CELEBRATING

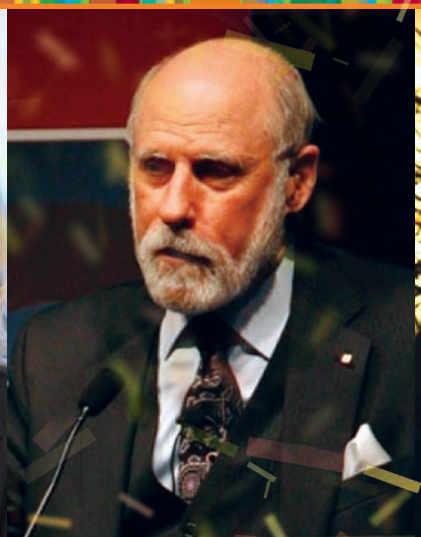
YEARS OF ENGINEERING THE FUTURE

IEEE
Advancing Technology for Humanity

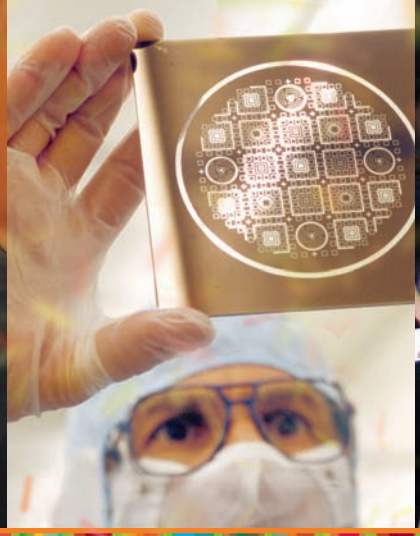














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This Year's Cover…

What is an anniversary without a celebration? The fold-out cover of this year's Annual Report features streamers and confetti, as well as event participants, to illustrate the festive spirit that characterized IEEE in 2009—our 125th anniversary. Starting in January, IEEE members, students, technical luminaries, customers, government leaders and staff around the world participated in more than 230 anniversary-themed celebrations, networking events, technical gatherings and other festivities. Major celebrations in eight global technical centers enabled IEEE members to bring attention to both the accomplishments of IEEE and the ongoing contributions of our technology professionals in engineering the future.

The pages of this year's report feature many of the celebrations and activities that marked the IEEE 125th anniversary, as well as many of the notable people who took part. The report also highlights the achievements of IEEE members in numerous emerging technologies. These technologies have the potential to both benefit humankind in the not-too-distant future, and set the bar for advancing technology in the years ahead.

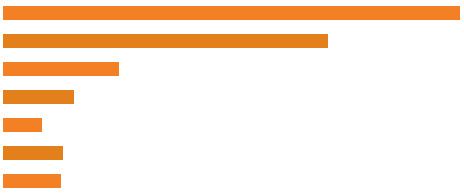
Who We Are

Membership Status

29	Honorary Members
6,383	Fellows
31,880	Senior Members
245,064	Members
16,470	Associate Members
58,914	Student Members
38,261	Graduate Student Members
397,001	**Total Membership**

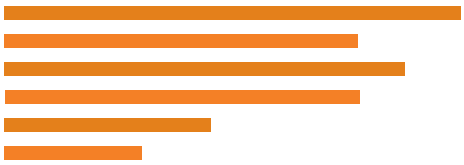
Members in Global Workforce

40.7%	Industry
28.9%	Academia
10.3%	Government
6.3%	Self-employed
3.4%	Retired
5.3%	Unemployed
5.1%	Other



Age of Members

23.9%	Under 30
18.5%	30–39
21.0%	40–49
18.6%	50–59
10.8%	60–69
7.2%	70 and over

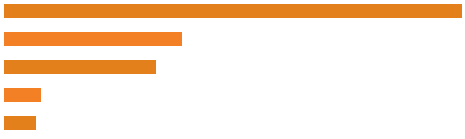


Gender

90.5%	Male
9.5%	Female

Geographic Distribution

53.5%	United States
20.8%	India, China, Pacific Rim
17.7%	Europe, Middle East, Africa
4.3%	Canada
3.7%	Latin America



Society Memberships

5,452	IEEE Aerospace and Electronic Systems Society
8,447	IEEE Antennas and Propagation Society
2,134	IEEE Broadcast Technology Society
10,391	IEEE Circuits and Systems Society
43,682	IEEE Communications Society
2,660	IEEE Components, Packaging, and Manufacturing Technology
6,678	IEEE Computational Intelligence Society
74,722	IEEE Computer Society
3,378	IEEE Consumer Electronics Society
8,882	IEEE Control Systems Society
2,122	IEEE Dielectrics and Electrical Insulation Society
3,523	IEEE Education Society
4,209	IEEE Electromagnetic Compatibility Society
10,545	IEEE Electron Devices Society
9,137	IEEE Engineering in Medicine and Biology Society
3,366	IEEE Geoscience and Remote Sensing Society
4,959	IEEE Industrial Electronics Society
9,958	IEEE Industry Applications Society
3,794	IEEE Information Theory Society
1,147	IEEE Intelligent Transportation Systems Society
4,817	IEEE Instrumentation and Measurement Society
7,325	IEEE Photonics Society*
3,272	IEEE Magnetics Society
12,360	IEEE Microwave Theory and Techniques Society
3,672	IEEE Nuclear and Plasma Sciences Society
1,800	IEEE Oceanic Engineering Society
7,017	IEEE Power Electronics Society
25,066	IEEE Power & Energy Society
757	IEEE Product Safety Engineering Society
1,300	IEEE Professional Communication Society
1,994	IEEE Reliability Society
7,327	IEEE Robotics and Automation Society
14,897	IEEE Signal Processing Society
1,747	IEEE Society on Social Implications of Technology
10,625	IEEE Solid-State Circuits Society
4,905	IEEE Systems, Man, and Cybernetics Society
2,277	IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society
4,460	IEEE Vehicular Technology Society
334,804	**Total**

51 percent of IEEE members belonged to one or more societies at year-end 2009.

* Previously called IEEE Lasers and Electro-Optics Society. The name change was approved in 2009.

Financial Information 2005–2009

(US$000)	Total Assets	Revenue	Net Assets
2005	$ 317,664	$ 297,111	$ 168,724
2006	369,758	330,823	209,404
2007	427,496	339,561	246,686
2008	311,122	342,377	158,066
2009	380,153	389,660	229,157

Sources:
Members in Global Workforce data from Member Use of Internet Survey, November 2009, weighted to reflect the geographic distribution in the member population. Age and gender data are from IEEE Membership as of December 2009. All other membership data are from the Annual Statistics of the IEEE—2009.

2009 Highlights

January

John R. Vig takes office as 2009 IEEE President, and Pedro A. Ray becomes 2010 IEEE President-elect.

February

IEEE Life Fellow Robert H. Dennard receives NAE Charles Stark Draper Prize for his invention of and contributions to the development of Dynamic Random Access Memory.

March

E. James Prendergast is named IEEE Executive Director and Chief Operating Officer.

IEEE 125th Anniversary Media Roundtable draws 50 journalists to New York City event.

IEEE celebrates two-millionth document in IEEE *Xplore*®.

April

Global series of eight IEEE 125th anniversary events begins in Munich, followed closely with a celebration in Austin, Texas.

IEEE Lasers and Electro-Optics Society becomes IEEE Photonics Society.

myIEEE, the personalized Web portal for IEEE members, introduces a new design and new features.

IEEE.tv wins several awards in U.S.-based Aegis Awards competition.

May

The third official 125th anniversary celebration takes place in Boston in conjunction with the IEEE Homeland Security Conference.

On 13 May, the official anniversary date, IEEE celebrates with local festivities and activities around the world.

IEEE launches Smart Grid Interoperability Standards Project P2030.

June

Robert H. Dennard receives 2009 IEEE Medal of Honor for developing the single transistor Dynamic Random Access Memory and scaling principles for integrated circuits.

IEEE announces winners of inaugural IEEE Presidents' Change the World Competition for students.

American Institute of Physics and AVS (formerly American Vacuum Society) add over 250,000 articles in applied physics to IEEE *Xplore*® digital library.

July

IEEE and IBM co-host international "Accessing the Future" conference in Boston to explore building greater ease of use into products for the disabled.

IEEE serves as program partner at *FORTUNE Magazine's* Brainstorm: TECH for the second year.

August

IEEE Spectrum Online launches calculator that helps determine users' carbon footprints.

TryNano.org, a comprehensive, online resource about the field of nanotechnology, is launched.

700 gather to honor IEEE at the anniversary celebration in Bangalore, India.

September

IEEE Standards Board ratifies landmark 802.11n-2009 amendment to IEEE 802.11, significantly enabling more expandable wireless communication systems.

IEEE 125th anniversary events in San Jose, California, and Beijing focus on industry leaders and student achievement.

October

IEEE 125th anniversary celebrations in London and Tokyo highlight technological advances and Japan's first astronaut, respectively.

IEEE and IBM announce agreement to publish IBM journals in IEEE *Xplore*® starting in early 2010.

November

Charles K. Kao, Willard S. Boyle and George E. Smith, all IEEE Life Fellows, are honored with 2009 Nobel Prize for Physics for helping to link the world through fiber-optic networks and for the technology behind digital photography.

First mobile version of IEEE *Xplore*® digital library enables searches via any mobile device with Internet access.

December

John R. Vig passes gavel to Pedro A. Ray, 2010 IEEE President.

Message from the President and the Executive Director

2009 was a year for the record books. Despite the global economic recession, our dedicated volunteers, assisted by our skilled staff, more than overcame the challenges.

IEEE's successes include:

- Exceptional financial results, with net surplus US$71.1 million with an operational surplus of US$21.4 million and net investment gains of US$50.2 million.
- A 7.6 percent increase in product sales, driven by the continued value among academic subscribers in North America and outstanding growth of IEEE/IET Electronic Library in Brazil, China, India and South Africa, among other nations.
- An all-time record high membership of 397,001 with increases in most membership grades and in IEEE society memberships.
- A record 1,077 technical conferences either sponsored or co-sponsored by IEEE.

Another significant success in 2009 was the celebration of the 125th anniversary of IEEE. The effort was remarkable in that it not only showcased IEEE among members, but also provided some significant visibility beyond traditional audiences. The year-long party featured more than 230 local events plus special celebrations in eight major world cities attended by thousands of members, renowned technical experts, customers and government leaders, among others. In addition, a media roundtable in New York City drew more than 50 journalists. It featured IEEE technical experts describing their work on such emerging technologies as early cancer detection and brain-machine interfaces.

IEEE student members also had a prominent role in the 125th anniversary activities. In June, two Stanford University students shared the top prize of US$10,000 in the inaugural IEEE Presidents' Change the World Competition. The winning design—a handheld device for detecting medical conditions normally requiring lab analysis—offers diagnosis options for remote or underdeveloped regions. Students from India, Nigeria and the United Kingdom also received awards in the competition.

Dignitaries and renowned technical experts joined IEEE's celebration at the various events. In Bangalore, more than 700 guests heard former Indian President A.P.J. Abdul Kalam praise IEEE's work in furthering the engineering and technology professions. In Mountain View, California, IEEE Fellow Vinton Cerf, widely recognized as a "father of the Internet," spoke at the dedication of ARPANET as an IEEE Milestone in Electrical Engineering and Computing.

Other highlights of the year:

- The IEEE Smart Grid initiative was launched to bring together the range of expertise, information and resources within IEEE societies, the IEEE Standards Association and other IEEE units. The goal is to use IEEE expertise to facilitate successful smart grid deployments throughout the world that are reliable, efficient, secure and environmentally neutral.
- Use of our unsurpassed intellectual property continued to grow in 2009, with 42 million unique visitors to IEEE *Xplore*® who downloaded 80 million documents. At year's end, the IEEE *Xplore*® digital library included more than 2.5 million documents.
- IEEE efforts to raise worldwide interest in global accreditation resulted in the formal establishment of the seven-nation Caribbean Accreditation Council for Engineering and Technology (CACET). In Peru, an accreditation program supported by IEEE completed its second year of operation.
- The IEEE Standards Board ratified IEEE 802.11n™, an amendment that defines mechanisms for significantly improved data rates and ranges for wireless local area networks (WLANs). This amendment to the IEEE 802.11 base standard is designed to help the data communications industry address escalating demands on enterprise, home and public WLANs with the rise of higher-bandwidth file transfers and next-generation multimedia applications.
- *IEEE Spectrum*, IEEE's flagship publication, added the prestigious Grand Neal Award from the American Business Media trade association to its many honors for the series "Why Mars? Why Now?" The *IEEE Spectrum Online* Web site was awarded Best Web Site in its size category. In addition, IEEE.tv, IEEE's Internet-based television network, received 15 industry awards for its programming.

These achievements and others described in this report have set new benchmarks for accomplishments in the years ahead.

John R. Vig
2009 IEEE President
and Chief Executive Officer

E. James Prendergast
IEEE Executive Director
and Chief Operating Officer

Serving Members

Top of page: Munich was one of eight technology hubs around the world where major IEEE 125th anniversary celebrations were held. Following a program for an enthusiastic audience at Technical University of Munich, the event concluded with a gala reception. **Above:** In London, at another major celebration, speakers included Dame Wendy Hall of the University of Southampton and Professor Christopher Toumazou of Imperial College London. Hall discussed the value of sharing data over the Internet and the notion of a linked web of data. Toumazou, an IEEE Fellow, explored sensor processing solutions and other beneficial technologies for biomedical applications.

Global Celebrations, Student Competition, New York Media Event Mark IEEE's 125th Anniversary

125th Anniversary Events on Six Continents

From Bangalore to Boston, thousands of IEEE members, technical innovators, customers, government leaders and staff took part in more than 230 festivities to mark the IEEE 125th anniversary.

Beginning in January at the College of Engineering in Chengannur, Kerala, India, IEEE sections, student branches, conferences and other groups around the world celebrated the impact that IEEE and its members have had on advancing technology for humanity. Reflecting the IEEE global presence, the IEEE Anniversary Committee selected eight technical hubs for major celebrations: Austin, Texas, USA; Bangalore; Beijing; Boston; London; Munich; San Jose, California, USA; and Tokyo.

