



**Communications Standards:  
IEEE Standards Association and “ComSoc” Perspectives**

**16<sup>th</sup> IEEE Symposium on Computers and  
Communications**

**Curtis A. Siller, Jr.**

**c.siller@comsoc.org**

**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)*

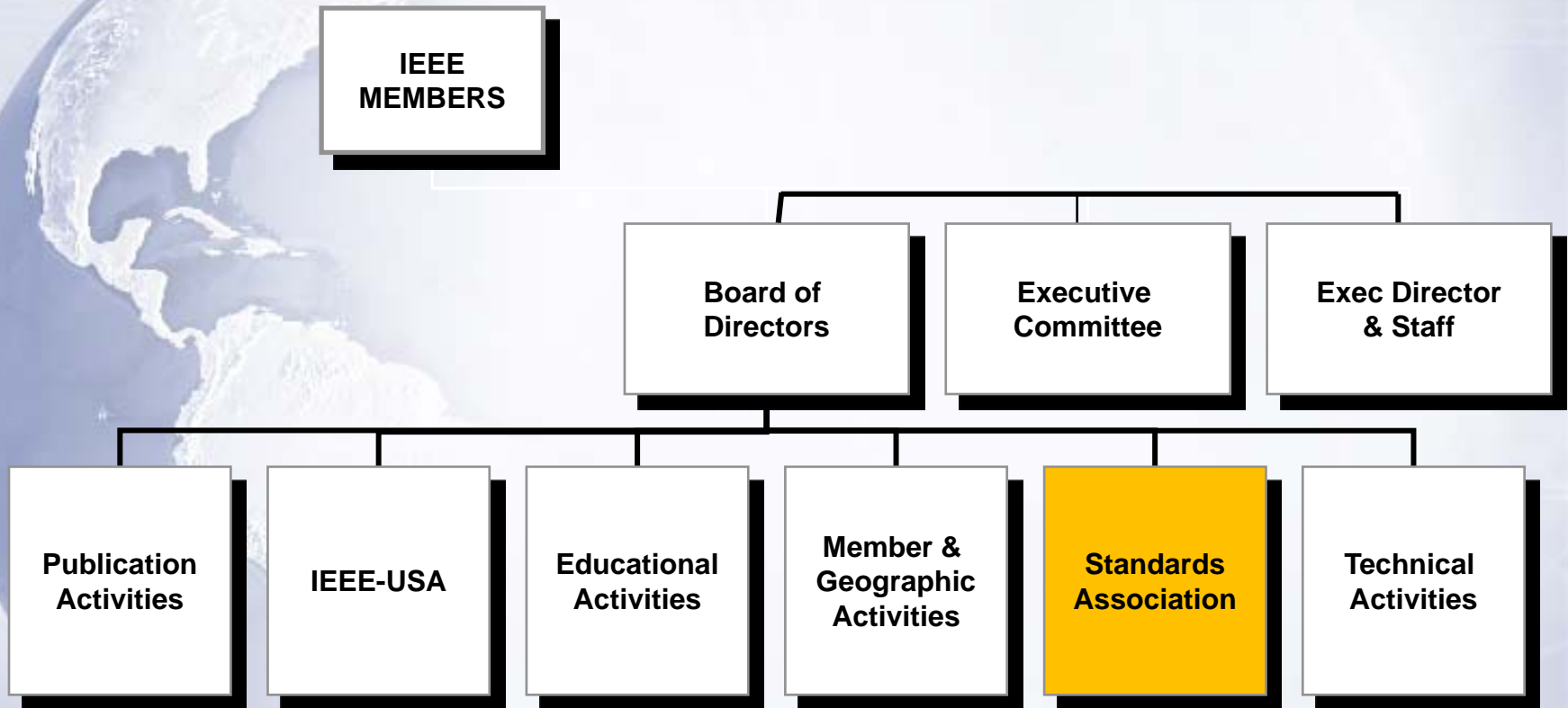
Only 44% outside North America



# Keynote Overview

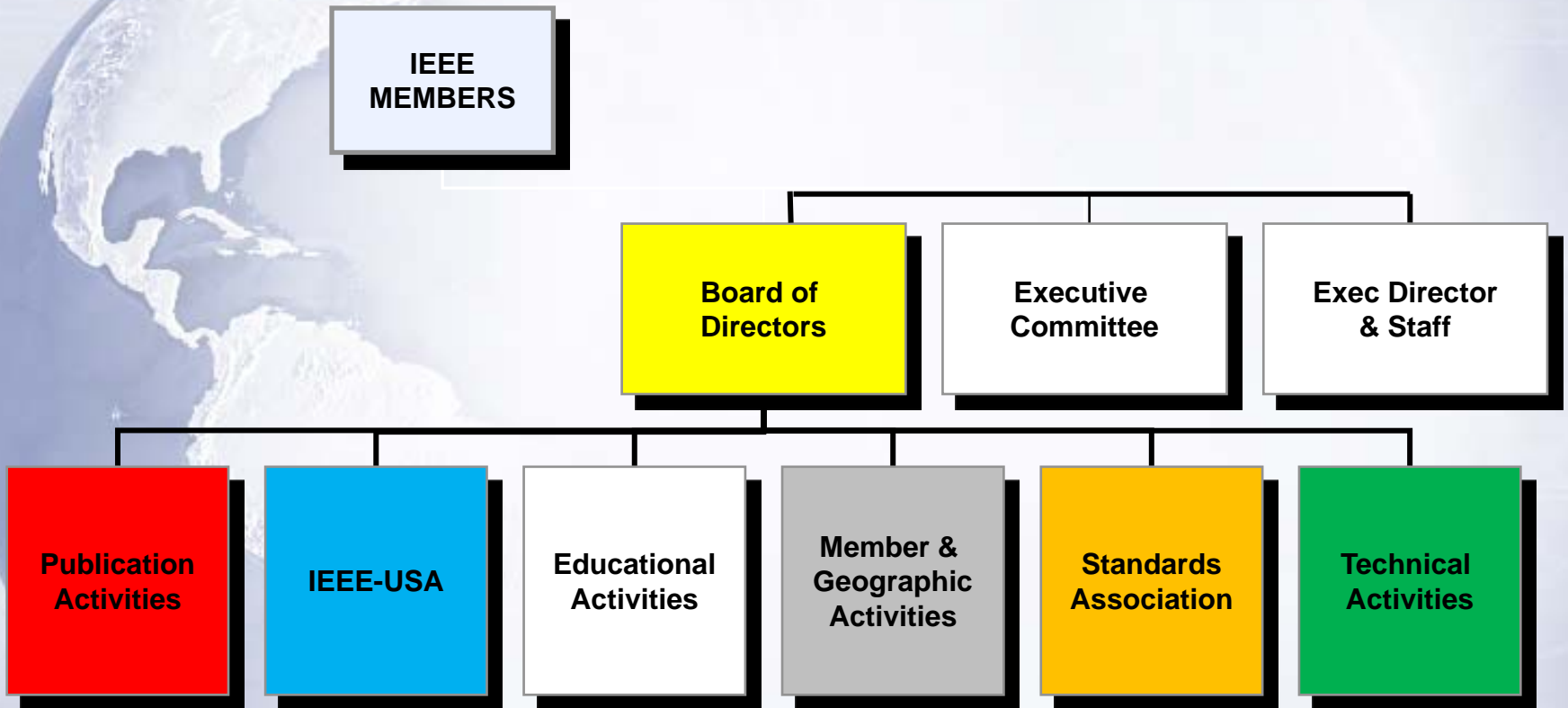
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# Where IEEE-SA Fits Within the IEEE



# 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

**EU** - Office, Outreach to industry associations and standardization stakeholders, Govt relations activities

**CANADA:** MOU, Governance meetings, IEEE Sections Congress 2008

**SWITZERLAND:** Outreaches to SDOs, Workshops

**MALTA, FRANCE, BRUSSELS...**: IPR and Stds. Workshop/speakers

**CHINA:** Office, MOUs, Standards Workshops, Technical Workshops, University Outreach, Industry Outreaches, Governance mtng

