



The world's leading professional association for the advancement of technology

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About Us | Membership | Publications | Conferences | Standards | Careers | Education | Volunteers | Societies | Geographic Activities

IEEE



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An overview of the world's leading professional association for the advancement of technology

IEEE News

Intel Chairman Emeritus Gordon Moore to Receive 2008 IEEE Medal of Honor
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IEEE Women in Engineering Magazine December 2008
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Technical Field Award Nominations Deadline 31 January
Read More

IEEE Engineering Management Society Transitions to Technology Management Council

Conferences, Meetings and Events
Find out about upcoming conferences and society, section & chapter activities in your local area.

Education
Register for [online learning](#) programs like [IEEE Expert Now](#) and [Education Partners](#). Or find other [IEEE education activities](#) including [accreditation](#).
Learn More

Standards
Learn about the latest standards

IEEE Power & Energy Library
A collection of information on innovative organizations.
Learn More

IEEE/IEE Electronic Library
The complete collection for corporations and institutions.
Learn More
Organizational Trial

For Members Only: IEEE Member Digital Library
Every article at your desk for a monthly fee.
Learn More

What do you want to do?

- Renew membership
- Join an IEEE society
- Set up IEEE Web account
- Log in to My Account
- Update my IEEE standard
- Change my e-mail alias
- View IEEE TV
- Obtain member insurance
- Locate a job
- Find student resources
- Take a course



IEEE Mission. . .

**Foster Technological
Innovation And
Excellence For The
Benefit Of Humanity**

The Envisioned Future. . .

Be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions.

IEEE -- Fostering Technological Innovation And Excellence. . . Core Values

- **Service to humanity**
- **Global focus**
- **Trust and respect**
- **Growth and nurturing of the profession**
- **Collaboration and community building**
- **Professionalism**
- **Intellectual activity**
- **Peer-reviewed**

IEEE -- Fostering Technological Innovation And Excellence. . . Core Values

- **Service to humanity:** leveraging technology and engineering to benefit human welfare; promoting public awareness and understanding of the engineering profession.
- **Global focus:** supporting and embracing the global nature of and need for technical work and engineering solutions.
- **Trust and respect:** promoting a culture where contributions at all levels are valued; encouraging member driven, volunteer-led, knowledge-based projects; building effective volunteer/staff partnerships.

IEEE -- Fostering Technological Innovation And Excellence. . . Core Values

- **Growth and nurturing of the profession:** encouraging education as a fundamental activity of engineers, scientists, and technologists at all levels and at all times; ensuring a pipeline of students to preserve the profession.
- **Collaboration and community building:** cultivating active, vibrant, and honest exchange among cross-disciplinary and interdisciplinary global communities of technical professionals.

IEEE -- Fostering Technological Innovation And Excellence. . . Core Values

- **Professionalism:** creating a world in which engineers and scientists are respected for their exemplary ethical behavior and volunteerism.
- **Intellectual activity:** forward-thinking; nurturing new and existing science and technology.
- **Peer-reviewed:** using unbiased information to enhance the quality of life for all people.

Fostering Technological Innovation And Excellence – Then and Now

AIEE (1884)

- **Founded by American industrialists to develop a skilled workforce; prepare standards for U.S. electrical industries**

IRE (1912)

- **Founded by radio electronics pioneers**
- **Did not feel fully at home in electric power-oriented AIEE**
- **Differed from the AIEE - positioned at inception to be global**

**Institute of Electrical and Electronics Engineers (1963)
from AIEE & IRE**

Fostering Technological Innovation And Excellence – Then and Now

**IEEE -- World's largest professional society
dedicated to the advancement of technology**

- Over 370,000 members**
- Membership includes more than 80,000 students**
- Live & work in over 160 countries**
- Annually sponsors and cosponsors more than 500 conferences worldwide**
- Publishes over 30% of the world's literature in electrical and electronics engineering and computing**
- Offers over 900 active industry standards**

IEEE Organization

Grouped into geographic areas reflecting where we live and work ...