On 13 May, the IEEE official founding date, "IEEE Engineering the Future Day" parties were held in Antwerp; Milan; Faisalabad, Pakistan; and Piscataway, New Jersey, USA, among others. In Washington, D.C., the U.S. House of Representatives passed a resolution recognizing the anniversary.

Among the many notable celebrations:

- In Munich, more than 250 people heard presentations by speakers including the president of Technical University of Munich and the past president of VDE, the German association for electrical, electronics and information technology professionals.
- At a technology fair in Austin, local companies displayed their achievements to more than 900 people.
- In Calgary, IEEE Power & Energy—the very first IEEE society—celebrated its own founding 125 years ago along with the IEEE anniversary.
- A party in Beijing recognized winners of the first "Microsoft Cup" IEEE China Student Paper Contest, jointly sponsored by the China Academy of Sciences and Microsoft Research Asia.

- At Government College University in Faisalabad, Pakistan, the IEEE student branch, the IEEE Women in Engineering student group and the IEEE Computer Society student chapter organized a career development program for high school students.

"Change the World" Student Competition

Two Stanford University students won US$10,000 for their hand-held diagnostic lab in the inaugural IEEE Presidents' Change the World Competition. The event was launched as part of the global 125th anniversary celebration. The competition recognizes students who develop unique solutions to real-world problems using engineering, science, computing and leadership skills to benefit their community or humanity.

A team of 19 students from B.V. Bhoomaraddi College of Engineering and Technology, Hubli, India, received US$5,000 for their work with the USHAS Center for Exceptional Children in Hubli to develop electronic games, devices and toys for therapeutic uses with physically and mentally challenged youngsters. A team of five students at Rowan University, New Jersey, USA, won US$2,500 for developing a bicycle-powered grain crusher, useful in many rural parts of the world to convert grain into flour without electricity.

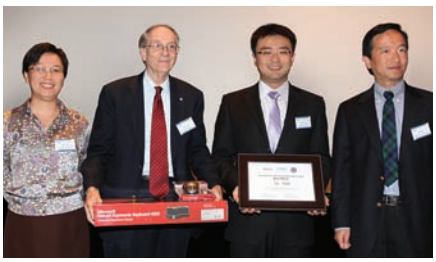
Panel of Experts Discusses World-Changing Technologies

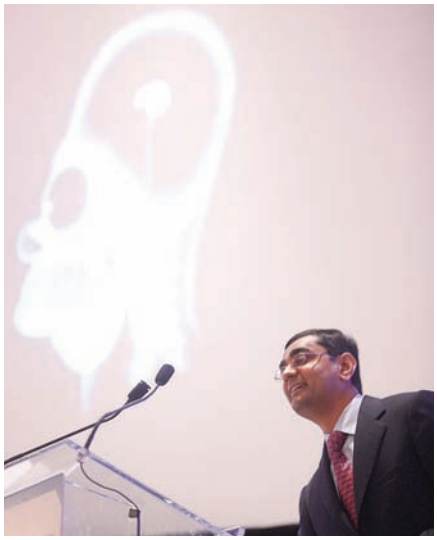
A simple blood test that can determine whether a person is developing cancer and a novel chip technology that could enable low-cost delivery of educational materials were among the innovative technologies featured at the IEEE media roundtable in March 2009 in New York City. Held as part of the IEEE 125th anniversary celebration, the event drew more than 50 journalists who heard a panel of technology experts discuss emerging technologies that could change the world.

Ranging from biometrics and computing to wireless power and robotics, the technologies presented by their developers—all IEEE members—were selected for their potential to revolutionize next-generation technical advances and how humans interact with machines, the world and each other.

Among the speakers, K.J. Ray Liu, an IEEE Fellow, discussed an experimental model that uses a simple blood test to detect cancer and help determine a preventive treatment. In another presentation, Krishna Palem, also an IEEE Fellow, explained how probabilistic chip technology is being tested with an LED roll-up "slate" in rural classrooms in Central India's Mahboobnagar District. The technology provides the needed functionality while minimizing costs and energy consumption.

Top: At the 2009 IEEE Honors Ceremony in Los Angeles, IEEE President John R. Vig (center) congratulates Stanford University students Drew Hall (left) and Richard Gaster who won the US$10,000 first prize and the title Student Humanitarian Supreme in the inaugural IEEE Presidents' Change the World Competition. **Below:** Physical therapists at USHAS Center for Exceptional Children in Hubli, India, assist a child with using a device developed by a student team from B.V. Bhoomaraddi College of Engineering and Technology. The students took second place and won US$5,000 in the competition.





Left, top: Besides the IEEE 125th anniversary, members of the IEEE Benelux and IEEE Italy sections marked their 50th anniversaries in 2009. From left, Benelux Section Secretary Dirk Van Hertem, Italy Section Chair Silvano Donati and 2009–2010 IEEE Region 8 Director Jozef Modelski display special anniversary banners. **Left, below:** During 125th anniversary festivities in Beijing, Suo Yue of Tsinghua University (second from right), Gold Prize winner of the "Microsoft Cup" IEEE China Student Paper Contest, receives congratulations from (from left) Wang Ying, vice president of the Graduate School of Chinese Academy of Sciences; 2008 IEEE President Lewis M. Terman; and IEEE Fellow Zhao Feng, assistant managing director of Microsoft Research Asia. **Right:** At the IEEE Media Event in New York City, Dharmendra Modha, manager, Cognitive Computing, IBM Almaden Research Center, discusses his team's work with computing systems that simulate the brain's abilities for sensation, perception and cognition.

IEEE 125th Anniversary Festivities around the World

Throughout 2009, thousands celebrated the occasion at hundreds of local events and special festivities in eight major world cities. These two pages depict some of the excitement and camaraderie.

Above: In Beijing, Zhang Xiuying, division chief, International Cooperation Division, Administrative Committee of the Zhongguancun Haidian Science Park, chats with IEEE Fellow Janina Mazierska, and past IEEE Region 10 Director.

Above: Chris Horn (left), president of Engineers Ireland; 2009 IEEE President John R. Vig; and Séan McLoone, IEEE 2009 Section chair of IEEE United Kingdom Republic of Ireland, enjoy a celebratory handshake after signing an IEEE National Society Agreement, a cooperative pact between the two organizations.

Left: A panel of seven technology experts discussed emerging technologies with world-changing possibilities at the IEEE Media Roundtable in New York City. The panelists, all IEEE members, were, from left: IEEE Fellow Roy Want, senior principal engineer, Intel Corporation; IEEE Fellow Krishna Palem, professor, George Brown School of Engineering, Rice University; Miguel Nicolelis, co-director, Center for Neuroengineering, Duke University Medical Center; Dharmendra Modha, manager, cognitive computing, IBM Almaden Research Center; IEEE Fellow K.J. Ray Liu, professor, University of Maryland; IEEE Fellow Rangachar Kasturi, professor, University of South Florida; and Katie Hall, chief technology officer, WiTricity.

Left: More than 120 student branches were represented at the IEEE Region 10 Student Congress at the National University of Singapore. Student branches at the University of Singapore and the College of Engineering in Chengannur, India, organized the event, which drew participants from throughout Asia and the Pacific Rim.

Above: V. K. Aatre, an IEEE Fellow and a former adviser to the defense minister of India, was one of the prestigious technical leaders who addressed an audience of more than 700 at the celebration in Bangalore.

Above: A panel discussion during the San Jose festivities included, from left: Howard S. Charney, senior vice president, Office of the President, Cisco Systems, Inc.; 2008 IEEE President Lewis M. Terman; and Vinton G. Cerf, vice president and chief Internet evangelist, Google.

Above: Student members of the IEEE Lahore Section, Pakistan, celebrated the occasion with an eye-catching approach that they later posted on Facebook.

Above: IEEE student members were among the more than 200 members, technology leaders, government officials, customers and others who attended the celebration in Tokyo.

Above: The Tokyo festivities drew some of Japan's and Asia's most distinguished technical leaders. From left, in the front row, are: IEEE Life Fellow and past Region 10 Director Tsuneo Nakahara; Mamoru Mohri, chief executive director, National Museum of Emerging Science and Innovation (Miraikan) and astronaut; IEEE Fellow and past Region 10 Director Seiichi Takeuchi; and at far right, IEEE Region 10 Director Yong Jin Park. Standing next to Dr. Park are Lewis M. and Bobbie Terman. In the back row: Hideki Imai, chair, IEEE Tokyo Section; Akihiko Shirai, Miraikan; and Toshiharu Aoki, chair, IEEE Japan Council.

Above: Douglas C. Engelbart (right) briefly improvises a desk with the cooperation of IEEE Life Fellow Donald L. Nielson during the San Jose celebration. Both men are now retired but played critical roles in the birth of the Internet while with the Stanford Research Institute (SRI).

Above: Lennart Long (left) chair of the 2009 IEEE International Conference on Technologies for Homeland Security, in Boston, greets 2004 IEEE President Arthur W. Winston. The anniversary was marked during the conference welcome reception.

Above: At a reception at The Royal Institution of Great Britain in London, IEEE Fellows as well as academic and technology professionals, customers and media guests were among those celebrating the IEEE 125th anniversary.

Above: Wolfgang A. Herrmann, president of the Technical University of Munich (TUM), addresses the audience during the formal program. The IEEE Munich Section and TUM hosted the celebration in that city.

Above: In the foreground, IEEE Region 5 Director David Pierce presents the Region's Individual Achievement Award to Thuy Dao during a reception in Austin, Texas. 2009 Region 5 Director-elect Sandra Robinson is third from the right. Others in the photo are IEEE Central Texas Section volunteers.

Above: Before an IEEE banner proclaiming "One Voice," a musician plays the dulcimer during the celebration in Beijing.

Above: 2009 IEEE President John R. Vig signs autographs for enthusiastic student members at the festivities in Bangalore.

Left: *IEEE Spectrum* Editor in Chief Susan Hassler interviewed futurist, author and inventor Ray Kurzweil on "Technology's Accelerating Power" during *Fortune's* annual Brainstorm: TECH. IEEE was the publication's program partner and helped to develop the content for the meeting, which brought together leaders of the digital world to consider the future of business and technological innovation.

IEEE Positioning Statement

IEEE is the world's largest professional association advancing innovation and technological excellence for the benefit of humanity. IEEE and its members inspire a global community to innovate for a better tomorrow through its highly cited publications, conferences, technology standards and professional and educational activities. IEEE is the trusted voice for engineering, computing and technology information around the globe.

Public Visibility Initiative Builds Momentum in 2009

The Public Visibility Initiative gained momentum in 2009 with achievements in three key areas: branding and positioning, thought leadership and global media coverage. The goal of this multi-year communications program is to raise IEEE global visibility and increase public understanding of how engineering, computing and technology benefit humanity.

Messaging Architecture

The Public Visibility team developed three components for IEEE communications: a positioning statement or short description of the organization (see sidebar); an elevator pitch or brief message about IEEE that can be delivered in a few seconds; and a tagline, a memorable phrase that summarizes the essence of IEEE and reinforces identity with the brand. The IEEE Board of Directors approved the tagline "Advancing Technology for Humanity." (See the cover of this Annual Report.)

Thought Leadership

Positioning IEEE as a thought leader on major issues globally, IEEE members were featured in expert forums including the annual *Fortune Magazine* Brainstorm: TECH for which IEEE served as program partner. The *Fortune* panel on smart grid included three IEEE Fellows in prominent roles: 2007 IEEE President Leah Jamieson, and past IEEE Power & Energy Society presidents John McDonald and Saifur Rahman. Another event, the IEEE Engineering in Medicine and Biology Society annual meeting, drew 2,200 world leaders in neuro-engineering. It featured two panel discussions with renowned experts—all IEEE members—discussing technology-driven advances in treating conditions including Alzheimer's, Parkinson's, epilepsy and strokes. The conference also included addresses by 2006 Nobel Prize recipient Andrew Zachary Fire and IEEE Fellow Earl Bakken, inventor of the first wearable, portable pacemaker and founder of Medtronic.

10-Country Public Relations Campaign

A 10-country PR campaign aimed at four audiences—pre-university and university-level students, members and professionals—covered timely topics for which IEEE is regarded as a trusted voice. Topics ranged from healthcare and engineering education to consumer electronics, gaming, security and sustainability issues involving energy, the environment and earth observation. IEEE members served as technical experts for the local media, garnering top-tier coverage in these countries.

Above: IEEE.tv, the Internet broadcasting network of IEEE, won 15 industry awards in 2009 recognizing the excellence of its programming. Available to IEEE members and other visitors 24/7, IEEE.tv now includes live streaming of some events and an enhanced Web site to improve viewer experience.

IEEE.tv Wins Awards for Its Internet Programming

IEEE.tv, which offers more than 150 programs for IEEE members and the public, received 15 industry awards in 2009. Several programs won in multiple competitions.

The peer-judged Aegis Video and Film Production Awards, one of the oldest video-film competitions in the United States, recognized IEEE.tv's "Care Innovations: Responsibility for Being Green," as top documentary for 2008. It explores the issue of recycling electronic products and how manufacturers and consumers can work together to improve sustainability. "IEEE Robot Challenge" won in the training/education category and depicts the IEEE Baltimore Section's annual robot-building contest to demonstrate the satisfactions of engineering to high-school students.

IEEE.tv has also begun live streaming of events, including the 2009 IEEE Honors Ceremony, the IEEE President-Elect Candidates Debate and the 125th Anniversary Media Roundtable.

In early January 2010, IEEE.tv launched an enhanced Web site to improve viewer experience. The site offers a redesigned viewer and easier searching and sorting through the growing video library. The viewer has also been upgraded to include video sharing, social media integration and full-screen viewing.

Focusing on Career Help, Entrepreneurship and Student Development

In 2009, IEEE-USA, which represents the public policy and career interests of U.S. members and all U.S. engineers, provided career assistance in response to high unemployment within the U.S. engineering and computer professions and supported entrepreneurs and consultants. Some of the achievements that supported these goals include:

- A Career Help Web portal for at-risk and unemployed members, with links to job listings, employment and career strategies, and related resources
- A series of Career Survival Workshops
- Eighteen e-books and 12 Webinars on career and professional development topics
- A new Tech Match mentoring service for entrepreneurs and consultants
- State-level resources added to IEEE-USA's online Entrepreneurs Village community

In IEEE Region 9 (Latin America), student members from Bahia, Chile, Colombia and Ecuador, among other nations, celebrated the IEEE 125th anniversary by launching a monthly, online magazine. Titled *Enlaces*, or in English, *Connections*, the publication communicates student activities throughout the geographic region and is available in both Spanish and Portuguese. In all, 50 student members representing 25 of the 32 Student Branches in Latin America participated in developing the publication. Networking and collaboration with students in Spain and Portugal, both in IEEE Region 8, are growing; *Enlaces* is now distributed to student members in those countries, as well.

