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

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEMBERS</td>
<td>400,000+</td>
</tr>
<tr>
<td>COUNTRIES</td>
<td>&gt;160</td>
</tr>
<tr>
<td>CONFERENCES</td>
<td>1000+ per year</td>
</tr>
<tr>
<td>PUBLICATIONS</td>
<td>Over 30% of world’s electro-technical literature</td>
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<tr>
<td>STANDARDS</td>
<td>Over 900 active standards; Over 500 active projects</td>
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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

• IEEE

• IEEE Standards Association
  The Standards Process

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Where IEEE-SA Fits Within the IEEE
Where IEEE-SA Fits Within the IEEE
Where Curtis Fits Within IEEE

IEEE MEMBERS

Board of Directors

Executive Committee

Exec Director & Staff

Publication Activities

IEEE-USA

Educational Activities

Member & Geographic Activities

Standards Association

Technical Activities
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

CANADA: MOU, Governance meetings, IEEE Sections Congress 2008

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

SWITZERLAND: Outreaches to SDOs, Workshops

UK: University outreach, Region 8 Mtng

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

ISRAEL: MOU, Standards meetings

INDIA: Office, Standards Workshops, University Outreach, Governance mtng, SDO and industry Outreach, Standards Workshop

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

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

JAPAN: Office, MOUs, Standards Workshop, Governance mtng

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

SWITZERLAND: Outreaches to SDOs, Workshops

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

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

CZECH REPUBLIC: Standards Meetings

BAHRAIN: Standards Workshop

SOUTH AFRICA: Workshop, MOU

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 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

- Idea!
- Project Approval Process
- Develop Draft Standard (in Working Group)
- Sponsor Ballot
- IEEE-SA Standards Board Approval Process
- Publish Standard
- Reaffirm, revise, or withdraw standards

Maximum of 4 years

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:
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Jennie M. Steinhagen j.steinhausen@ieee.org
IEEE Standards Association Development Groups

Generic Hierarchical Structure

ComSoc Standards Board

Working Groups and Study Groups
Ideas for Getting Started:
IEEE Communications Society
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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\textsuperscript{nd}.

• **Chapters**
  • 192
• 1952 IRE Professional Group on Communications Systems (PGCS)
• 1964 IEEE Group on Communications Technology (ComTech) – 4,400
• 1972 IEEE Communications Society (ComSoc) – 8,800
Members by Grade

- Members 62%
- Senior Members 10%
- Graduate Students 10%
- Fellows 2%
- Associates 4%
- Students 10%
- Affiliates 1%

Member Employment

- Private Industry 45%
- Educational Institutions 19%
- Students 14%
- Self-Employed/Consulting 8%
- Public/Gov't 8%
- "All Other" includes retired and unemployed. 6%
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
Cognitive Networks
Communications & Information Security
Communications Quality & Reliability
Communications Software
Communications Switching & Routing
Communications Systems Integration & Modeling
Communication Theory
Computer Communications
Data Storage
e-Health
High-Speed Networking

Information Infrastructure & Networking
Internet
Multimedia Communications
Network Operations and Management
Optical Networking
Power Line Communications
Radio Communications
Satellite and Space Communications
Signal Processing & Communications
Electronics
Tactical Communications & Operations
Transmission, Access & Optical Systems
Wireless Communications

PLUS: Directors of Education and Standards (since 2005)
ComSoc BoG-Approved Restructuring – Beginning 2012

VP-standards Activities (VP-SA)

Standards Activities Council (SAC)

Director of Standards Development

Standards Development Board (SDB)

Director of Standardization Programs Development

Standardization Programs Development Board (SPDB)

PLC SC (Proposed)

TAOS SC

DYSPAN Standards Committee

Patterned after PES and CS Paradigms
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
- **Potpourri**
  - 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)**
  - 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.