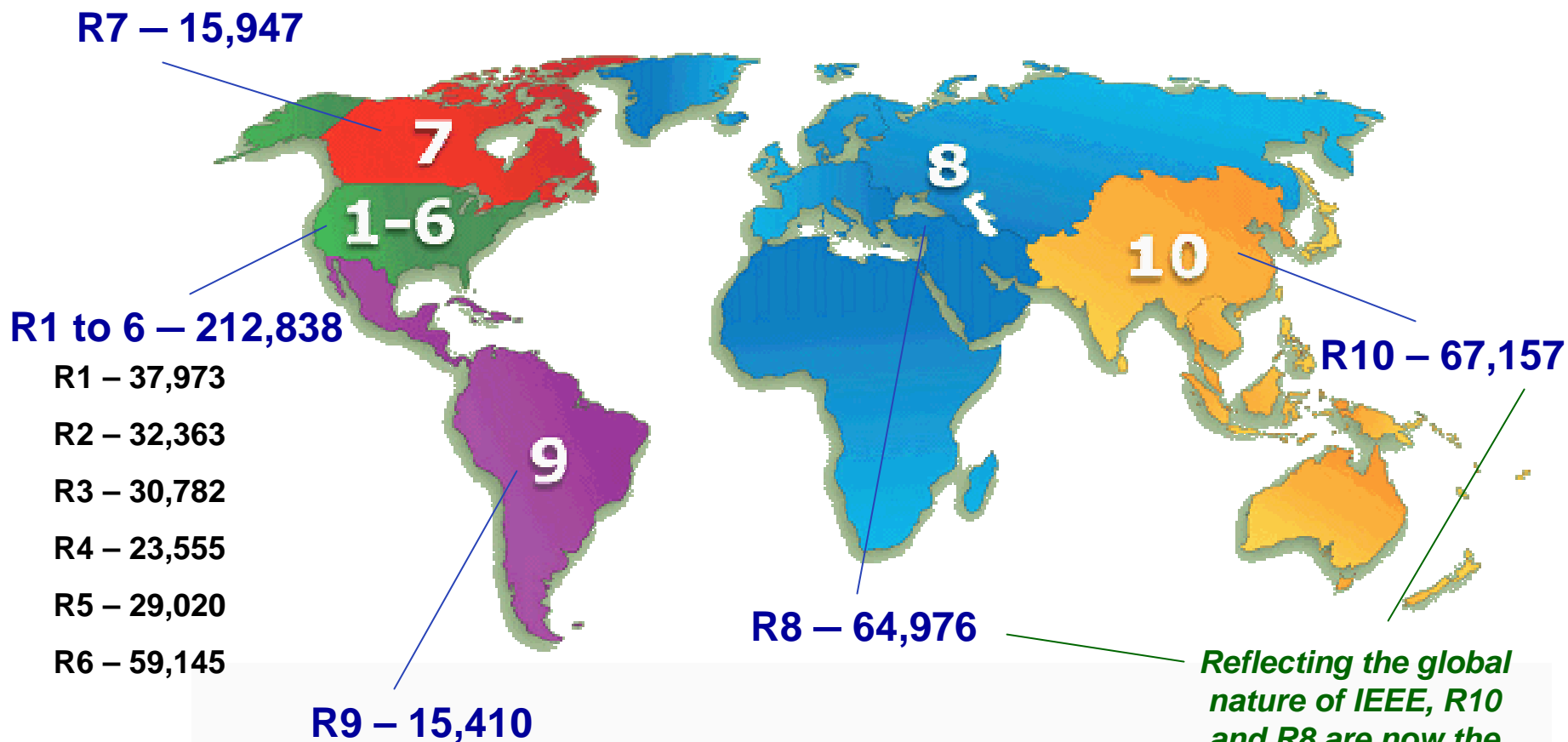
- **10 Geographic Regions**
 - 324 Regional Sections
 - 1,616 Student Branches

...and technical areas based on our fields and interests.