IEEE University Partnership Program Expands to China

The IEEE University Partnership Program (UPP), established in 1999 to build closer relationships with students, faculty and librarians at some of the top engineering schools in the United States, has gone global. Peking University and Tsinghua University, both in Beijing, are the first schools outside the U.S. to join the UPP.

The UPP now has 15 partnering universities, including Drexel University, Stanford University and the University of California, Berkeley. The program offers student branches additional resources and support and encourages networking with IEEE local, regional and international groups. UPP emphasizes taking full advantage of IEEE membership benefits, including scholarships, competitions, conferences and other learning opportunities.

Above: IEEE-USA's 2009 Government Fellows contributed technology expertise while gaining new knowledge. IEEE Life Senior Member Kenneth J. Lutz (left) was on the staff of U.S. Senator Ron Wyden, and IEEE Senior Member Thomas E. Tierney IV (right) was an Engineering and Diplomacy Fellow in the U.S. Department of State. Not shown, IEEE Member Thomas T. Lee served on the staff of U.S. Representative Jay Inslee.

Above: *Enlaces,* or *Connections*, was developed and launched by a group of student members in IEEE Region 9 to help honor the IEEE 125th anniversary.

Above: At Peking University in Beijing, Qing Li, IEEE Client Services and University Partnership Program (UPP) Manager, China, and Kristen Fitzpatrick, IEEE UPP Manager, (foreground), pose with student officers of the Peking University IEEE Student Branch during the official welcome of the university to the program.

Serving Society

Above: Experts predict that in the future, electricity increasingly will be generated in small, local units—instead of large, centralized power stations. Photovoltaic modules on the roofs or facades of buildings will directly supply electricity that will then be fed into the network. In addition, intelligent building technology will ensure reduced building power consumption, with greater needs-based air conditioning and ventilation. (Courtesy of Siemens)

Above: Wind has enormous potential to supply a significant amount of electricity in meeting global energy needs. Experts point out that while wind is variable and sometimes does not blow at all, wind plants do increase the overall statistical probability that a utility system will be able to meet demands.

Making Global Electricity "Smart"

Bringing the world's aging electric grids into the 21st century is the goal of IEEE Smart Grid. An initiative launched in 2009 to leverage IEEE resources across the organization, IEEE Smart Grid aims to use its broad technical foundation to help enable a modern, optimized global power grid that is more reliable, efficient, secure and environmentally neutral.

IEEE Smart Grid enables coordination among the IEEE Standards Association (IEEE-SA), IEEE societies, the Technical Activities Future Directions Committee and others involved in related research and development. In 2009, emphasis was on four areas: standards, conferences, publications and a Web portal.

Standards

IEEE-SA has launched Smart Grid Interoperability Standards Project P2030. When completed, P2030 will help provide a knowledge base and define smart grid interoperability of the electric power system, setting the stage for future smart grid standards. More than 430 individuals representing 435 organizations from the power engineering, communications and information technology communities have participated thus far. In addition, IEEE-SA, along with other groups, is collaborating with the U.S. Commerce Department's National Institute for Standards and Technology (NIST) to create The Smart Grid Interoperability Standards Roadmap. This document will identify plans for developing architecture and associated standards and infrastructure for the U.S. smart grid.

Conferences

Since 2006, more than 100 smart grid technical sessions have been offered, including:

- The first IEEE Innovative Smart Grid Technologies Conference in January 2010 attended by more than 730 people representing 32 countries at NIST in Maryland, USA.
- IEEE PowerTech, held in Bucharest in mid-2009, which attracted scientists and engineers to discuss such topics as artificial intelligence in power systems and restructuring electricity industry and transnational networks.
- IEEE Power & Energy Society General Meeting, in Calgary in July 2009, which held technical sessions on integrating renewables and storage into the grid.

Publications

Almost 2,500 articles on smart grid were published in over 40 IEEE publications by year-end 2009, and two new cross-disciplinary, archival journals are being introduced in 2010:

- *IEEE Transactions on Smart Grid*, sponsored by 10 IEEE societies
- *IEEE Transactions on Sustainable Energy*, sponsored by seven IEEE societies

Web Portal

The IEEE Smart Grid portal (http://smartgrid.ieee.org) was launched in January 2010 to provide smart grid information, education and news from IEEE and other expert sources. The portal is designed for manufacturers, policymakers, educators, governments, engineers, computer scientists, researchers and other stakeholders in smart grid-related industries.

Above: The IEEE Smart Grid Web portal provides a resource for a wide range of stakeholders to obtain information, education and news.

IEEE Humanitarian Efforts Encourage Service to Humanity

How can IEEE members apply technology in effective new ways to help address worldwide humanitarian needs? In 2009, various IEEE units made notable progress and advanced the organization's foremost core value: service to humanity.

- The first-ever IEEE-IBM conference, "Accessing the Future," drew more than 150 participants from around the world to Boston where they examined how next-generation technologies can best serve people with disabilities. Organized by the IEEE Future Directions Committee in partnership with IBM, and technically co-sponsored by the IEEE Engineering in Medicine and Biology Society, the conference emphasized the need to make accessibility an integral concern as new technologies are developed, instead of trying to retrofit them.
- The IEEE Foundation established The Humanitarian Technology Fund to award grants for projects aimed at solving pressing human needs, especially in developing countries. The first grants were to Brown University's Engineers Without Borders to help fund a rainwater storage project in Kuttanad, India, and to Virginia State University to support developing a wireless messaging device to be used in disaster relief.

Above: John Kemp (right) of the United States Business Leadership Network was both a keynote speaker and a track chair during the first-ever IEEE-IBM conference, "Accessing the Future." The conference participant with him is unidentified.

IEEE Standards Association Marks 2009 with Milestone WLAN Amendment and Outreach Programs

A landmark amendment to the successful IEEE 802.11 standard, new and enhanced corporate programs and agreements with three important international standards organizations marked the 2009 accomplishments of the IEEE-SA.

After a seven-year effort, IEEE-SA announced the approval of the 802.11n amendment. It enables significantly more expandable wireless local area networks (WLANs) that deliver 10 times greater data rates than previously defined.

IEEE-SA also launched its Industry Connections program so companies can quickly and cost-effectively collaborate in the early stages of technical work by accessing IEEE and IEEE-SA customized resources. The program's first activity is the Industry Connections Security Group, a global effort to pool experience and resources in combating the rapid increase in computer security threats.

In another industry-related program, IEEE-SA restructured its corporate memberships to make it easier for the technical staff of member companies to engage in standards-development projects. The new basic corporate membership level includes representation at standards-development meetings for an unlimited number of projects. An advanced membership level includes full privileges in any number of working groups. Projects with enough advanced membership participation may receive special support services from IEEE.

Above: A leadership meeting in Seoul brought together members of the IEEE 802.16 standards group with members of both the Association of Radio Industries and Business and the Telecommunications Technology Association to collaborate on advanced international mobile communications. IEEE Fellow Roger B. Marks, chair of IEEE 802.16 (center, wearing a blue shirt), is in the front row.

In 2009, IEEE-SA signed seven new cooperative agreements including:

- Agreements with the Association of Radio Industries and Businesses in Tokyo and the Telecommunications Technology Association in Korea regarding IEEE Standard 802.16 and IMT-Advanced.
- A memorandum of understanding with the China National Institute of Standardization in Beijing to promote communication and shared knowledge of the standards development activities between the two organizations.
- An agreement with the International Health Terminology Standards Development Organization in Copenhagen to encourage standardized terminology for information systems to help improve patient safety and quality of care.

Above: The IEEE Certified Biometrics Certification Professional® program was developed with leading biometrics experts to meet the needs of this rapidly evolving field.

IEEE Launches Biometrics Certification and Training Program

Together with some of the world's leading biometrics experts, IEEE has developed and introduced a new certification and training program to meet the growing needs of biometrics professionals and their organizations. The IEEE Certified Biometrics Professional® (CBP) program contains the knowledge and skills to apply biometrics to real-world challenges and applications. Biometrics—automated personal recognition based on such biological traits as fingerprints and irises or behavioral characteristics like gait or signature—has grown quickly over the past decade.

The CBP program has two components: certification, through the CBP exam, and training, through the CBP Learning System. Biometrics professionals who pass the IEEE CBP exam and earn the CBP designation demonstrate that they have the proficiency needed to perform effectively, meeting the needs of this rapidly evolving field. The IEEE CBP Learning System combines print materials and online interactive software to provide comprehensive training and CBP exam preparation.

IEEE Pre-University Programs Attracting Record Numbers

IEEE programs designed to appeal to the next generation of engineers and technologists set new records in 2009 for audience reach and participation.

- **TryEngineering.org**, the Web site created by IEEE and IBM for students, parents, teachers and school counselors had more than 5.1 million visitors, an increase of .6 million over 2008. Enhancements include 15 new complimentary lesson plans—bringing to 71 the total now available on the site—and a new search feature that helps teachers locate material faster.
- **TryNano.org** was launched in mid-2009 to raise the awareness of pre-university students, the general public, undergraduate students and practicing engineers about nanotechnology. Developed by the IEEE Nanotechnology Council, IBM and TryScience, the site offers nanotechnology applications, profiles of professionals and organizations in the field and lesson plans, among other features.
- **Teacher In-Service Program (TISP)**, in which IEEE members learn how to show teachers how to apply engineering concepts in teaching science and math, trained more than 300 new volunteers in Montevideo, Uruguay; Montreal, Canada; and Shenzen, China. A grant from the IEEE Foundation and the IEEE Life Members Committee also enabled 140 Student Branch leaders from 11 Latin American nations to attend a TISP workshop in Peru. Since 2001, IEEE volunteers have trained more than 3,000 teachers representing over 330,000 students.

Above: At the Teacher In-Service Program workshop hosted by the IEEE Uruguay Section, two educators practice an exercise that demonstrates the concept of force. They will eventually use the lesson in the classroom.

Left: Demonstrations of basic engineering and scientific principles introduced students at Phateng Comprehensive High School, Mamelodi, Pretoria, South Africa, to the excitement of a technical career. The WIE affinity group of the IEEE South Africa Section is working to create technical support for teachers and mentoring for students through the educational outreach program known as STAR (Student-Teacher and Research Engineer/Scientist).

IEEE Milestones

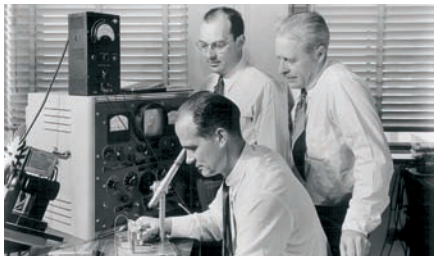
For almost 30 years, the IEEE Milestones in Electrical Engineering and Computing Program has recognized exceptional historical achievements. In 2009, the IEEE 125th anniversary inspired a record 17 milestone dedications—10 in the United States, four in Japan, and one each in the Netherlands, Russia and the United Kingdom. Besides the six featured here, all the other 11 dedicated in 2009 are described at www.ieeeghn.org.

$$\nabla \cdot D = \rho \qquad \nabla \cdot B = 0$$

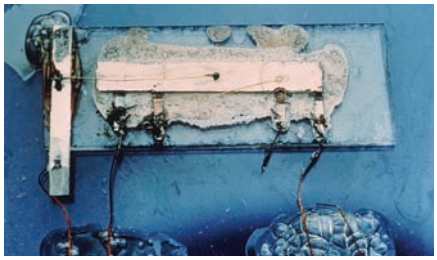
$$\nabla \times E = -\frac{\partial B}{\partial t} \qquad \nabla \times H = \frac{\partial D}{\partial t} + J$$

Maxwell's Equations, 1861–1870. James Clerk Maxwell's unified theory of electricity, magnetism and light, the Theory of Electromagnetism, was developed partly at his home in Glenlair, Scotland, and is a cornerstone of classic physics. It underpins all modern information and communication technologies.

Development of Electronic Television, 1924–1941. The extensive work of Professor Kenjiro Takayanagi, standing second from right, in Hamamatsu, Japan, helped to lay the foundation for the rise of Japanese television and related industries to global leadership.



Invention of the First Transistor at Bell Telephone Laboratories, Inc., 1947. In Murray Hill, New Jersey, USA, Walter H. Brattain and John A. Bardeen, directed by William B. Shockley, discovered the transistor effect and developed a point-contact germanium transistor leading directly to solid-state devices that revolutionized the electronics industry.



First Semiconductor Integrated Circuit, 1958. Integrated circuits are the basis for virtually all electronic equipment, but Jack S. Kilby's demonstration at Texas Instruments in Dallas, USA, of a working integrated circuit was the first time that electronic components were integrated onto a single substrate. (Courtesy of Texas Instruments)

Birthplace of the Internet, 1969. The Internet revolution began at 10:30 p.m., 29 October 1969, when the first ARPANET message was sent from the University of California, Los Angeles, to the Stanford Research Institute (SRI) in Menlo Park, California. In 2009, IEEE Milestones were dedicated for both locations. Above, SRI Vice President Emeritus Donald L. Nielson (left) and 2008 IEEE President Lewis M. Terman unveil the plaque for SRI.

Compact Disc Audio Player, 1979. N.V. Philips' Gloeilampenfabrieken of Eindhoven demonstrated the compact disc audio player, confirming that digital optical recording and playback can reproduce audio signals with superb stereo quality, and established the technical standard for those recording systems.

Products and Services

Above: This dramatic interpretation of the Mars landscape reflected on the visor of an astronaut's helmet is adapted from the June 2009 cover of *IEEE Spectrum*. The issue was the first in a two-part series on the future of space travel, "Why Mars? Why Now?," and helped enable IEEE's flagship publication to win the coveted Grand Neal Award presented by American Business Media. (Illustration by Bryan Christie)

New Studies Reaffirm Value of IEEE Publications

IEEE journals continue to maintain a healthy and growing lead in their field according to the annual Journal Citation Report (JCR), which determines how often journal articles are cited by later research.