**UK:** University outreach, Region 8 Mtng

**GERMANY:** Governance meetings, SDO and industry Outreach, Standards Workshop

**KOREA:** Technical Workshops, Governance meeting, MOUs, Commercial agreement,

**CZECH REPUBLIC:** Standards Meetings

**TUNISIA:** Governance mtng, MOU, Conference, Standards Workshop, Industry outreach

**BAHRAIN:** Standards Workshop

**INDIA:** Office, Standards Interest Group, Standards Workshops, Technical Workshops, University Outreaches, Governance mtng

**JAPAN:** Office, MOUs, Standards Workshops, commercial agreements, Governance mtng

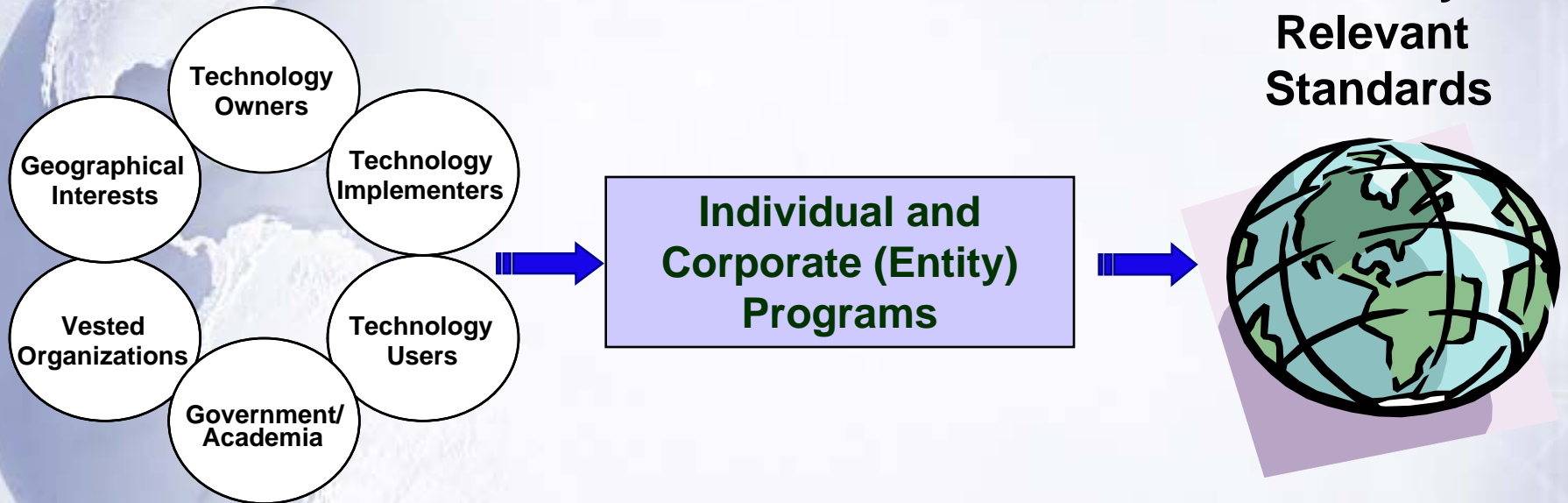
**SOUTH AFRICA:** Workshop, MOU

**BRAZIL:** Commercial agreement, Technical workshop support, Standards meetings & outreach

**ISRAEL:** MOU, Standards meetings

**Other planned activities for 2011:** Governance meetings with outreach/workshops in **France** and **Korea**, Industry & SDO outreach in **UK**, Industry outreach, govt relations, and workshop participation in **Brussels**, speaker at AFRICON in **Zambia**, Student Paper Competitions in **Egypt** & **UK**, Standards meetings & potential outreaches in **Australia**...