- **38 Societies and 6 Technical Councils**
 - 1,790 Chapters

IEEE Membership By Region*

TOTAL MEMBERSHIP – 376,328



R1 to 6 – 212,838

R1 – 37,973

R2 – 32,363

R3 – 30,782

R4 – 23,555

R5 – 29,020

R6 – 59,145

R9 – 15,410

R8 – 64,976

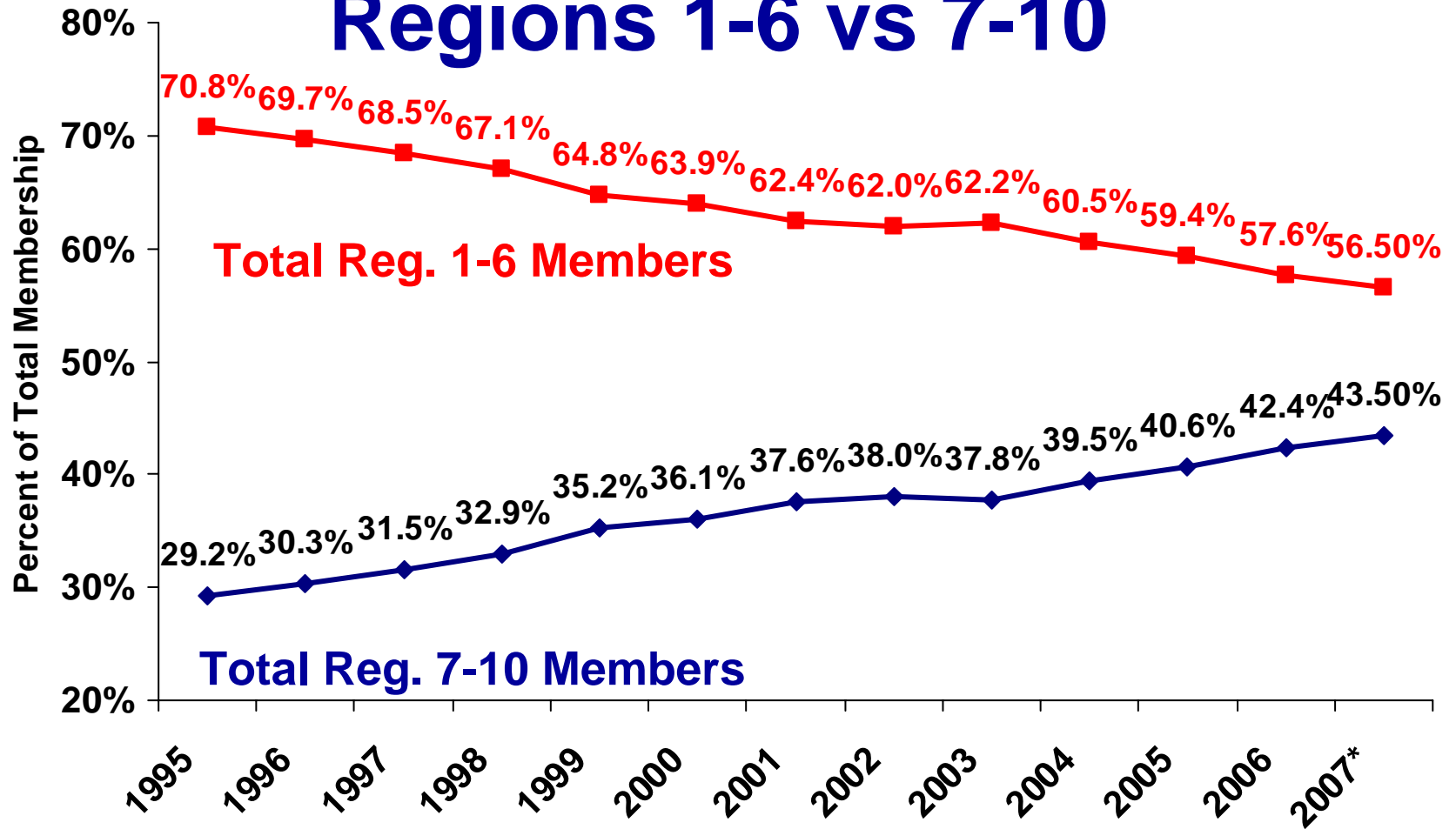
R10 – 67,157

Reflecting the global nature of IEEE, R10 and R8 are now the two largest IEEE Regions

