

INSPIRING
CHANGE.
EMPOWERING
PEOPLE.



ANNUAL
REPORT
2017

THE 2017 IEEE PRESIDENT’S COIN

Initiated by 2016 President Barry Shoop, the IEEE President’s Coin is given to individuals in recognition of their dedication to IEEE. For me, one of the most interesting aspects is the embodiment of the President’s unique design and story.

“Find Your Reason, Purpose and Passion”

The front of my coin features a personal motto, inspired by my daughter - “Find Your Reason, Purpose and Passion,” along with the mission of IEEE.

The back highlights five areas of IEEE activities in the outer ring and different facets of IEEE in the center.

The Wi-Fi® symbol denotes IEEE’s leadership in standards. The image next to that represents engineering in medicine and biology. The skyline signifies Smart Cities and IEEE’s global nature.

The circuit diagram symbolizes our computer and electronic engineering disciplines. The plant is for IEEE’s power and energy fields and sustainability initiatives. The sine wave stands for our many communications domains.

My favorite icon is the group of people with one individual who is a little different, showing IEEE members welcoming me as a female engineer.

With each coin I presented, came the feeling of pride and humbleness to serve our great institution.



Karen Bartleson
2017 IEEE President and CEO



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* "WiFi" is a registered trademark of the WiFi Alliance.

MESSAGE FROM THE IEEE PRESIDENT

IEEE is a vibrant organization of professionals collectively using our diverse talents for the benefit of humanity. This is the force of technology – the life-changing impact that science and engineering can have on society.



IEEE serves our members working on global challenges – such as climate change and sustainable development – and on arising international issues related to technology, including Internet governance and the ethical design of artificial intelligence and autonomous systems.

Proficient in convening, IEEE brings together experts who understand emerging technologies, policy makers who develop the regulatory environment and the public that has varying levels of interaction and acceptance of potentially disruptive innovations.

IEEE continues to expand worldwide. This globalization has led to valuable, cross-national agreements and the productive exchange of ideas as IEEE works to address differing needs at local levels. The opening of a new IEEE office in Vienna, Austria, provides support to the European technical community and allows increased engagement for influencing public policies important to it.

Success in building vibrant and sustainable groups of IEEE members in Africa continues through support of engineering education and workforce development. IEEE recognizes the opportunity to assist in collaborative endeavors across the African continent to cultivate greater engineering capacity for advancing technology, sparking innovation and increasing economic growth.

IEEE's Women in Engineering program – one of the world's largest – promotes women in science, technology, engineering and math. It also inspires girls around the globe to follow their interests into a technical career in industry, academia, government or civil society.

Efforts to better serve industry and practicing engineers have proceeded to create a permanent IEEE Industry Engagement Committee and to establish an IEEE Industry Advisory Board of executives and leaders from Africa, Asia, the United Kingdom and the United States.

Students, young professionals and underserved communities are key to IEEE's future and are a focus of our strategic objectives in building the next generation of technical professionals and IEEE leaders.

Technology can overcome tough challenges. It always has. Yet, at no other point in history has IEEE had more opportunities to address problems facing humanity. As engineers, scientists and educators, we have the responsibility to help change our world for the better.

Sincerely,

Karen Bartleson
2017 IEEE President and CEO

**“As engineers,
scientists and
educators,
we have the
responsibility to
help **change
our world for
the better.**”**



Stephen Welby Named New IEEE Executive Director and Chief Operating Officer

In 2017, Dr. E. James “Jim” Prendergast announced his retirement as IEEE Executive Director and Chief Operating Officer after nearly nine years of service and commitment to the Institute. Stephen Welby assumed the role on 2 January 2018.

Welby, an IEEE Fellow, previously served as the U.S. Assistant Secretary of Defense for research and engineering. In his role of Chief Technology Officer for the U.S. Department of Defense, he led one of the largest research, development and engineering organizations in the world. His technical experience includes development of leading edge aeronautical and space systems, robotics, machine learning, high-performance software and sensor systems.

INSPIRING
CHANGE.
EMPOWERING
PEOPLE.

IEEE discovers opportunities around the world to inspire change and empower people. From **Africa to China to India**, we listen, we learn and we apply our technological knowledge to help **improve lives**.