# IEEE-SA Supports Standards-Development *Constituents*



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

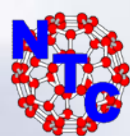
# IEEE Standards Are Pervasive

*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

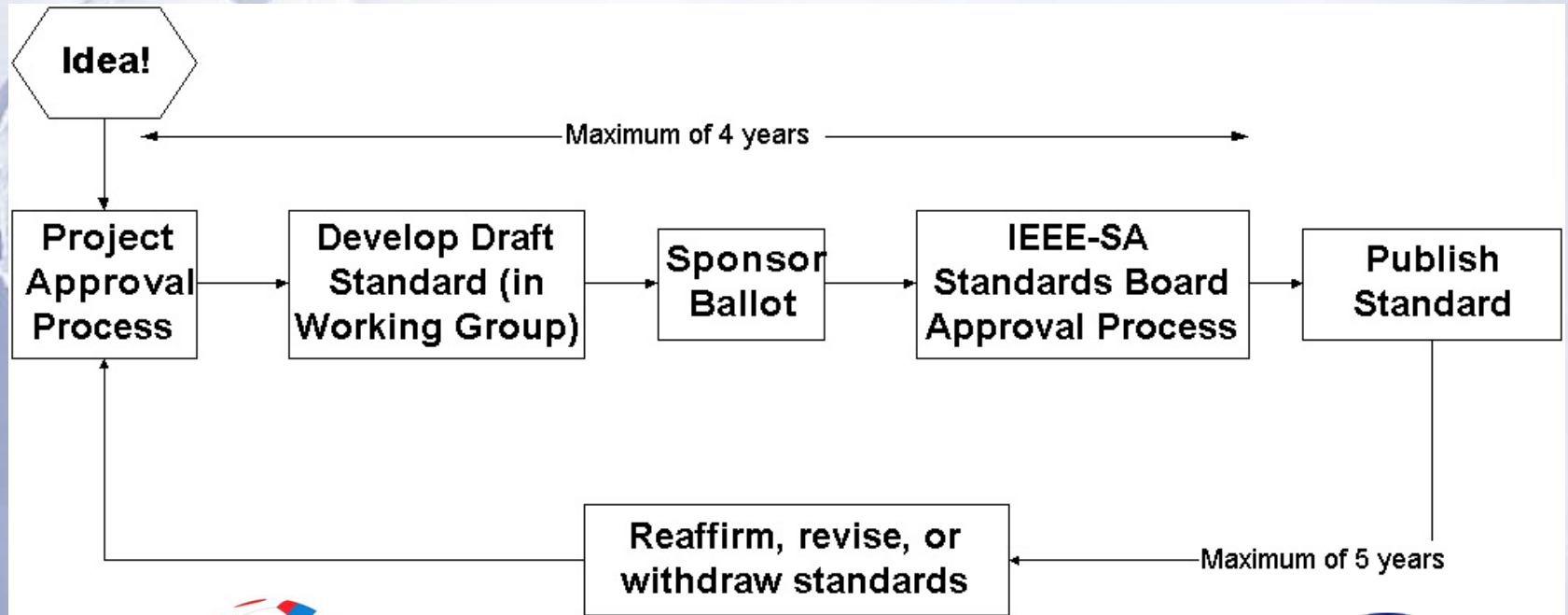


# **IEEE Standards Development: Develop Draft Standard**





# 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](mailto:t.decourcelle@ieee.org)
- Jennie M. Steinhagen [j.steinhagen@ieee.org](mailto: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