*2007 Preliminary

IEEE Membership*

Regions 1-6 vs 7-10



*2007 Preliminary

IEEE Societies & Councils

- **38 Societies and 6 Technical Councils**
- **Bringing members together with similar interests**
- **Sponsoring conferences, workshops tutorials, seminars, etc**
- **Developing publications: Journals, Magazines, Newsletters**
- **Recognizing member accomplishments**

IEEE Societies & Councils

- Aerospace & Electronic Systems
- Antennas & Propagation
- Broadcast Technology
- Circuits & Systems
- Communications
- Components, Packaging & Manufacturing Technology
- Computational Intelligence
- Computer
- Consumer Electronics
- Control Systems
- Dielectrics & Electrical Insulation
- Education
- Electromagnetic Compatibility
- Electron Devices
- Engineering in Medicine & Biology
- Geoscience & Remote Sensing
- Industrial Electronics
- Industry Applications
- Information Theory
- Instrumentation & Measurement
- Intelligent Transportation Systems

IEEE Societies & Councils

- Lasers & Electro-Optics
- Magnetics
- Microwave Theory & Techniques
- Nuclear & Plasma Sciences
- Oceanic Engineering
- Power Electronics
- Power Engineering
- Product Safety Engineering
- Professional Communication
- Reliability
- Robotics & Automation
- Signal Processing
- Social Implications of Tech.
- Solid-State Circuits
- Systems, Man, & Cybernetics
- Ultrasonics, Ferroelectrics & Frequency Control
- Vehicular Technology

6 Technical Councils

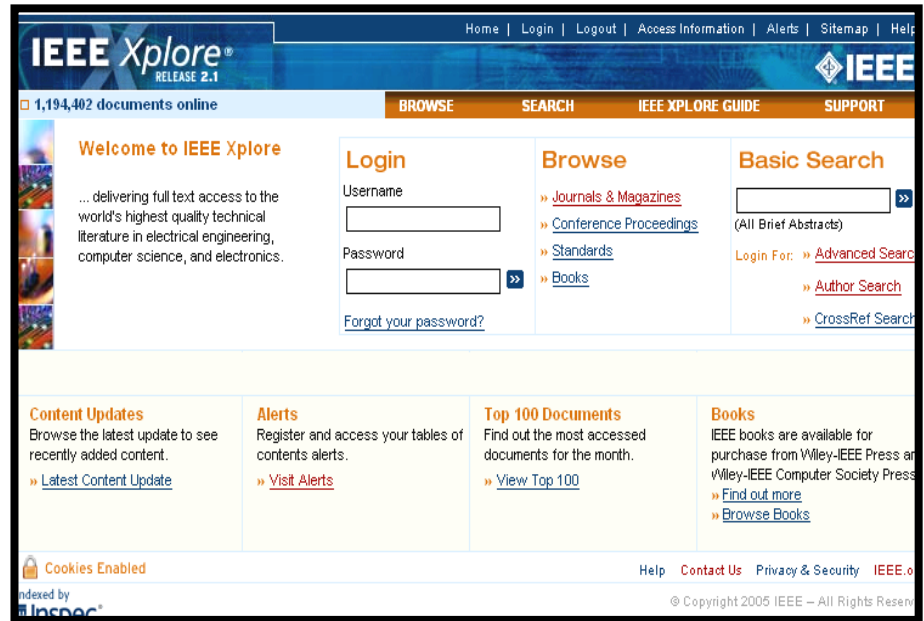
- Electronic Design Automation
- Nanotechnology
- Sensors
- Super Conductivity
- Systems
- Technology Management

New Technology Working Groups

- **Biometrics**
- **Digital Intellectual Property**
- **Earth Observation**
- **Power and Alternative Energy Technologies**
- **RFID**
- **Biotechnology and Bioengineering**
- **Distributed Intelligent Networks and Systems**
- **Organic Electronics**
- **Portable Information Devices**