According to the 2008 JCR released in 2009, IEEE publishes 16 of the top 20 journals in electrical and electronics engineering; nine of the top 10 journals in telecommunications; six of the top 10 journals in computer science, hardware and architecture; and top or high-ranking journals in several additional fields of technology.

In early 2010, a related study was released by 1790 Analytics LLC, a U.S.-based consulting firm that analyzes patent trends for the investment community. The report examines patents filed with the U.S. Patent Office from 1997 through 2009 by the top 25 patenting organizations. IEEE publications received more than 125,000 patent citations—three times more than any other publisher.

IEEE *Xplore*® Delivering Innovative Research Better than Ever

A major upgrade to the IEEE *Xplore*® digital library in early 2010 is making it easier and faster for users to search its more than two million documents. The innovative new features are based on feedback from hundreds of librarians, faculty, scientists, engineers, and IEEE professional and student members and volunteers.

Individual users and organizations can subscribe to IEEE *Xplore*® at various levels and use the entire range of new features. These include an easy-to-navigate design, a new and more powerful search engine with options for greater flexibility, advanced search tools, new personalization capabilities and enhanced online support. Mobile access, added as an experiment in mid-2009, allows searches using a cell phone or any other Internet-enabled mobile device.

Engineers and other technical professionals downloaded 80 million documents during 2009, an average of more than 6.6 million documents a month or almost 220,000 each day. At the end of 2009, IEEE's digital collection included: documents from IEEE journals, magazines, transactions and conferences; all IEEE standards; journals, magazines, letters and conference proceedings from the Institution of Engineering and Technology (IET); eBooks published by Wiley-IEEE Press; and IEEE Expert Now educational courses.

Also during 2009, IEEE teamed up with the American Institute of Physics (AIP) and AVS (formerly the American Vacuum Society) to offer the AIP/AVS Applied Physics Library package for corporations via IEEE *Xplore*®. It contains more than 250,000 articles in the fields of semiconductors, aerospace, automotive technology, computer hardware and electronics, among others.

Hybrid Open-Access Journal Tests New Scholarly Publishing Business Model

IEEE Photonics Journal, designed for rapid publication of new research about photonics and one of seven new IEEE publications launched in 2009, is the first IEEE periodical to be produced as a Hybrid Open Access (OA) journal. OA is a new business model that replaces paid subscriptions by shifting publishing costs to other parties, such as research funders or authors.

In this journal published only online by the IEEE Photonics Society, authors can designate whether submitted articles should be provided as paid or open-access content in IEEE *Xplore*®. If the author or the body supporting the research is willing to pay a publication fee, IEEE will provide free access to readers. Every OA article in IEEE *Xplore*® will be clearly marked with this identifier: Open Access. In January 2010, IEEE introduced the second hybrid OA publication, *IEEE Magnetics Letters* sponsored by the IEEE Magnetics Society.

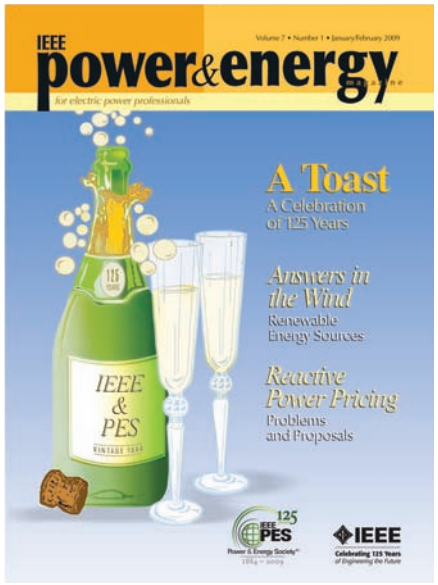
Since hybrid open access may be a business model for scholarly publishing in the future, IEEE is experimenting to see which of the OA variations has the best chance of being self-sustaining. For example, IEEE is also examining the impact of "delayed open access" by monitoring the use of IEEE articles that are being deposited with PubMed Central as part of the mandate by the U.S. National Institutes of Health (NIH). The NIH makes those articles freely available on PubMed Central 12 months after they are first published by the original journal.

These are the other six IEEE publications introduced in 2009:

- *IEEE Transactions on Autonomous Mental Development* is jointly sponsored by the IEEE Computational Intelligence and the IEEE Consumer Electronics Societies, and is technically co-sponsored by the IEEE Computer, the IEEE Engineering in Medicine and Biology and the IEEE Robotics and Automation Societies.
- *IEEE Transactions on Computational Intelligence and AI in Games* is co-sponsored by three IEEE societies—Computational Intelligence, Computer and Consumer Electronics—and the IEEE Sensors Council. It is technically co-sponsored by four IEEE societies—Systems, Man, and Cybernetics; Instrumentation and Measurement; Robotics and Automation; and Communications.
- *IEEE Embedded Systems Letters* is sponsored by the IEEE Council on Electronic Design Automation.
- *IEEE Intelligent Transportation Systems Magazine* is sponsored by the IEEE Intelligent Transportation Systems Society.
- *IEEE/OSA Journal of Optical Communications and Networking* is sponsored by the IEEE Photonics Society and is technically co-sponsored by the IEEE Engineering in Medicine and Biology and Consumer Electronics Societies, along with the IEEE Nanotechnology Council.
- *IEEE Solid-State Circuits Magazine* is sponsored by the IEEE Solid-State Circuits Society.

All seven periodicals are available through the IEEE *Xplore*® digital library, as well as in various IEEE online collections and by individual subscription.

Above: *IEEE Photonics Journal* is the first IEEE periodical to be published as a Hybrid Open Access (OA) journal. Published online only, authors can designate whether submitted articles should be provided as paid or open-access content in IEEE *Xplore*®.



Above: The January/February 2009 issue of *IEEE Power & Energy* commemorated not only the IEEE 125th anniversary but also the 125th anniversary of the IEEE Power & Energy Society, the organization's oldest technical society.

Above: Redesigned and relaunched in mid-2009, *IEEE Spectrum Online* received one of three Neal Awards for Best Web Site. The site has many features for social networking and also provides easy access to the latest news on technology topics.

IEEE Intellectual Property Sales Set New Record

Despite the 2009 global economic recession, sales of IEEE intellectual property increased 7.6 percent over 2008, fueled primarily by sales for the IEEE/IET Electronic Library (IEL). This was the ninth consecutive year that IEL set new sales records. IEL is the largest and most comprehensive IEEE digital library package offered to academic institutions, corporations and government agencies.

Sales were especially strong among academic institutions. IEEE grew the North American subscription base and greatly surpassed overall worldwide sales goals. In China, 18 universities were added for a year-end total of 100 institutions. IEEE also entered a five-year agreement with CAPES (Coordenacao de Aperfeicoamento de Pessoal de Nival Superior), the Brazilian Ministry of Education division that oversees the curricula for 100 technical universities in that country. IEEE sales also grew in India, including with the nation's Defence Research and Development Organization. IEEE also established new academic consortia in South Africa, The Czech Republic, Slovakia and Iran.

Worldwide, 97 of the top 100 technical universities subscribe to IEL; in the U.S., the top 50 engineering schools do so. In addition, 20 of the top 25 semiconductor companies, nine of the top 10 aerospace companies and eight of the top 10 telecommunications companies rely on IEL.

Editorial Honors, Redesigned Web Site Highlight 2009 for *IEEE Spectrum*

IEEE Spectrum received the Grand Neal Award by American Business Media for its June 2009 special issue on the future of space travel, "Why Mars? Why Now?" The IEEE flagship publication surpassed more than 700 other entries to claim the top business journalism prize in the group of Jesse H. Neal National Business Journalism Awards. The awards recognize editorial excellence in business-to-business publications. The Mars report was also recognized for "Best Subject-Related Series of Articles."

Operations

Solar Initiative: One of Several Strategies to "Green" IEEE

An initiative that reduces the impact of IEEE on the environment is also enabling the organization to trim its electricity costs. The 275 photovoltaic solar panels installed on part of the IEEE Operations Center roof in Piscataway, New Jersey, can produce 50,000 kilowatt hours a year, or about 20 percent of the building's electricity demands.

An LCD screen in the Operations Center lobby reports real-time data such as how many watts the panels are producing, how much electricity the system has generated since it was brought online, and how many pounds of greenhouse gases that IEEE has kept out of the atmosphere since starting to use the system.

The Piscataway installation is the first phase of a plan to mount panels on IEEE-owned buildings in the United States, including more panels at the Operations Center and an installation on the IEEE Computer Society building in Los Alamitos, California.

In addition, the staff-led Green Initiatives Committee has developed strategies for implementing environmentally-friendly practices within IEEE. These range from partnering with vendors that have significant sustainable programs in place to raising employees' awareness about sustainability. The committee has also facilitated green enhancements that reduce paper use and encourage recycling at IEEE meetings and conferences.

In addition, *IEEE Spectrum Online* received one of three Neal Awards for Best Web Site. Redesigned and relaunched in mid-2009, the site also was a finalist in the National Magazine Awards for Digital Media, sponsored by the American Society of Magazine Editors in association with the Columbia University Graduate School of Journalism. *IEEE Spectrum Online's* nominations were in the podcast and interactive tool categories. The interactive tool is a carbon footprint calculator that enables visitors to determine their households' carbon emissions and then discuss the results with others in an online forum. It is one of many features for social networking while also providing easy access to the latest news on technology topics.

A New Record: 1,077 IEEE Conferences

In 2009, thousands of IEEE members and other technical professionals continued to reinforce the value of IEEE conferences, attending a record 1,077 such events that were financially and/or technically sponsored or co-sponsored by IEEE. Seventy percent were held outside the United States.

A few of the 2009 conferences:

- In Christchurch, New Zealand, 540 researchers and industry experts from 41 countries attended IEEE SENSORS 2009. Sponsored by the IEEE Sensors Council, the program featured 113 tutorials, three keynote addresses, 223 oral and 276 poster presentations that included chemical and gas sensors; biosensors; optical, mechanical and physical sensors; and sensor/actuator systems.

- Powering vehicles with electric energy generated by wind, the sun and other renewable sources was one of the topics at the 5th Vehicle Power and Propulsion Conference in Dearborn, Michigan, the heart of the United States auto industry. More than 400 people, 35 percent of them from outside the U.S., attended the meeting jointly sponsored by the IEEE Vehicular Technology and Power Electronics societies.

- Some 1,200 people attended the IEEE International Ultrasonics Symposium in Rome where technical presentations were presented on medical ultrasonics, nondestructive evaluation, industrial applications and physical acoustics. The IEEE Ultrasonics, Ferroelectrics and Frequency Control Society sponsored the meeting.

Above: Massimo Pappalardo (left) was general chair of the 2009 IEEE International Ultrasonics Symposium in Rome. Also shown are Mike Garvey, IEEE Ultrasonics, Ferroelectrics and Frequency Control Society president, and Jan Brown, the society's newsletter editor.

Above: Earl Bakken (seated at right), inventor and founder of Medronic, was a keynote speaker at the annual meeting of the IEEE Engineering in Medicine and Biology Society (EMBS) in Minneapolis, USA. With him, from left: Zhi Pei Liang, IEEE Fellow and 2009 EMBS president-elect; Donna Hudson, IEEE Fellow and EMBS past president; Laura J. Wolf, EMBS executive director; Bin He, IEEE Fellow and 2009 EMBS president; and Gary H. Glover, who spoke at the annual meeting.

Above: Networking and camaraderie were evident at the 2009 IEEE Multi-Conference on Systems and Control in St. Petersburg, Russia. Attendees heard addresses on recent advances in intelligent control, including innovative control algorithms and intelligence methods that enable systems to achieve high performance under uncertain conditions.

Membership Development

397,001: IEEE Membership Sets a New Record High

Despite a global economic recession, IEEE membership set a new record for growth in 2009, ending the year with 397,001 members—a 3.8 percent increase. It was the second largest annual gain in members since 1963. This was driven primarily by gains in Asia and the Pacific Rim (Region 10), Europe/Middle East/Africa (Region 8) and Canada (Region 7). U.S. regions also contributed to the overall growth.

At year-end 2009, IEEE Region 10 remained the largest of the 10 IEEE geographic regions, with 82,361 members. Also at year's end, members from outside the U.S. constituted 46.5 percent of the total organization, up from 45.1 percent the previous year. The percentage of women members grew slightly to 9.5 percent of the total membership.

Graduate student membership grew 22.8 percent in 2009, with 38,261 in this category at year's end. Undergraduate student membership increased 8.9 percent, with the largest gains in the Western (Region 6), South Central (Region 5) and Eastern U.S.A. (Region 2). Asia/Pacific Rim and Canada also showed gains in student memberships.

Overall, total society memberships declined 0.2 percent in 2009, but 25 of the 38 IEEE societies increased their memberships. IEEE Systems, Man and Cybernetics grew 13.3 percent, IEEE Industrial Electronics posted a 10.2 percent increase, and IEEE Product Safety Engineering increased 8.5 percent.

The Southwest Missouri Section was elevated from subsection in recognition of its membership growth. Three subsections, which serve members within a larger section, were formed in Medellin, Colombia; Shandong, China; and Tasmania, Australia.

Awards, Fellows and Honors

Robert Dennard Receives IEEE Medal of Honor

2009 IEEE President John R. Vig (left) presented the 2009 IEEE Medal of Honor to Robert H. Dennard in Los Angeles during the annual Honors Ceremony. Dennard received the highest IEEE honor for his invention of the single-transistor Dynamic Random Access Memory (DRAM) and for developing scaling principles to integrated circuits. Both these contributions have brought about far-reaching and fundamental changes in science and technology, impacting a broad range of industries from aviation to telecommunications. An IEEE Life Fellow, Dennard is an IBM Fellow at the IBM T.J. Watson Research Center in Yorktown Heights, New York, USA. Also in 2009, he was named the recipient of the Charles Stark Draper Prize. The IEEE Medal of Honor is sponsored by the IEEE Foundation. President Vig also presented 12 other Medals, two Service Awards, two Corporate Recognitions and one Honorary Membership.