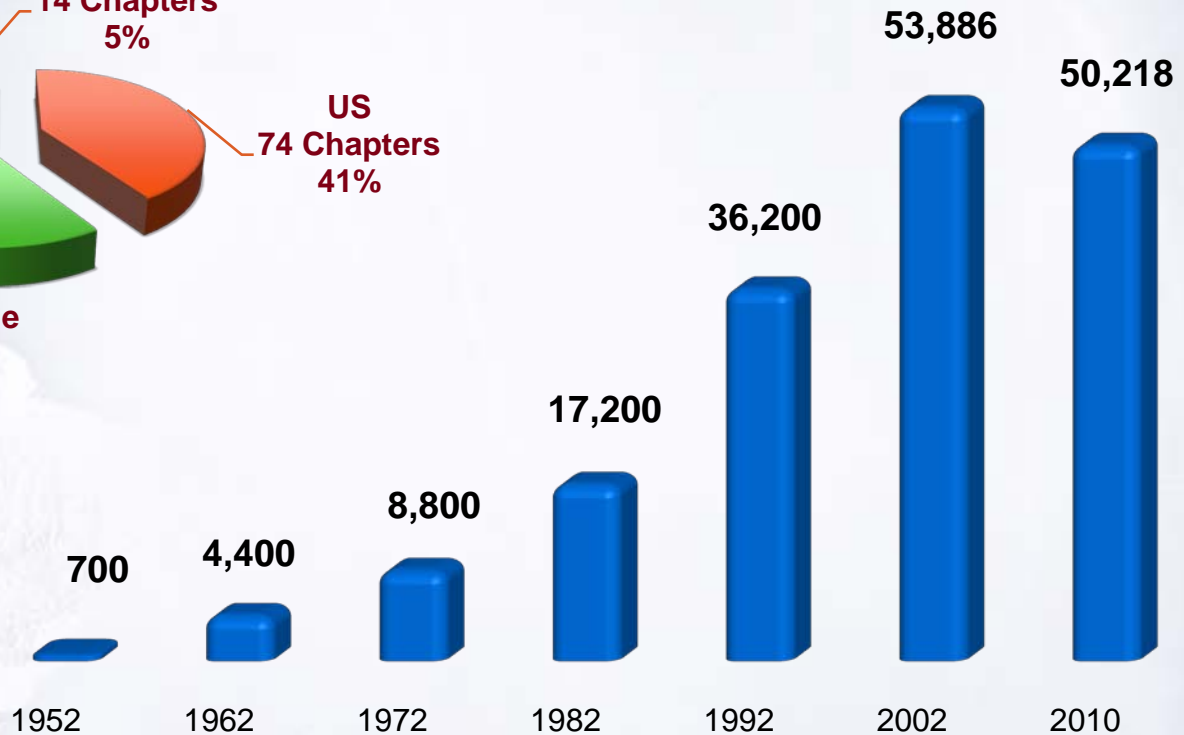
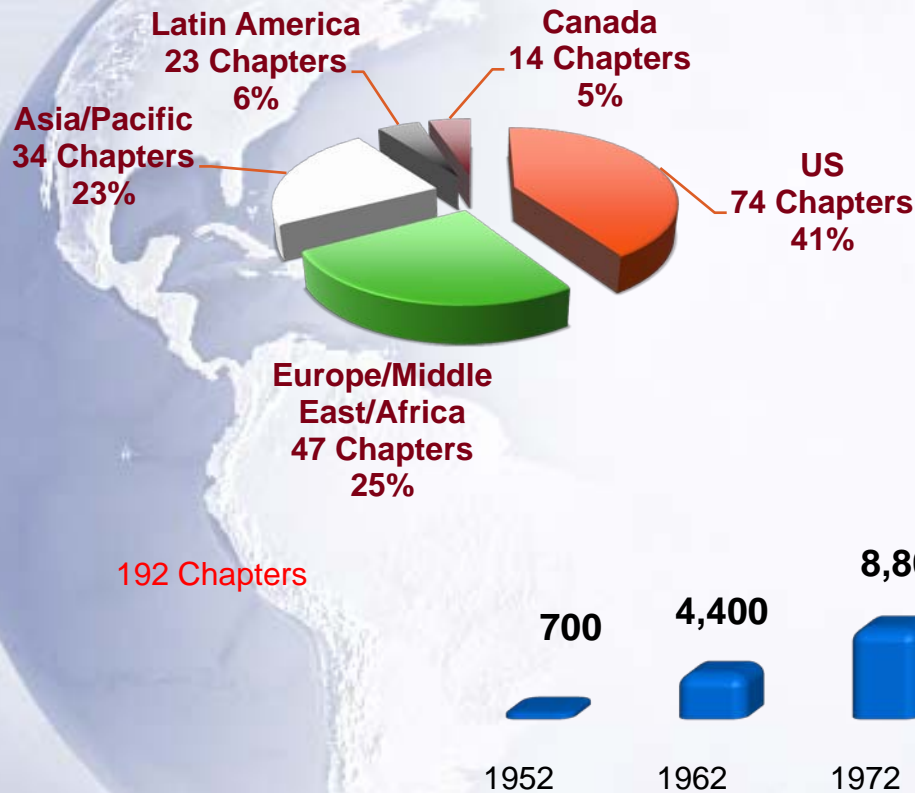
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# IEEE Communications Society – Where the Action Is!