IEEE Publications

- 132 magazines, journals and transactions
- IEEE produces 18 of the 20 top-cited publications in electrical and electronics engineering
- IEEE offers full-text access to over 100,000 research papers from more than 700 IEEE-related conference proceedings annually
- More than 1.5 million documents delivered online through *IEEE Xplore®* digital library
- Average IEEE Xplore use: Over 6 million downloads a month
 - **Now includes Expert Now Web Courses, IEEE Standards Online, Draft IEEE Standards**



IEEE Spectrum Adds Awards, Electronic Editions

- ABM's* Grand Neal Award won for articles on Iraq's need for stable power and communications
 - Executive Editor Glenn Zorpette's enterprising on-the-scene reporting wins him the McAllister fellowship, too
- Digital facsimile edition launched in July gains over 40,000 member subscribers for 2008
 - Complete electronic replica of print edition is delivered faster than print
- New improved website launched in September with online features not available in print
 - Editors provide MP3 Audio downloads, videos, blogs
 - Advertisers sponsor webinars

IEEE Publications

IEEE *SPECTRUM* Magazine In print and online

New Online Features:

- Spectrum Radio
- Webcasts
- RSS Feeds
- Blogs

The screenshot shows the IEEE Spectrum online magazine website. At the top, there is a search bar and navigation links for SPECTRUM, IEEE Xplore digital library, and SUBMIT. Below this is a navigation menu with tabs for HOME, MAGAZINE, BIO, COMPUTER, CONSUMER, ENERGY, SEMICON, TELECOM, and TRANSPORT. A secondary navigation bar includes links for Jan 2008 INDEX, PAST ISSUES, a dropdown menu for Jan 2008, JOIN IEEE, NEWSLETTERS, EVENTS, JOBS, EXTRAS, and an RSS icon. The main content area features the Engineering Village logo and the tagline "New and improved for 2008!". There are three main sections: 1. A featured article titled "Winner: Sprint's Broadband Gamble" with a sub-headline "A new cellular service will sell high-speed data access instead of phones and phone calls" and a "Read more..." link. 2. A "SPECTRUM VIDEO" section with a video player showing a construction site and a caption "Flood or Hurricane Protection?: The New Orleans Levee System and Hurricane Katrina". 3. A "WHAT'S NEW" section with three items: "The Gray Areas of Search-Engine Law", "Phase-Change Materials Could Boost Reconfigurable Chips", and "Taking Apart the 700-MHz Wireless Spectrum Auction". At the bottom left, there is a call to action: "WANT TO JOIN IEEE? FIND OUT IF YOU QUALIFY»". At the bottom right, there is a red banner for "THE SANDBOX IEEE SPECTRUM'S BLOG ON GAMES."

New Publications Services Make Research Easier

- **IEEE Member Digital Library**
 - **Subscribers can download, save and print 25 articles/mo.**
- **IEEE Enterprise for smaller businesses**
- **IEEE Power Engineering Library**
- **Google and Yahoo searches of IEEE *Xplore***
- **CrossRef links to other journals**
- **Online tools make it easier and faster to submit, review and publish papers with IEEE**

Conferences

- IEEE annually sponsors and cosponsors more than 500 conferences worldwide
- Involved in the technical programming of over 250 additional conferences.
- Approximately 150,000 attendees overall
- First-hand information on the latest developments from leaders in their fields
- More than 3,000 annual technical meetings, and other local events
- Opportunities to meet leaders in technical interest areas
- Searchable IEEE conference database

The IEEE Standards Association

A World Leader in Standards Development Fostering Technological Innovation

- The leading developer of global industry standards in a broad-range of industries, including: **Power and Energy - Biomedical and Healthcare - Information Technology – Telecommunications – Transportation – Nanotechnology - Information Assurance – Battery Technology**
- IEEE-SA offers an established standards development program that features **balance, openness, due process, and consensus.**

The IEEE Standards Association

<http://standards.ieee.org/>

- In addition to the prominent 802® Standards IEEE-SA has more than 400 standards in development.
- Provides a complete portfolio of standards development programs, products, and services, including individual and entity membership, working group support services, governance, publishing, and more.
- Enhanced global adoption of IEEE standards through partnerships with the IEC, ISO, and ITU.