417,429
MEMBERS

INDIA 52,410
CANADA 16,211
USA 180,952
CHINA 18,919
JAPAN 14,214
TOP 5 COUNTRIES

120,095
STUDENT  MEMBERS
FROM THESE TOP 5 COUNTRIES

INDIA 37,100 USA 26,241 CHINA 6,711
CANADA 3,581 SOUTH KOREA 2,064

334 SECTIONS IN TEN GEOGRAPHIC
REGIONS WORLDWIDE

3,005 STUDENT BRANCHES
IN OVER 100 COUNTRIES

2,116 CHAPTERS THAT UNITE
LOCAL MEMBERS

49% OF IEEE MEMBERS
BELONGED TO ONE
OR MORE SOCIETIES IN 2017

IEEE SOCIETY MEMBERSHIPS

4,884	IEEE Aerospace and Electronic Systems Society
8,971	IEEE Antennas and Propagation Society
1,773	IEEE Broadcast Technology Society
9,847	IEEE Circuits and Systems Society
27,537	IEEE Communications Society
7,515	IEEE Computational Intelligence Society
51,996	IEEE Computer Society
2,843	IEEE Consumer Electronics Society
8,867	IEEE Control Systems Society
2,043	IEEE Dielectrics and Electrical Insulation Society
3,355	IEEE Education Society
3,739	IEEE Electromagnetic Compatibility Society
10,620	IEEE Electron Devices Society
2,420	IEEE Electronics Packaging Society*
9,757	IEEE Engineering in Medicine and Biology Society
3,922	IEEE Geoscience and Remote Sensing Society
7,310	IEEE Industrial Electronics Society
15,186	IEEE Industry Applications Society
3,190	IEEE Information Theory Society
3,890	IEEE Instrumentation and Measurement Society
1,874	IEEE Intelligent Transportation Systems Society
2,932	IEEE Magnetics Society
10,963	IEEE Microwave Theory and Techniques Society
3,142	IEEE Nuclear and Plasma Sciences Society
1,786	IEEE Oceanic Engineering Society
6,249	IEEE Photonics Society
38,925	IEEE Power & Energy Society
9,136	IEEE Power Electronics Society
835	IEEE Product Safety Engineering Society
757	IEEE Professional Communication Society
1,734	IEEE Reliability Society
13,993	IEEE Robotics and Automation Society
16,347	IEEE Signal Processing Society
1,666	IEEE Society on Social Implications of Technology
10,184	IEEE Solid-State Circuits Society
5,230	IEEE Systems, Man, and Cybernetics Society
3,215	IEEE Technology and Engineering Management Society
2,325	IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society
4,612	IEEE Vehicular Technology Society

TOTAL SOCIETY MEMBERSHIPS
325,570

*Formerly the IEEE Components, Packaging, Manufacturing and Technology Society



GROWING GLOBAL AND INDUSTRY PARTNERSHIPS

With 417,000 members in over 160 countries, IEEE is inspiring change and **empowering people across the globe.**

Left: Engineer inspecting cellular phone site atop building

Inset Photo: 2017 IEEE President Karen Bartleson (fourth from left) meets with members of the leadership team at the African Centre for Women, Information and Communications Technology in Nairobi, Kenya.

Making International Connections

In 2017, IEEE made new inroads in the United States, Brazil, Kenya and Australia, connecting with hundreds of influential technology and industry leaders to identify different opportunities that can help impact the future of technology.

• **In the United States,** IEEE hosted the first IEEE Industry Summit on the Future of Computing, featuring executives from Hewlett-Packard Labs, IBM and others discussing what types of innovations we might expect in the next century.

• **In Brazil,** one of today's leading science and technology hubs, IEEE met with over 50 key business and technology leaders to address how best to serve the needs of practicing engineers and technologists.

• **In Kenya,** IEEE convened with universities, associations, government ministries, small and midsize companies and multinational corporations. These visits set the groundwork for IEEE to address many of the country's unmet technological needs, capitalize on emerging opportunities and deepen its connections to local industry, academia and government.

• **In Australia,** scores of leading organizations, including educational and research institutions, startups, small and medium enterprises and multinational companies discussed ways to create new technical standards in partnership with IEEE.