IEEE Medal of Honor
Robert H. Dennard
IBM T.J. Watson Research Center
Yorktown Heights, NY, USA

Sponsor: IEEE Foundation

IEEE Alexander Graham Bell Medal
Robert J. McEliece
California Institute of Technology
Pasadena, CA, USA

Sponsor: Alcatel-Lucent Bell Labs

IEEE Edison Medal
Tingye Li
Consultant
Boulder, CO, USA

Sponsor: Samsung Electronics Company, Ltd.

IEEE James H. Mulligan, Jr. Education Medal
Jose B. Cruz, Jr.
Ohio State University
Columbus, OH, USA

Sponsors: The Mathworks, Inc., Pearson Education, Inc., National Instruments Foundation and IEEE Life Members Committee

IEEE Founders Medal
Craig R. Barrett (retired)
Intel Corporation
Chandler, AZ, USA

Sponsor: IEEE Foundation

IEEE Richard W. Hamming Medal
Peter Franaszek (retired)
IBM T.J. Watson Research Center
Yorktown Heights, NY, USA

Sponsor: QUALCOMM, Inc.

IEEE Jack S. Kilby Signal Processing Medal
Charles Sidney Burrus
Rice University College of Engineering
Houston, TX, USA

Sponsor: Texas Instruments, Inc.

IEEE Jun-ichi Nishizawa Medal
Chenming Calvin Hu
University of California
Berkeley, CA, USA

Sponsors: The Federation of Electric Power Companies, Japan and Semiconductor Research Foundation

IEEE Robert N. Noyce Medal
Eli Harari
SanDisk Corporation
Milpitas, CA, USA

Sponsor: Intel Foundation

IEEE Dennis J. Picard Medal for Radar Technologies and Applications
Philip Woodward (retired)
Royal Radar Establishment
Malvern, United Kingdom

Sponsor: Raytheon Company

IEEE Simon Ramo Medal
Albert F. Myers
Consultant
La Habra Heights, CA, USA

Sponsor: Northrop Grumman Corporation

IEEE John von Neumann Medal
Susan L. Graham
University of California
Berkeley, CA, USA

Sponsor: IBM Corporation

IEEE Haraden Pratt Award
James H. Beall
Engineering Consultant
New Port Richey, FL, USA

Sponsor: IEEE Foundation

IEEE Richard M. Emberson Award
Harold L. Flescher
HLF Consulting Services
Palm Beach Gardens, FL, USA

Sponsor: IEEE Technical Activities Board

IEEE Corporate Innovation Recognition
Corning, Inc.
Corning, NY, USA

and

IBM T.J. Watson Research Center
Yorktown Heights, NY, USA

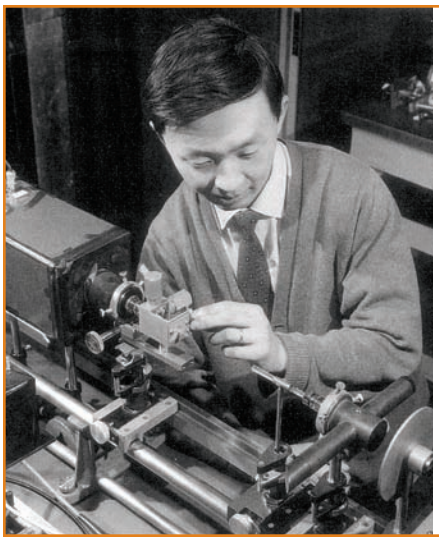
Sponsor: IEEE

IEEE Honorary Membership
Gerald J. Posakony
Pacific Northwest National Laboratory
Richland, WA, USA

Sponsor: IEEE

IEEE/RSE Wolfson James Clerk Maxwell Award
Alberto Sangiovanni-Vincentelli
University of California
Berkeley, CA, USA

Funder: Wolfson Microelectronics, plc



IEEE Fellow Charles K. Kao (left, early in his career), is one of three IEEE Life Fellows who shared the 2009 Nobel Prize in physics. Kao was recognized for breakthroughs in the transmission of light in fiber-optic cables. The development helped build the framework for modern broadband communication networks that carry high-speed Internet data and phone calls around the world. George E. Smith and Willard S. Boyle were honored for inventing an imaging semiconductor circuit that led to digital photography. In 1969, at Bell Laboratories, they invented the charge-coupled device (CCD) which revolutionized photography by allowing light to be captured electronically as pixels.

Other Major 2009 IEEE Awards

At ceremonies around the world during 2009, eminent engineers and other outstanding technical professionals were presented with 31 IEEE Technical Field Awards, two IEEE teaching awards and one prize paper award.

IEEE Cledo Brunetti Award
Burn Jeng Lin
TSMC. Ltd.
Hsinchu, Taiwan

Sponsor: Brunetti Bequest

IEEE Components, Packaging and Manufacturing Technology Award
George G. Harman
NIST
Gaithersburg, MD, USA

Sponsor: IEEE Components, Packaging and Manufacturing Technology Society

IEEE Control Systems Award
David Quinn Mayne
Imperial College
London, England

Sponsor: IEEE Control Systems Society

IEEE Electromagnetics Award
Kenneth K. Mei
City University of Hong Kong
Kowloon, Hong Kong

Sponsors: IEEE Antennas and Propagation, IEEE Electromagnetic Compatibility, IEEE Microwave Theory and Techniques, and IEEE Geoscience and Remote Sensing Societies

IEEE James L. Flanagan Speech and Audio Processing Award
John Makhoul
BBN Technologies
Cambridge, MA, USA

Sponsor: IEEE Signal Processing Society

IEEE Andrew S. Grove Award
Eric R. Fossum
Samsung Electronics Semiconductor Research and Development Center
Yongin City, South Korea

Sponsor: IEEE Electron Devices Society

IEEE Fellow Alberto Sangiovanni-Vincentelli (right) was presented with the 2009 IEEE/Royal Society of Edinburgh (RSE) Wolfson James Clerk Maxwell Award by His Royal Highness the Duke of Edinburgh in Edinburgh, Scotland. Dr. Sangiovanni-Vincentelli was honored for his pioneering innovation and leadership in electronic design automation that have enabled the design of modern electronics systems and their industrial implementation.

IEEE Herman Halperin Electric Transmission and Distribution Award
Carson W. Taylor (retired)
Bonneville Power Administration
Portland, OR, USA

Sponsors: Robert and Ruth Halperin Foundation, in memory of Herman and Edna Halperin, and the IEEE Power & Energy Society

IEEE Masaru Ibuka Consumer Electronics Award
Eugene J. Polley (retired)
Zenith Electronics, LLC
Lincolnshire, IL, USA

Sponsor: Sony Corporation

IEEE Internet Award
Lixia Zhang
University of California
Los Angeles, CA, USA

Sponsor: Nokia Corporation

IEEE Reynold B. Johnson Data Storage Device Technology Award
Kinam Kim
Samsung Electronics
Gyeonggi-Do, Korea

Sponsor: Hitachi Global Storage Technologies

IEEE Reynold B. Johnson Information Storage Systems Award
Marshall Kirk McKusick
Consultant
Berkeley, CA, USA

Sponsor: IBM Almaden Research Center

IEEE Richard Harold Kaufmann Award
Ronald Gordon Harley
Georgia Institute of Technology
Atlanta, GA, USA

Sponsor: IEEE Industry Applications Society

IEEE Joseph F. Keithley Award in Instrumentation and Measurement
Bryan Kibble
Consultant
Hampton, United Kingdom

Sponsor: Keithley Instruments, Inc.

IEEE Gustav Robert Kirchhoff Award
Ernest S. Kuh
University of California
Berkeley, CA, USA

Sponsor: IEEE Circuits and Systems Society

IEEE Koji Kobayashi Computers and Communications Award
Nick McKeown
Stanford University
Palo Alto, CA, USA

Sponsor: NEC Corporation

IEEE William E. Newell Power Electronics Award
Tadashi Fukao
Consultant
Yokohama, Japan

Sponsor: IEEE Power Electronics Society

IEEE Daniel E. Noble Award
Larry F. Weber (retired)
Plasmaco, Inc.
Highland, NY, USA

Sponsor: Motorola Foundation

IEEE Donald O. Pederson Award in Solid-State Circuits
Teresa H. Meng
Stanford University
Stanford, CA, USA

Sponsor: IEEE Solid-State Circuits Society

IEEE Frederik Philips Award
Shojiro Asai
Rigaku Corporation
Tokyo, Japan

Sponsor: Philips Electronics NV

IEEE Photonics Award
Robert L. Byer
Stanford University
Stanford, CA, USA

Sponsor: IEEE Photonics Society

IEEE Emanuel R. Piore Award
David J. DeWitt
Microsoft Jim Gray Systems Lab
Madison, WI, USA

Sponsor: IEEE Emanuel R. Piore Award Fund

IEEE Judith A. Resnik Award
Sudhakar K. Rao
Lockheed Martin Space Systems
Newton, PA, USA

Sponsors: IEEE Aerospace and Electronic Systems, IEEE Control Systems, and IEEE Engineering in Medicine and Biology Societies

IEEE Robotics and Automation Award
Antal K. Bejczy (retired)
JPL, California Institute of Technology
Pasadena, CA, USA

Sponsor: IEEE Robotics and Automation Society

IEEE Life Fellow and 2009 IEEE Medal of Honor recipient Robert H. Dennard, (second from left) received the National Academy of Engineering (NAE) Charles Stark Draper Prize for his invention of and contributions to the development of Dynamic Random Access Memory. Shown here with him are, from left: Charles M. Vest, NAE president; Irwin M. Jacobs, NAE Council chair; and Jim Shields, president and chief executive officer, Charles Stark Draper Laboratory Inc. (Photo courtesy of National Academy of Engineering)

IEEE Fellow Eesa Bastaki (foreground at right) received the United Emirates (UAE) Appreciation Award for Science, Art and Literature, in Sciences, from His Highness Sheikh Khalifa Bin Zayed Al Nahhayan, UAE president. At far left is His Highness Sheikh Mohammed Bin Rashed Al Maktoum, UAE vice president and prime minister and ruler of Dubai.

IEEE Frank Rosenblatt Award
John J. Hopfield
Princeton University
Princeton, NJ, USA

Sponsor: IEEE Computational Intelligence Society

IEEE David Sarnoff Award
Yasuhiko Arakawa
University of Tokyo
Tokyo, Japan

Kam Yin Lau
University of California
Berkeley, CA, USA

Kerry John Vahala
California Institute of Technology
Pasadena, CA, USA

Sponsor: Sarnoff Corporation

IEEE Charles Proteus Steinmetz Award
James T. Carlo
J. Carlo Consulting, LLC
Dallas, TX, USA

Sponsor: IEEE Standards Association

IEEE Eric E. Sumner Award
Roberto Padovani
QUALCOMM, Inc.
San Diego, CA, USA

Sponsor: Alcatel-Lucent Bell Labs

IEEE Nikola Tesla Award
Donald W. Novotny
University of Wisconsin-Madison
Madison, WI, USA

Sponsors: The Grainger Foundation and the IEEE Power & Energy Society

IEEE Kiyo Tomiyasu Award
Shih-Fu Chang
Columbia University
New York, NY, USA

Sponsors: Dr. Kiyo Tomiyasu, IEEE Geoscience and Remote Sensing Society, IEEE Microwave Theory and Techniques Society and KDDI R&D Laboratories, Inc.

IEEE Leon K. Kirchmayer Graduate Teaching Award
Roger W. Brockett
Harvard University
Cambridge, MA, USA

Sponsor: Leon K. Kirchmayer Memorial Fund

IEEE Undergraduate Teaching Award
John C. Bean
University of Virginia
Charlottesville, VA, USA

Sponsor: IEEE Education Society

IEEE Donald G. Fink Prize Paper Award
Daniel J. Costello, Jr.
University of Notre Dame
Notre Dame, IN, USA

G. David Forney, Jr.
Massachusetts Institute of Technology
Cambridge, MA, USA

For their paper entitled: "Channel Coding: The Road to Channel Capacity," Proceedings of the IEEE, Vol. 95, No. 6, June 2007, pp. 1150–1177, DOI: 10.1109/JPROC.2007.895188

Sponsor: IEEE Life Members Committee

2009 Class of IEEE Fellows

In 2009, 302 IEEE Senior Members were elevated to the grade of IEEE Fellow. This honor is the highest membership grade that any IEEE member can achieve and is presented annually to no more than one-tenth of one percent of the voting membership as of 31 December of the preceding year. Being an IEEE Fellow recognizes outstanding members for their significant accomplishments in advancing engineering, science and technology, and for their contributions to the IEEE mission.

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Message from the Treasurer

The IEEE Statement of Financial Position reflects total assets of US$380.2 million at 31 December 2009. This represents approximately a 22.2 percent increase from 2008, while IEEE total liabilities of US$151.0 million decreased by approximately 1.3 percent over the same period. Overall, IEEE Net Assets ("Reserves") increased to US$229.2 million from the 2008 year-end balance of US$158.1 million due to investment gains and an operating net surplus.

In 2009, IEEE had total revenues of US$389.7 million, an increase of US$47.3 million from 2008 as shown by the Statement of Activities. The increase in revenue was primarily due to the following:

1. Intellectual property (IP) revenue increased US$12.1 million, primarily due to sales of the IEEE Electronic Library (IEL), which represented US$14.0 million of the increase. This was partially offset by a decrease in other IP revenues.
2. Conference revenue decreased US$6.1 million, exclusive of intellectual property revenue from conference proceedings included above. The decrease between 2009 and 2008 was primarily due to the Transmission & Distribution (T&D) conference revenue in 2008 of US$7.4 million. This conference is held every other year.
3. Societies Operations revenue decreased US$3.3 million. This decrease was mostly related to US$4.1 million of revenue for the sale of the Washington, D.C. building in 2008.
4. Societies Member & Non Member revenue decreased US$2.3 million.
5. Other revenues decreased US$161,000.
6. Net investment revenue increased US$50.2 million; total net investment was US$50.2 million in 2009 versus a loss of US$70.9 million in 2008. Please note that in 2008, the investment loss was shown as an expense rather than a decrease in revenue.

The operating surplus in 2009 was US$21.4 million, an increase of US$8.9 million from 2008. This increase was primarily due to expense savings of US$9.6 million as IEEE continued to operate in a cost containment mode. Slightly offsetting this expense savings was a net decrease in revenue of US$0.7 million.