Continuing Education

IEEE Expert Now

- More than 65 one-hour interactive online courses in IEEE's technical areas of interest
- Subscriptions available for Corporate, University, Government and Individual Members
- Earn Continuing Education Units (CEUs) and Professional Development Hours (PDHs)

IEEE Education Partners Program

- Online courses offered from university and corporate institutions at a discount

The screenshot shows a web browser window titled "Introduction to Fiber Optics - Microsoft Internet Explorer provided by IEEE". The page features a navigation menu with the following items:

- Introduction
- Technology
- Fiber
- Transmitters
- Receivers
- Applications
- Backbone networks
- Broadband access
- Future directions

The course content is displayed in a slide format. The current slide is titled "Wavelength Division Multiplexing (WDM)" and includes the following text:

- Two (or more) separate channels over the same fiber by using two (or more) different wavelengths
- Optical filters select wavelength at the receivers
- Optical amplifiers used at intermediate locations

The diagram illustrates the WDM process. It shows multiple input channels (channel 1 to channel n) entering a multiplexer. Each channel is transmitted through a fiber optic cable. At the receiving end, a demultiplexer separates the channels. Each channel passes through an optical filter (Filter λ_1 to Filter λ_n) and is then received by a corresponding receiver (RX λ_1 to RX λ_n). The diagram also shows optical amplifiers used at intermediate locations.

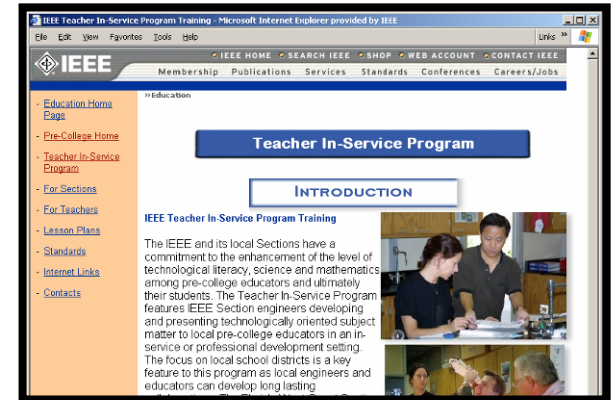
Certification

- IEEE Computer Society Certified Software Development Professional Program (CSDP)
 - Certification for software developers with at least 5 years experience
 - Under development – an entry level certification for recent graduates to assess their expertise vs. the body of knowledge
- IEEE Communications Society is developing the Wireless Communications Engineering Technology Certification Program
- IEEE is currently evaluating other certification opportunities in the areas of systems and biometrics

Building the Pipeline of Professionals

IEEE Pre-University Programs connect engineers and educators

Pre-University Teacher In-Service Program (TISP) for Sections



- **Features IEEE volunteers developing and presenting technical subject matter to pre-university educators in a professional development setting**
- **Over 325 IEEE volunteers were trained in 2007, representing 16 countries**
- **42 lesson plans aligned with education standards are available**
- **Overall, more than 1800 teachers have participated in a TISP session led by an IEEE volunteer - impacting over 180,000 students.**

TryEngineering.org

A Web site for Engineering and Engineering Education for Counselors, Teachers, Parents and Students

A joint project of IEEE, IBM and the New York Hall of Science.

Explore Engineering

Opportunities

Find a University

Lesson Plans

The screenshot shows the homepage of TryEngineering.org. At the top, there is a search bar and a navigation menu with links for COUNSELORS, PARENTS, STUDENTS, and TEACHERS. Below the navigation, there are several main sections: 'Welcome to TryEngineering.org' with a brief description of the site's purpose; 'Ask an Expert' featuring a photo of a woman and text about asking questions; and a list of resources including 'Engineering Life Profiles', 'Become an Engineer', 'University Finder', 'Lesson Plans', 'Ask a Question', and 'Play Games'. At the bottom, there are logos for IBM, IEEE, tryscience, Sloan Career Cornerstone Center, SAE International, and JETS. A footer contains links for Home, About, Contact Us, Links, Sitemap, and Disclaimer.