## 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 2<sup>nd</sup>.
- **Chapters**
  - 192

# ComSoc Membership



- 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

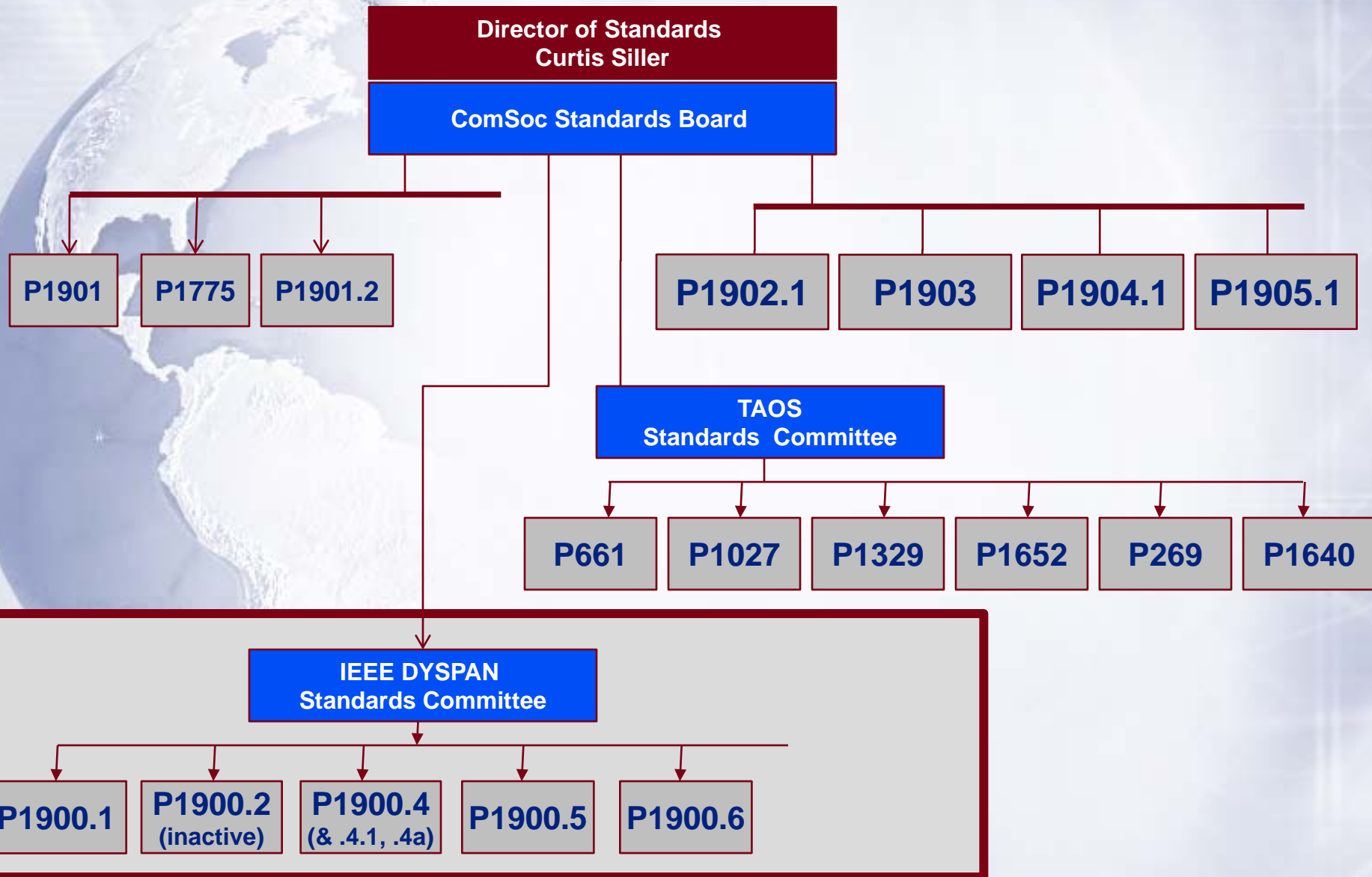
## VP Technical Activities (1/4; 2011)