The 2009 operating surplus of US$21.4 million, coupled with investment gains and other items of US$49.7 million, contributed to an overall net surplus of US$71.1 million.

IEEE received an unqualified opinion from Mitchell & Titus, LLP in the Report of Independent Auditors. The independent auditors met with the IEEE Audit Committee to discuss the scope and results of their audit, their review on the adequacy of internal accounting controls, and the quality of financial reporting prior to issuing their opinion.

IEEE is tax-exempt under Section 501(c)(3) of the Internal Revenue Code. The IEEE Foundation is a separately incorporated affiliate of IEEE; accordingly, its audited financial statements are not included in the accompanying documents.

I submit these reports with confidence that IEEE continues to be a financially sound organization.

Peter W. Staecker, 2009 IEEE Treasurer

Report of Independent Auditors

The Board of Directors
The Institute of Electrical and Electronics Engineers, Inc.

We have audited the accompanying statement of financial position of The Institute of Electrical and Electronics Engineers, Inc. (the "Institute") as of December 31, 2009, and the related statements of activities and cash flows for the year then ended. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements based on our audit. The prior year financial statements were audited by other auditors and, in their report dated June 5, 2009, they expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with auditing standards generally accepted in the U.S. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Institute's internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of The Institute of Electrical and Electronics Engineers, Inc. at December 31, 2009, and the changes in its net assets and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

Mitchell & Titus, LLP

New York, New York
June 3, 2010

Statements of Financial Position

December 31, 2009 and 2008

	2009	2008
Assets		
Current assets		
Cash and cash equivalents	$ 10,221,900	$ 10,082,500
Accounts receivable, less allowance for doubtful accounts of $1,449,600 in 2009 and $1,050,100 in 2008	15,356,000	17,375,900
Inventories, prepaid expenses and other assets	14,743,400	13,417,300
Investments	293,132,800	226,205,800
Total current assets	333,454,100	267,081,500
Long-term investments	191,400	191,400
Land, buildings and equipment, net of accumulated depreciation and amortization	46,507,800	43,848,800
Total assets	$ 380,153,300	$ 311,121,700
Liabilities and net assets		
Current liabilities		
Accounts payable and accrued expenses	$ 20,401,800	$ 29,032,300
Current portion of accrued pension and other benefits expense	206,700	204,800
Deposits by IEEE Foundation, Incorporated	1,603,600	2,046,500
Trading liabilities	247,600	683,500
Debt obligations	5,986,800	7,085,100
Current portion of capital lease obligations	1,236,100	1,166,600
Deferred income		
Dues and assessments	38,314,200	35,092,700
Subscriptions and other	66,931,200	52,178,900
Total current liabilities	134,928,000	127,490,400
Long-term liabilities		
Obligations under capital leases, less current portion	1,895,000	2,045,500
Accrued pension and other benefits expense, less current portion	14,172,900	23,520,300
Total liabilities	150,995,900	153,056,200
Commitments		
Net assets		
Unrestricted	226,380,000	155,563,200
Temporarily restricted	2,586,000	2,310,900
Permanently restricted	191,400	191,400
Total net assets	229,157,400	158,065,500
Total liabilities and net assets	**$ 380,153,300**	**$ 311,121,700**

See accompanying notes.

Statement of Activities

Year Ended December 31, 2009

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue				
Membership and public imperatives	$ 63,114,100	$ 286,000	$ –	$ 63,400,100
Periodicals	126,319,900	–	–	126,319,900
Conferences	124,403,100	–	–	124,403,100
Standards	23,661,900	557,900	–	24,219,800
Investment income, net	50,154,600	54,600	–	50,209,200
Other income	1,108,300	–	–	1,108,300
Net assets released from restrictions	623,400	(623,400)	–	–
Total revenue	389,385,300	275,100	–	389,660,400
Expenses				
Program services				
Membership and public imperatives	87,156,300	–	–	87,156,300
Periodicals	106,627,100	–	–	106,627,100
Conferences	100,279,900	–	–	100,279,900
Standards	20,262,600	–	–	20,262,600
Total program services	314,325,900	–	–	314,325,900
Supporting services				
General and administrative	11,363,200	–	–	11,363,200
Total expenses	325,689,100	–	–	325,689,100
Credit for pension and related benefits other than net periodic pension cost	7,120,600	–	–	7,120,600
Change in net assets	70,816,800	275,100	–	71,091,900
Net assets, beginning of year	155,563,200	2,310,900	191,400	158,065,500
Net assets, end of year	**$ 226,380,000**	**$ 2,586,000**	**$ 191,400**	**$ 229,157,400**

See accompanying notes.

Statement of Activities

Year Ended December 31, 2008

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue				
Membership and public imperatives	$ 65,840,700	$ 400,000	$ –	$ 66,240,700
Periodicals	121,788,700	–	–	121,788,700
Conferences	129,498,700	–	–	129,498,700
Standards	22,695,800	883,200	–	23,579,000
Other income	1,225,800	43,600	–	1,269,400
Net assets released from restrictions	542,200	(542,200)	–	–
Total revenue	341,591,900	784,600	–	342,376,500
Expenses				
Program services				
Membership and public imperatives	90,730,400	–	–	90,730,400
Periodicals	108,291,400	–	–	108,291,400
Conferences	107,454,600	–	–	107,454,600
Standards	20,121,100	–	–	20,121,100
Total program services	326,597,500	–	–	326,597,500
Supporting services				
General and administrative	9,598,600	–	–	9,598,600
Investment loss, net	70,884,700	58,800	–	70,943,500
Pension and related benefits expense other than net periodic pension cost	23,857,700	–	–	23,857,700
Total expenses	430,938,500	58,800	–	430,997,300
Change in net assets	(89,346,600)	725,800	–	(88,620,800)
Net assets, beginning of year	244,909,800	1,585,100	191,400	246,686,300
Net assets, end of year	**$ 155,563,200**	**$ 2,310,900**	**$ 191,400**	**$ 158,065,500**

See accompanying notes.

Statements of Cash Flows

Year Ended December 31, 2009

	2009	2008
Operating activities		
Change in net assets	$ 71,091,900	$ (88,620,800)
Adjustments to reconcile change in net assets to net cash provided by operating activities		
Depreciation and amortization expense	9,359,200	9,239,100
Gain on disposal of land, buildings and equipment	–	(2,363,900)
Net realized and unrealized (gains) losses from investments	(45,712,500)	78,412,800
Change in fair value of interest rate swaps	(128,300)	152,900
Change in assets and liabilities		
Accounts receivable, net	2,019,900	109,400
Inventories, prepaid expenses and other assets	(1,326,100)	(1,267,000)
Accounts payable and accrued expenses	(8,954,300)	(151,600)
Accrued pension and other benefits expense	(9,345,500)	23,857,800
Deposits by IEEE Foundation, Incorporated	(442,900)	648,600
Deferred income	17,973,800	10,332,000
Net cash provided by operating activities	34,535,200	30,349,300
Investing activities		
Proceeds from sale of investments	164,514,700	240,750,500
Proceeds from sale of land, buildings and equipment		5,104,600
Purchase of land, buildings and equipment	(10,503,300)	(9,889,200)
Purchases of investments	(186,165,100)	(261,671,700)
Net cash used in investing activities	(32,153,700)	(25,705,800)
Financing activities		
Change in cash overdraft	323,800	(1,350,500)
Payment of debt obligations	(970,000)	(930,000)
Payment of capital lease obligations	(1,595,900)	(1,614,200)
Net cash used in financing activities	(2,242,100)	(3,894,700)
Net increase in cash and cash equivalents	139,400	748,800
Cash and cash equivalents at beginning of year	10,082,500	9,333,700
Cash and cash equivalents at end of year	$ 10,221,900	$ 10,082,500
Supplemental data		
Interest paid	$ 729,000	$ 970,900
Noncash items		
Acquisition of equipment through capital lease obligation	$ 1,514,900	$ 2,050,600

See accompanying notes.

NOTE 1 ORGANIZATION AND NATURE OF OPERATIONS

The objectives of The Institute of Electrical and Electronics Engineers, Inc. (the "Institute" or "IEEE") are (a) scientific and educational, directed toward the advancement of the theory and practice of electrical engineering, electronics engineering, computer engineering, computer sciences, and the allied branches of engineering and related arts and sciences and (b) professional, directed toward the advancement of the standing of the members of the profession it serves.

Implementation of the Institute's objectives is primarily performed through regions, sections, societies and councils and their financial results are incorporated in the accompanying Institute's financial statements. These units were formed to serve the specialized technical interests of members and to coordinate these with the local activities of the sections and the broader activities of the Institute. The societies and councils promote the technical interests of their members through symposia, conferences and various publications.

NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation
The Institute's financial statements are presented in conformity with U.S. generally accepted accounting principles and have been prepared on the actual basis of accounting.

Financial Statements
Resources are reported for accounting purposes into separate classes of net assets based on the existence or absence of donor-imposed restrictions. In the accompanying financial statements, net assets that have similar characteristics have been combined into similar categories as follows:

Permanently Restricted—Net assets that are subject to donor-imposed stipulations that they be maintained permanently by the Institute. Such assets primarily include the Institute's permanent endowment funds. The principal of these endowments cannot be expended. The income earned can only be used as designated by the donor, and is then recorded as temporarily restricted.

Temporarily Restricted—Net assets whose use by the Institute is subject to donor-imposed stipulations that can be fulfilled by actions of the Institute pursuant to those stipulations or that expire by the passage of time. These temporarily restricted net assets are designated principally for awards, medals and specific projects.

Unrestricted—Net assets that are not subject to donor-imposed stipulations. Unrestricted net assets may be designated for specific purposes by action of the Board of Directors or may otherwise be limited by contractual agreements with outside parties. Unrestricted net assets can be utilized to carry out any of the purposes of the Institute.

The Institute's endowment consists of individual funds established for a variety of purposes. Its endowment includes donor-restricted endowment funds. As required by U.S. generally accepted accounting principles, net assets associated with endowment funds are classified and reported based on the existence or absence of donor-imposed restrictions.

Expenses are generally reported as decreases in unrestricted net assets. Expiration of donor-imposed stipulations that simultaneously increase unrestricted net assets and decrease temporarily restricted net assets are reported as net assets released from restrictions. Temporarily restricted revenues received and expended during the same fiscal year are recorded as unrestricted revenues and expenses in the statements of activities.

The financial statements of the Institute should be read in conjunction with the financial statements of IEEE Foundation, Incorporated, a related organization (see Note 14).

Revenue Recognition
Revenue from membership dues and yearly periodical subscriptions is recognized on a straight line basis over the period to which it pertains. Amounts received in advance are included in deferred income.

Revenue and expense from conferences are recorded on the accrual basis in the year the conferences are held. Amounts received in advance are included in deferred income.

Revenue from contributions is recorded at its fair value in the period received including unconditional promises to give and is classified based upon the existence or absence of donor-imposed restrictions.

Contributions received by the Institute are primarily private and governmental grants containing donor-imposed restrictions as to their use. These restrictions are usually fulfilled within a two-year period by satisfying the respective restrictions. Standards revenue primarily includes revenue from periodical subscriptions, publications and standards development groups, which are similar to conferences.

Cash and Cash Equivalents
Cash and cash equivalents include highly liquid short-term investments purchased with maturities of three months or less from the date of acquisition.

Accounts Receivable and Allowance for Doubtful Accounts
Accounts receivable are recorded at the invoiced amount and do not bear interest. Management reviews a customer's credit history before extending credit. The Institute has recorded a provision for estimated losses resulting from the inability of its customers to make required payments based on historical experience and periodically adjusts these provisions to reflect actual experience.

Investments
Investments, except special funds, are carried at fair value, which is generally determined on the basis of quoted market prices (see Note 3). Special funds are managed by an investment adviser and management group of companies (the "Investment Manager") and invested in trusts which in turn are invested primarily in marketable U.S. equity and debt securities. The special funds investments are carried at the unit price computed by the Investment Manager based on the fair value of the respective funds' net assets. There are no sale restrictions on the redemption of these funds. These funds require approximately one week after the trade date for cash to be wired back to the Institute. The Institute invests in these funds for diversification of its investment portfolio. See Note 12 for more information regarding the fair value measurement of these investments.

Realized gains and losses on sales of investments are determined on an average cost basis.

Land, Buildings and Equipment
Land, buildings and equipment are stated at cost, including interest expense capitalized during the period of construction of the asset, or period of development up to the time that it is ready for intended use, in the case of internal-use software. Depreciation is provided on a straight-line basis over the estimated useful life of the asset. Buildings, furniture and equipment are depreciated over periods ranging from three to thirty-five years. Assets under capital leases are depreciated over the term of the lease. Building improvements are amortized over twenty years.

Upon retirement or other disposition of fixed assets, the cost and related accumulated depreciation are removed from the accounts and the resulting gains or losses, if any, are reflected in the statements of activities.

Accounts Payable and Accrued Expenses
Included in accounts payable and accrued expenses are cash overdrafts. At December 31, 2009 and 2008, these cash overdrafts amounted to $1,884,100 and $1,560,300, respectively.

Use of Estimates
The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Reclassifications
Certain 2008 amounts have been reclassified to conform with the 2009 presentation. In addition, the Institute reclassified approximately $58 million of accounts receivable at December 31, 2008 pertaining to the subsequent period's billings of its electronic subscription products as a reduction of deferred revenue to better reflect the substance of the transactions.

Recent Accounting Pronouncement
The Institute adopted the new subsequent events guidance, *Subsequent Events*. This new guidance establishes general standards of accounting for and disclosures of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. There was no effect on the Institute's financial position or changes in its net assets as a result of the adoption.

