **Potpouri**
 - A wide variety of miscellaneous, significant projects, e.g:
 - Service Networks and Networks Interoperability
 - NanoCommunications

ComSoc Standards – A Potpourri of Several Notable Standards and Projects

- **Power Line Communications (PLC)**
 - 1901: “IEEE Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications”
 - 1775: “IEEE Standard for Powerline Communication Equipment Electromagnetic Compatibility (EMC) Requirements – Testing and Measurement Methods
 - P1901.2: “Standard for Low Frequency (less than 500 kHz) Narrow Band Power Line Communications for Smart Grid Applications”
- **Service and Networks Interoperability**
 - P1903: “Standard for the Functional Architecture of Next Generation Service Overlay Networks” (NGSON)
 - P1904.1: “Service Interoperability over Ethernet Passive Optical Networks” (SIEPON)
 - P1905.1: “Convergent Digital Home Network for Heterogeneous Technologies”

ComSoc Standards – A Potpourri of Several Notable Standards and Projects (Continued)

- **DySPAN – Dynamic Spectrum Access Networks**
 - 1900.4: “IEEE Standard for Architectural Building Blocks Enabling Network-Device Distributed Decision Making for Optimal Radio Resource Usage in Heterogeneous Wireless Access Networks” (Just superseded by 1900.4a – amendment with White Space Frequency Bands”)
- **Other**
 - P1906.1: “Recommended Practice for Nanoscale and Molecular Communication Framework”



“I would have written you a shorter letter but I ran out of time.”

Mark Twain

“My presentation would have been shorter but I have too much to cover”

Curtis Siller



Σας ευχαριστώ για
την προσοχή σας.