### Technical Committees:

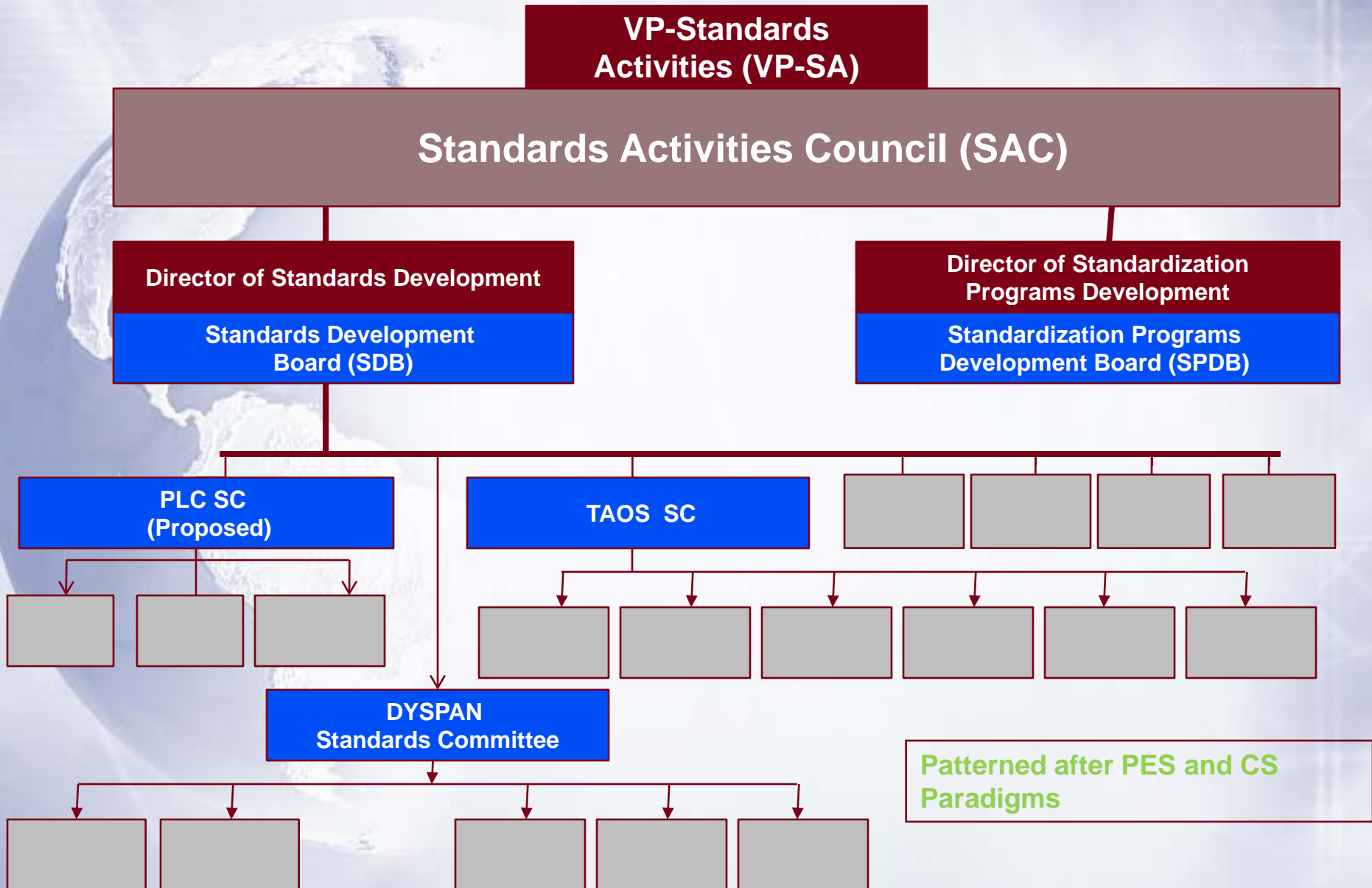
Ad Hoc & Sensor Networks	Information Infrastructure & Networking
Cognitive Networks	Internet
Communications & Information Security	Multimedia Communications
Communications Quality & Reliability	Network Operations and Management
Communications Software	Optical Networking
Communications Switching & Routing	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.