NOTE 3 INVESTMENTS

Investments and trading liabilities at December 31, 2009 and 2008 consist of the following:

	2009 Cost	2009 Fair Value	2008 Cost	2008 Fair Value
Investments				
Short-term investments				
Due from brokers and accrued interest	$ –	$ –	$ 2,800	$ 2,800
Term deposits	1,856,400	1,856,400	1,899,200	1,899,200
Cash and equivalents	723,000	723,000	725,300	725,300
Money market funds	59,628,000	59,628,000	43,070,800	43,070,800
	62,207,400	62,207,400	45,698,100	45,698,100
Equity investments				
Equity securities	86,063,900	94,869,800	82,358,600	63,682,900
Mutual funds	54,589,100	47,630,300	48,456,600	28,423,200
Overnight investments	1,675,900	1,675,900	3,825,200	3,825,200
Due from brokers and accrued interest and fees	127,200	127,200	198,600	198,600
	142,456,100	144,303,200	134,839,000	96,129,900
Fixed-income investments				
Term deposits	414,700	414,700	785,400	785,400
Mutual funds	71,427,000	69,864,300	80,928,500	71,864,800
	71,841,700	70,279,000	81,713,900	72,650,200
Special funds				
Investment in commingled trusts	17,843,300	16,534,600	17,169,300	11,919,000
	17,843,300	16,534,600	17,169,300	11,919,000
Total investments	294,348,500	293,324,200	279,420,300	226,397,200
Trading liabilities				
Short-term investments				
Due to brokers and accrued fees	(17,600)	(17,600)	(9,300)	(9,300)
Equity investments				
Due to brokers and accrued fees	(208,100)	(208,100)	(654,300)	(654,300)
Fixed income investments				
Due to brokers and accrued fees	(21,900)	(21,900)	(19,900)	(19,900)
Total trading liabilities	(247,600)	(247,600)	(683,500)	(683,500)
Net investments	**$ 294,100,900**	**$ 293,076,600**	**$ 278,736,800**	**$ 225,713,700**

NOTE 4 INVESTMENT INCOME (LOSS)

Net investment income (loss) for the years ended December 31, 2009 and 2008 consisted of the following:

	2009	2008
Interest and dividends	$ 4,496,700	$ 7,469,300
Realized losses, net	(6,286,300)	(600,200)
Change in net unrealized gains (losses)	51,998,800	(77,812,600)
	$ 50,209,200	$ (70,943,500)

Investment expense amounting to $595,100 and $615,000 in 2009 and 2008, respectively, is netted against investment income.

NOTE 5 LAND, BUILDINGS AND EQUIPMENT

Fixed assets, carried at cost, and the related accumulated depreciation and amortization at December 31, 2009 and 2008 consist of the following:

	2009 Cost	2009 Accumulated Depreciation and Amortization	2008 Cost	2008 Accumulated Depreciation and Amortization
Buildings	$ 17,956,300	$ 10,560,300	$ 17,956,300	$ 10,049,100
Furniture and equipment	63,001,200	39,066,000	64,790,200	36,088,300
Building improvements	7,985,900	2,805,400	7,637,400	2,379,800
	88,943,400	52,431,700	90,383,900	48,517,200
Land	874,000	–	874,000	–
Information systems upgrade in process	9,122,100	–	1,108,100	–
Total	**$ 98,939,500**	**$ 52,431,700**	**$ 92,366,000**	**$ 48,517,200**

Furniture and equipment include assets under capital leases of $5,469,000 and $5,970,000 as of December 31, 2009 and 2008, respectively. Accumulated amortization of assets recorded under capital leases amounted to $2,705,400 and $2,763,300 at December 31, 2009 and 2008, respectively.

Fixed assets include capitalized interest of $141,700 and $21,700 at December 31, 2009 and 2008, respectively.

NOTE 6 DEBT OBLIGATIONS

Debt obligations at December 31, 2009 and 2008 consist of loans from proceeds of bonds issued by the New Jersey Economic Development Authority ("NJEDA"), as follows:

	2009	2008
NJEDA 2001 Series A Bonds, variable rate, annual principal and sinking fund payments through April 1, 2014 (the "Series A Bonds"); collateralized by irrevocable direct-pay letter of credit issued by Wachovia Bank.	$ 3,850,000	$ 4,520,000
NJEDA 2001 Series B Bonds, variable rate, annual principal and sinking fund payments through April 1, 2014 (the "Series B Bonds"); collateralized by irrevocable direct-pay letter of credit issued by Wachovia Bank.	1,750,000	2,050,000
	5,600,000	6,570,000
Liability under swap agreements:		
Series A Bonds	269,200	359,500
Series B Bonds	117,600	155,600
	$ 5,986,800	$ 7,085,100

The Series A Bonds consist of variable-rate bonds issued in the aggregate amount of $7,065,000 on May 10, 2001 for the purpose of advance refunding a portion of the 1994 Bonds to take advantage of lower interest rates. The advance refunding resulted in the defeasance and legal extinguishment of the callable portion of the 1994 Bonds due from 2005 to 2014 totaling $6,390,000. In conjunction with the issuance of the Series A Bonds, the Institute entered into a swap agreement on April 24, 2001 with Wachovia Bank whereby the Institute's interest rate obligation under the Series A Bonds is fixed at 4.55% per annum (the "Series A Swap"). The underlying notional amount of the Series A Swap amortizes through April 1, 2014 and matches the outstanding balance of the Series A Bonds, which amounted to $3,850,000 and $4,520,000 as of December 31, 2009 and 2008, respectively. The estimated fair value of the Series A Swap reflects a liability of approximately $269,200 and $359,500 at December 31, 2009 and 2008, respectively. The change in value of the Series A Swap was $90,300 and $101,800 in 2009 and 2008, respectively. The Series A Bonds are due on April 1, 2014, but are subject to mandatory annual sinking fund redemption on April 1 of each year in amounts ranging from $705,000 in 2010 to $840,000 in 2014.

The Series B Bonds consist of variable-rate bonds issued in the aggregate amount of $3,810,000 on September 28, 2001 to permanently finance the renovation of a 15,000 square-foot warehouse facility into a new computer center and related equipment purchases and installations. In conjunction with the issuance of the Series B Bonds, the Institute entered into a swap agreement dated August 22, 2001 with Wachovia Bank whereby the Institute's interest rate obligation under the Series B Bonds is fixed at 4.34% per annum (the "Series B Swap"). The underlying notional amount of the Series B Swap amortizes through April 1, 2014 and matches the outstanding balance of the Series B Bonds, which amounted to $1,750,000 and $2,050,000 as of December 31, 2009 and 2008, respectively. The estimated fair value of the Series B Swap reflects a liability of approximately $117,600 and $155,600 at December 31, 2009 and 2008, respectively. The change in value of the Series B Swap was $38,000 and $51,100 in 2009 and 2008, respectively. The Series B Bonds are due on April 1, 2014, but are subject to mandatory annual sinking fund redemption on April 1 of each year in amounts ranging from $315,000 in 2010 to $385,000 in 2014.

An irrevocable standby Letter of Credit and Reimbursement Agreement with Wachovia Bank, dated May 1, 2001 and amended on September 1, 2001, collateralizes both Series A Bonds and Series B Bonds. The letter of credit is available if any of the Series A Bonds or the Series B Bonds are tendered and are unable to be remarketed. If the letter of credit is used, the Institute would be required to reimburse Wachovia Bank on demand, including certain fees and charges. U.S. generally accepted accounting principles require that the current portion of long-term debt for bonds subject to such a demand purchase option be calculated based upon the letter of credit terms. Accordingly, at December 31, 2009 and 2008, the entire amount outstanding on the Series A Bonds and the Series B Bonds are classified as a current liability in the accompanying statements of financial position.

The letter of credit amounted to $5,684,700 at December 31, 2009.

Future scheduled principal repayments required under the NJEDA Bond Agreements as of December 31, 2009 are as follows:

2010	$ 1,020,000
2011	1,070,000
2012	1,115,000
2013	1,170,000
2014	1,225,000
Total	**$ 5,600,000**

The Institute maintains a $25,000,000 credit facility consisting of $13,750,000 with Wachovia Bank and $11,250,000 with JPMorgan Chase Bank, N.A. (previously The Bank of New York) under a revolving credit agreement dated February 28, 2002, as amended. The Institute is charged commitment fees, which amounted to $96,300 in 2009 and $31,800 in 2008, on the unused portion of the credit facility. The credit facility was not utilized in 2009 and 2008. The Institute had no outstanding borrowings under the credit facility at December 31, 2009 or 2008. On April 27, 2009 the expiration date of the revolving credit agreement, as amended, was extended until August 30, 2011.

As of December 31, 2009, the amount of the Line of Credit for issuing standby letters of credit was $1,690,000 with HSBC Bank USA, N.A. The Institute is charged 1% of the face amount, upon issuance, of the standby letters of credit.

The Institute is required to maintain certain financial ratios under the amended and restated Letter of Credit and Reimbursement Agreement with Wachovia Bank and the revolving credit agreement with Wachovia Bank and JPMorgan Chase Bank, N.A. At December 31, 2009, the Institute is in compliance with these financial covenants.

Interest expense amounted to $729,000 for 2009 and $920,500 for 2008.

NOTE 7 OBLIGATIONS UNDER CAPITAL LEASES

The approximate annual rental payments for obligations under capital leases follow:

2010	$ 1,452,600
2011	1,059,200
2012	769,100
2013	392,700
2014	142,000
Total	**3,815,600**
Less: amount representing interest imputed at an average rate of 5.2%	684,500
Present value of minimum lease payments	$ 3,131,100

NOTE 8 COMMITMENTS AND CONTINGENCIES

At December 31, 2009, minimum rental commitments under noncancelable operating leases for office space and computer equipment are as follows:

2010	$ 2,077,400
2011	1,801,300
2012	1,539,800
2013	907,700
2014	816,600
Thereafter	3,578,900
	$ 10,721,700

The leases for the office space are subject to escalation. Total rent expense for noncancelable operating leases amounted to $2,677,300 and $2,992,500 in 2009 and 2008, respectively.

At December 31, 2009, the Institute had an irrevocable standby letter of credit in the amount of $583,000 with Wachovia Bank, which serves as a security deposit as required by the terms of its lease agreement with Park Avenue Building Company, LLC.

The Institute is currently involved in certain litigation and claims arising in the ordinary course of business. The Institute's management believes that the amount of any liability arising out of these actions that may be sustained, if any, beyond existing insurance liability coverages would not have a material impact on the accompanying financial statements.

NOTE 9 PENSION AND OTHER POSTRETIREMENT BENEFITS

The Institute sponsors two qualified pension plans and one nonqualified pension plan and other postretirement benefit plans for its employees. In November 2006, the Institute's Board of Directors approved the freezing of the qualified employee benefit plans as of June 30, 2007 and the implementation of a defined contribution plan effective July 1, 2007.

The following tables provide a reconciliation of the changes in the plans' benefit obligations and fair value of assets over the two-year period ended December 31, 2009, and a statement of the funded status as of December 31 of both years:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Reconciliation of benefit obligation				
Obligation at January 1	$ 64,331,200	$ 65,019,300	$ 3,184,900	$ 2,971,000
Service cost	255,000	–	155,600	122,500
Interest cost	3,741,100	3,859,600	189,000	179,600
Actuarial loss	2,737,700	1,144,100	174,800	99,000
Benefit payments	(2,885,000)	(5,691,800)	(189,100)	(187,200)
Obligation at December 31	$ 68,180,000	$ 64,331,200	$ 3,515,200	$ 3,184,900
Reconciliation of fair value of plan assets				
Fair value of plan assets at January 1	$ 43,791,000	$ 68,122,800	$ –	$ –
Actual return on plan assets	11,891,900	(18,657,700)	–	–
Employer contributions	4,517,700	17,700	189,100	187,200
Benefit payments	(2,885,000)	(5,691,800)	(189,100)	(187,200)
Fair value of plan assets at December 31	$ 57,315,600	$ 43,791,000	$ –	$ –
Funded status				
Funded status at December 31	$ (10,864,300)	$ (20,540,200)	$ (3,515,200)	$ (3,184,900)

The accumulated benefit obligation for all defined benefit pension plans was $68,179,900 at December 31, 2009 and $64,331,200 at December 31, 2008.

At December 31, the funded status of the plans is reported in the statements of financial position as follows:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Current liabilities	$ (17,700)	$ (17,700)	$ (189,000)	$ (187,100)
Noncurrent liabilities	(10,846,600)	(20,522,500)	(3,326,300)	(2,997,800)
Net amount recognized	$ (10,864,300)	$ (20,540,200)	$ (3,515,300)	$ (3,184,900)

Amounts recognized in changes in unrestricted net assets for the year ended December 31 consist of:

	Pension Benefits	Other Benefits
	2009	2009
Net (gains) loss	$ (7,203,100)	$ 161,800
Prior service cost	(300)	(33,200)
Net transition obligation	–	(45,800)
Total	**$ (7,203,400)**	**$ 82,800**

Cumulative amounts recognized in changes in unrestricted net assets and not yet recognized in net periodic benefit cost as of December 31 consist of:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Net loss	$ 13,155,400	$ 20,358,500	$ 628,900	$ 467,100
Prior service cost	500	800	89,400	122,600
Net transition obligation	–	–	228,800	274,600
Total	**$ 13,155,900**	**$ 20,359,300**	**$ 947,100**	**$ 864,300**

Information for benefit plans with an accumulated benefit obligation in excess of plan assets as of December 31 follows:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Projected benefit obligation	$ 68,179,900	$ 64,331,200	$ 3,515,200	$ 3,184,900
Accumulated benefit obligation	68,179,900	64,331,200	–	–
Fair value of plan assets	57,315,600	43,791,000	–	–

The following table provides the components of net periodic benefit cost for the plans for 2009 and 2008:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Service cost	$ 255,000	$ –	$ 155,600	$ 122,500
Interest cost	3,741,100	3,859,600	189,000	179,700
Expected return on plan assets	(3,171,300)	(4,873,800)	–	–
Amortization of transition obligation	–	–	45,800	45,800
Amortization of prior service cost	300	300	33,200	33,200
Amortization of net loss	1,220,100	8,600	13,000	4,600
Net periodic (benefit) cost	$ 2,045,200	$ (1,005,300)	$ 436,600	$ 385,800

The estimated amount of net unrestricted assets to be recognized as net periodic benefit cost in the next fiscal year is as follows:

	Pension Benefits	Other Benefits
	2009	2009
Transition obligation	$ –	$ 45,800
Prior service cost	300	33,200
Net loss	538,900	17,900
Total	**$ 539,200**	**$ 96,900**

The prior service costs are amortized on a straight-line basis over the average remaining service period of active participants. Gains and losses in excess of 10% of the greater of the benefit obligation and the market-related value of assets are amortized over the average remaining service period of active participants.

The Institute has multiple noncontributory nonpension postretirement benefit plans.