Ask an Expert

Ask an Engineer

Ask an Undergrad Student

Play Games



23 countries now available in the “Find a University” tool at TryEngineering.org

- Global search tool Launched in June 2006
- Database now includes Argentina, Australia, Belgium, Brazil, Canada, France, Germany, India, Japan, Korea, Malaysia, Mexico, New Zealand, Pakistan, Portugal, Russia, Singapore, South Africa, Switzerland, Turkey, the United Kingdom and the US.
- Expanded search feature allows users to find accredited programs based on locale, tuition, and size of the student body of the academic institution.
- Plans to add more countries in 2008
- Available in German, French, Chinese, Japanese, Russian, Spanish and English versions.





Accreditation.org

- A new IEEE portal devoted to accreditation of academic programs in engineering, computing and technology
- Provides an overview of accreditation
- Lists accrediting bodies worldwide
 - Lists all the programs they accredit
 - Provides links and contact information
 - Provides accrediting body search by country

IEEE EAB

- *Responsible for carrying out accreditation process for U.S engineering, engineering technology programs*
- *Also participates in international accreditation activities*



Accreditation.org

- **Provides information on accords and mutual-recognition agreements**
 - Including original text and interpretation
- **Allows search of accredited programs**
 - Similar to “University Search” on TryEngineering.org
- **Provides links to articles and reviews on accreditation**

Access to Information

IEEE.org Web site

- “What do you want to do?” links for easy access to popular content
- 10 portals organize major content areas
- 24/7 access to IEEE products, services and information
- Ongoing usability testing to inform content and design updates

The screenshot shows the IEEE.org website homepage. At the top, there is the IEEE logo and tagline: "The world's leading professional association for the advancement of technology". Navigation links include Shop, Join, myIEEE, Contact Us, Sitemap, and IEEE Xplore. A search bar is present with a "Search" button. Below the navigation is a horizontal menu with 10 categories: About Us, Membership, Publications, Conferences, Standards, Careers, Education, Volunteers, Societies, and Geographic Activities. A "Text size" selector is on the right. The main content area features a banner with the text "we are knowledge" and "Join IEEE", "Member Benefits", and "Login to myIEEE". To the right, there is a "Find an article in the IEEE Xplore digital library" search box. Below the banner is a grid of four content blocks: "IEEE News" (President-Elect Leah Jamieson Named Dean of Purdue University College of Engineering), "Inside IEEE" (Conferences, Meetings and Events), "Product Highlights" (IEEE Power & Energy Library), and "What do you want to do?" (a list of actions like Renew, Find IEEE services, Web account, etc.).

Access to Information - IEEE.tv Launch

- Internet broadcasting network producing and delivering special-interest programming about technology and engineering
- A member benefit
- Increasing public awareness about technology & engineering
- Balance of technical disciplines, and member vs. public access

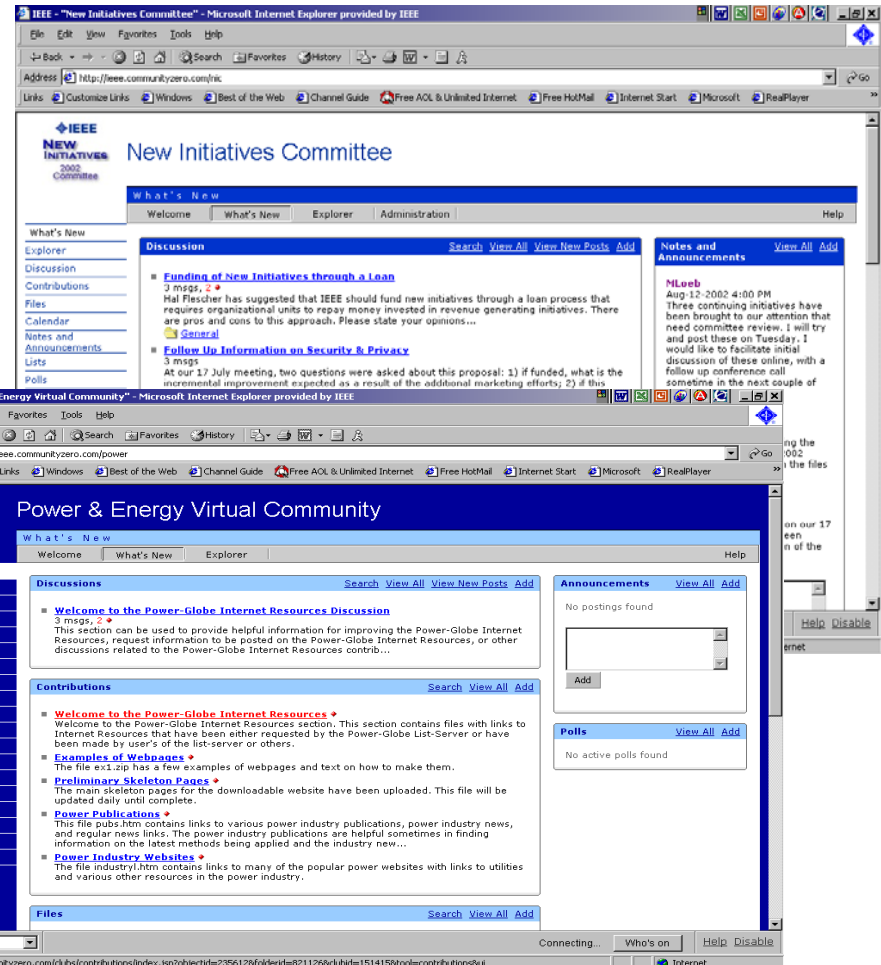


myIEEE - Increasing and Personalizing the Member's Connection with IEEE

- **370,000+ websites – unique to each Member**
- **Connects individual members to their Section; Section & peer-to-peer networking**
- **Integrated & personalized benefit access**
- **Updated daily from IEEE's core databases**
- **Putting the Member 1st, regardless of IEEE organization structure or benefit platform**
- **Providing an interface to IEEE membership which is contemporary with younger generations**
- **Encouraging usage of benefits via desktops and tools... benefits usage = retention**

Online Communities

- Over 162 in operation with more than 27,000 users
- Communities/Forums include IEEE EMC-PSTC, PES Surge Protective Devices, Embedded System, PCIC, Product Safety, Ethernet Passive Optical Networks Employment & Career Strategies
- IEEE governance-- SPC; Section/Chapter volunteers



IEEE Sections

- **Sections provide a community of colleagues**
- **Members build a network through local Section, Chapter, Student Branch activities**
- **Develop new skills by taking an active role**
 - **Gain management, teamwork and leadership experience**
- **Gain recognition for accomplishments and recognize the achievements of others**

IEEE Recognitions

- **Institute level awards and medals**
- **Society awards**
- **Prize Paper awards**
- **Service recognitions**
- **Regional and local awards**
- **Student competitions**
 - **Student Paper awards**
 - **IEEE Computer Society International Design Competition**
 - **Local events (robotics competitions, etc)**

Benefits for Students

- **Student dues are discounted**
- **Students receive full IEEE benefits and more-**
 - **Student Concourse www.ieee.org/students**
 - **Potentials Magazine**
 - **Reduced Dues program first year after graduation**
 - **Graduates of the Last Decade (GOLD) program for recent graduates in the first 10 years of their careers.**

New China Office Opens

- **Expanding IEEE relationships in China through the establishment of an office in Beijing – inaugurated Jan. 2008**
 - **Standards**
 - **University Curriculum Accreditation**
 - **Certification**
 - **Corporate Partnerships**
 - **Membership**

IEEE

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