The assumptions used in the measurement of the Institute's benefit obligation are shown in the following table:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Assumptions as of December 31				
Discount rate	5.75%	6.00%	5.75%	6.00%
Rate of compensation increase	N/A	N/A	N/A	N/A

The assumptions used in the measurement of the net periodic benefit cost are shown in the following table:

	Pension Benefits		Other Benefits	
	2009	2008	2009	2008
Weighted-average assumptions as of December 31				
Discount rate	6.00%	6.25%	6.00%	6.25%
Expected return on plan assets	7.50%	7.50%	N/A	N/A
Rate of compensation increase	N/A	N/A	N/A	N/A

The health care plan benefits are a flat dollar reimbursement to the retirees toward health care premiums. No increase in the reimbursement amount is assumed.

Plan Assets

IEEE determines its assumptions for the expected rate of return on plan assets for its retirement plans based on ranges of anticipated rates of return for each asset class. A weighted range of nominal rates is then determined based on target allocations for each asset class. IEEE considers the expected rate of return to be a longer-term assessment of return expectations and does not anticipate changing this assumption annually unless there are significant changes in economic conditions. The expected rate of return for each plan is based upon its expected asset allocation. Market performance over a number of earlier years is evaluated covering a wide range of economic conditions to determine whether there are sound reasons for projecting forward any past trends.

IEEE's pension and postretirement plan asset allocation for the U.S. plans at the end of 2009 and 2008, and the target allocation for 2009 by asset category based on asset fair values are as follows:

Asset Category	2009 Target Asset Allocation	Pension Assets at December 31 2009	Pension Assets at December 31 2008	Postretirement Assets at December 31 2009	Postretirement Assets at December 31 2008
Equity securities	65%	67%	62%	N/A	N/A
Debt securities	35%	31%	36%	N/A	N/A
Cash and cash equivalents	–	2%	2%	N/A	N/A
Total	**100%**	**100%**	**100%**	**N/A**	**N/A**

Third-party investment managers manage IEEE's pension plan assets. Assets are rebalanced, as the Institute deems appropriate. IEEE's investment strategy with respect to its pension asset is to maintain a diversified investment portfolio across several asset classes targeting an annual rate of return of 7.5% in 2009 and 2008, while ensuring that the accumulated benefit obligation is fully funded. To develop the expected long-term rate of return on assets assumption, the Institute considered the historical returns and the future expectations for returns for each asset class, as well as the target asset allocation of the pension portfolio.

IEEE's pension and postretirement funds' investment strategies are to invest in a prudent manner for the exclusive purpose of providing benefits to participants. The investment strategies are targeted to produce a total return that, when combined with IEEE's contributions to the funds, will maintain the funds' ability to meet all required benefit obligations. Risk is controlled through diversification of asset types and investments in domestic and international equities, fixed income securities and cash. The target asset allocation is 65% equities and 35% debt securities. The guidelines allow the managers to keep up to 5% in cash and cash equivalents. The contributions made during the years ended December 31, 2009 and 2008 were approximately $4,517,700 and $17,700, respectively.

Fair value hierarchy of the pension and postretirement funds' investments at December 31, 2009 are displayed in the table below. See Note 12 for an explanation of the fair value hierarchy levels and determination of fair value.

	Level 1	Level 2	Level 3	Total
Pension assets				
Short-term investments	$ 1,090,000	$ –	$ –	$ 1,090,000
Equity investments	29,231,800	–	–	29,231,800
Fixed-income investments	18,675,200	–	–	18,675,200
Mutual funds	1,077,300	7,241,300	–	8,318,600
	$ 50,074,300	$ 7,241,300	$ –	$ 57,315,600

Contributions
IEEE contributed $9.9 million to its qualified pension plans on March 30, 2010, which exceeds the minimum required contribution for the 2009 plan year.

IEEE expects to contribute approximately $18,000 to its nonqualified pension plan and approximately $189,000 to its other postretirement benefit plans during 2010.

Expected Benefit Payments	Pension Benefits	Other Benefits
2010	$ 4,325,000	$ 189,000
2011	3,412,700	191,100
2012	4,229,300	197,700
2013	3,702,300	201,400
2014	4,381,700	213,800
2015 to 2019	18,956,200	1,135,500

NOTE 10 401(K) SAVINGS AND INVESTMENT PLAN

The Institute has a defined contribution 401(k) Savings and Investment Plan (the "Plan") for eligible employees. Employees are eligible to participate in the Plan after the start of the next pay period following 30 days of employment. Under the Plan, employees may generally contribute from 2% to 16% of their salary; however, not in excess of Internal Revenue Service limitations. The Institute provides a 100% matching contribution up to 4% of each employee's salary. The Institute contributed $3,129,350 and $2,905,300 to the Plan in 2009 and 2008, respectively.

NOTE 11 TAX STATUS

The Institute is qualified under Section 501(c)(3) of the Internal Revenue Code as an organization exempt from federal income taxes.

NOTE 12 FINANCIAL INSTRUMENTS AND RISK MANAGEMENT

Cash
The Institute maintains cash balances which, at times, are in excess of the Federal Deposit Insurance Corporation insured amounts. The Institute mitigates this risk by placing its cash in high quality financial institutions.

Debt Obligations
The fair value of the Institute's debt obligations (including current installments) is estimated based on quoted market prices for similar debt of the same remaining maturities. At December 31, 2009 and 2008, the estimated fair value of the Institute's debt was $6,542,200 and $7,925,300, respectively. The Institute utilizes interest rate swap agreements to manage the risk on interest rates associated with its debt obligations.

Fair Value Measurement
The Institute adopted the provisions of *Fair Value Measurements* effective January 1, 2008. *Fair Value Measurements* establishes a hierarchy for the inputs used to measure fair value based on the source of the input, which generally range from quoted prices for identical instruments in a principal trading market (Level 1) to estimates determined using related market data (Level 3). Multiple inputs may be used to measure fair value; however, the level of fair value for each financial asset or liability presented below is based on the lowest significant input level within this fair value hierarchy.

The following table provides the fair value hierarchy of the Institute's financial assets and liabilities as of December 31, 2009:

	Level 1	Level 2	Level 3	Total
Financial assets				
Term deposits	$ –	$ 2,271,100	$ –	$ 2,271,100
Money market funds	59,628,000	723,000	–	60,351,000
Overnight investments	1,677,400	–	–	1,677,400
Commingled funds	–	16,534,600	–	16,534,600
Equity investments	94,953,500	–	–	94,953,500
Mutual funds	117,536,600	–	–	117,536,600
	$ 273,795,500	$ 19,528,700	$ –	$ 293,324,200
Financial liabilities				
Swap Agreement – Series A Bonds	$ –	$ 269,200	$ –	$ 269,200
Swap Agreement – Series B Bonds	–	117,600	–	117,600
	$ –	$ 386,800	$ –	$ 386,800

The following table provides the fair value hierarchy of the Institute's financial assets and liabilities as of December 31, 2008:

	Level 1	Level 2	Level 3	Total
Financial assets				
Term deposits	$ –	$ 2,684,600	$ –	$ 2,684,600
Money market funds	43,073,600	725,300	–	43,798,900
Overnight investments	3,833,100	–	–	3,833,100
Commingled funds	–	11,919,000	–	11,919,000
Equity investments	63,814,700	–	–	63,814,700
Mutual funds	100,346,900	–	–	100,346,900
	$ 210,068,300	$ 15,328,900	$ –	$ 226,397,200
Financial liabilities				
Swap Agreement – Series A Bonds	$ –	$ 359,500	$ –	$ 359,500
Swap Agreement – Series B Bonds	–	155,600	–	155,600
	$ –	$ 515,100	$ –	$ 515,100

Details on the methods and assumptions used to determine the fair values of the financial assets and liabilities are as follows:

Fair value measurements based on Level 1 inputs: Measurements that are most observable are based on quoted prices of identical instruments obtained from the principal markets in which they are traded. Closing prices are both readily available and representative of fair value. Market transactions occur with sufficient frequency and volume to assure liquidity. Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets that the Institute has the ability to access. Financial assets utilizing Level 1 inputs include certain U.S. mutual funds, money market funds, and common stock.

Fair value measurements based on Level 2 inputs: Measurements derived indirectly from observable inputs or from quoted prices from markets that are less liquid. Measurements based on Level 2 inputs include over-the-counter derivative instruments that are priced on an exchange traded curve, but have contractual terms that are not identical to exchange traded contracts. The Institute utilizes fair value measurements based on Level 2 inputs for debt obligations. Level 2 inputs utilize other than quoted prices included in level 1 that are observable for the asset, either directly or indirectly, for substantially the full term of the asset. The observable inputs are used in valuation models to calculate the fair value for the asset. Financial assets and liabilities utilizing Level 2 inputs include term deposits, cash equivalents, commingled funds and interest rate swaps.

Fair value measurements based on Level 3 inputs: Measurements that are least observable are estimated from related market data, determined from sources with little or no market activity for comparable contracts or are positions with longer durations. The Institute had no Level 3 assets or liabilities at December 31, 2009 or 2008.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Institute believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

NOTE 13 NET ASSETS

Temporarily restricted and permanently restricted net assets consist of the following:

	December 31 2009	December 31 2008
Temporarily restricted		
Grant funds held for specific purposes	$ 2,028,800	$ 1,875,600
Funds held for awards, medals and other specific purposes	557,200	435,300
	$ 2,586,000	$ 2,310,900
Permanently restricted		
Endowment principal for awards	$ 191,400	$ 191,400

Net assets that were released from donor restrictions by incurring expenses satisfying the restricted purposes during fiscal 2009 and 2008 were as follows:

	2009	2008
Grant funds held for specific purposes	$ 615,700	$ 534,500
Funds held for awards, medals and other specific purposes	7,700	7,700
	$ 623,400	$ 542,200

NOTE 14 RELATED PARTIES

IEEE Foundation, Incorporated

The Institute has transactions with IEEE Foundation, Incorporated (the "Foundation"), a related organization. The Foundation performs activities in support of the scientific and educational functions and programs of the Institute. During 2009, the Directors of the Institute and the Foundation deemed that certain costs which were previously allocated to the Foundation are no longer considered to be those of the Foundation. The Institute contributed $636,000 and $2,389,000 in 2009 and 2008, respectively, to the Foundation. The Institute provides certain accounting and administrative services to the Foundation. The Foundation paid $463,000 in 2009 and $2,548,900 in 2008 to the Institute for these support services. The Institute solicits contributions on behalf of the Foundation through its annual member renewal process. Total contributions solicited were $659,900 and $593,700 in 2009 and 2008, respectively. The Institute holds on deposit $1,603,600 and $2,046,500 from the Foundation at December 31, 2009 and 2008, respectively. These amounts are invested by the Institute on behalf of the Foundation. Receivables due from the Foundation include grants receivable of $166,200 and $362,000 at December 31, 2009 and 2008, respectively, and other receivables of $75,800 and $739,600 at December 31, 2009 and 2008, respectively. Amounts due to the Foundation were $156,200 and $127,100 at December 31, 2009 and 2008, respectively.

Summarized financial data of the Foundation for 2009 and 2008 are as follows:

	December 31 2009	December 31 2008
Total assets	$ 28,450,800	$ 24,859,800
Total liabilities	1,170,400	1,905,700
Net assets	$ 27,280,400	$ 22,954,100

	Year Ended December 31 2009	2008
Contributions	$ 3,251,300	$ 7,377,700
Change in beneficial interest in trust	571,200	(1,262,900)
Investment income (loss)	3,688,400	(6,940,000)
Expenses	3,184,500	4,817,000
Change in net assets	$ 4,326,400	$ (5,642,200)

IEEE-Industry Standards and Technology Organization

The Institute enters into transactions with the IEEE-Industry Standards and Technology Organization ("IEEE-ISTO"), a related organization. The IEEE-ISTO is an organization operating for the development of industry standards. The Institute provides certain professional services and facilities that are reimbursed by the IEEE-ISTO. Total combined revenues from these transactions were $217,700 and $192,600 for 2009 and 2008, respectively. Receivables due from the IEEE-ISTO at December 31, 2009 and 2008 are $0 and $169,100, respectively.

Summarized financial data of the IEEE-ISTO for 2009 and 2008 are as follows:

	December 31 2009 (Unaudited)	December 31 2008 (Audited)
Total assets	$ 21,370,200	$ 18,709,300
Total liabilities	20,914,400	18,257,600
Net assets	$ 455,800	$ 451,700

	Year Ended December 31 2009 (Unaudited)	2008 (Audited)
Revenues	$ 13,792,300	$ 17,162,200
Expenses	$ 13,788,200	$ 14,749,300

NOTE 15 SUBSEQUENT EVENTS

Subsequent events have been evaluated through June 3, 2010, the date the audited financial statements were available to be issued. There were no events noted that would require disclosure in these financial statements.

IEEE Web Pages

The following IEEE Web sites contain additional information about the IEEE products, services and activities discussed in this annual report:

IEEE Home Page
www.ieee.org

IEEE Public Visibility Initiative
www.ieee.org/go/visibility (requires IEEE Web account)

IEEE.tv
http://www.IEEE.tv

IEEE-USA
http://www.ieeeusa.org
http://www.ieeeusa.org/careers/help

IEEE Smart Grid
http://smartgrid.ieee.org

IEEE Future Directions Committee
http://www.ieee.org/about/volunteers/tab/tab_507.html

IEEE Humanitarian Technology Network
www.ieeehtn.org/htn/home.php

IEEE Standards Association
www.standards.ieee.org

IEEE Biometrics Certification and Training Program
http://www.ieeebiometricscertification.org

IEEE Teacher In-service Program
www.ieee.org/education_careers/education/preuniversity/tispt/index.html

TryEngineering.org
www.tryengineering.org

TryNano.org
www.trynano.org

IEEE Milestones in Electrical Engineering and Computing
www.ieeeghn.org

IEEE Member and Geographic Activities
www.ieee.org/membership_services/index.html

IEEE Publishing
www.ieee.org/publications_standards/index.html

IEEE *Xplore*®
http://ieeexplore.ieee.org/Xplore/guesthome.jsp

IEEE Spectrum Online
www.spectrum.ieee.org

IEEE Awards, Recognitions and Fellow Programs
www.ieee.org/about/awards/index.html

The 2008 IEEE Annual Report is available online at:
www.ieee.org/about/corporate/annual_report.html

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