Enhancing Collaboration with China

IEEE saw rapid growth in the number of Chinese corporate members and created new collaboration opportunities for new standards development work. IEEE signed a series of memorandums of understanding (MOUs) targeted at standardization with key Chinese technology institutes and standards bodies, including the Chinese Society for Electrical Engineering, the Telematics Industry Application Alliance and the Tencent Research Institute. As a result of these formal collaborations, IEEE has realized double-digit growth in the number of new standardization initiatives, increased participation in existing initiatives and growth in corporate membership.

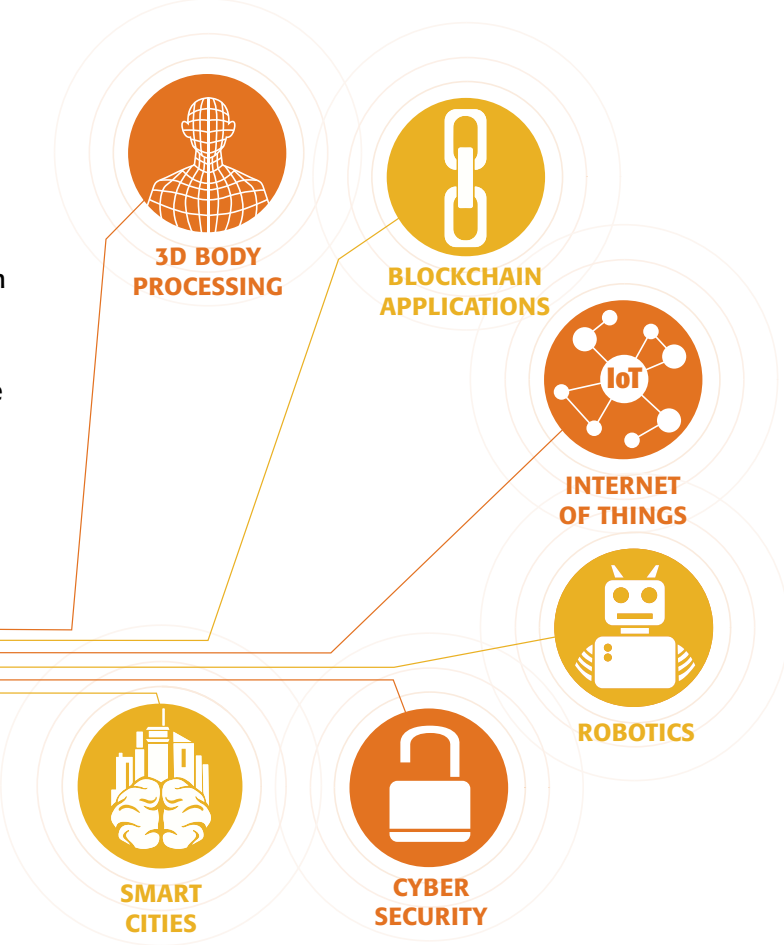


Above: The Memorandum of Understanding signing between IEEE and DiDi will help advance collaboration on membership, education, standards, Women in Engineering (WIE) and student activities.

Expanding Industry Connections to Inspire Change

Industry continues to drive standardization initiatives across a vast spectrum of emerging technologies and spaces including 3D body processing, blockchain applications, Internet of Things, robotics, cybersecurity, smart cities and more. The IEEE Standards Association Industry Connections program brought a 70% increase in new industry collaboration initiatives, providing an incubator for new standards and related products that will deliver advancements in these emerging areas.

70% GROWTH IN
INDUSTRY
CONNECTIONS
PROGRAM ACTIVITIES





GROWING AWARENESS OF IEEE

Growing awareness of IEEE means
expanding our influence.

Left: Attendees of the 2017 IEEE Women in Engineering (WIE) International Leadership Conference (ILC) held in San Jose, California

Inset Photo: Solar lanterns were given to residents in Puerto Rico after the impact of Hurricane Maria disrupted basic services and plunged the island into darkness.

IEEE Expertise Featured in Worldwide Media

Stories about our volunteers and technical experts are driving awareness of IEEE in top tier media.



The Wall Street Journal

Forbes

The New York Times

Gizmodo

Cheddar.TV

Sirius XM

Fox News Radio

TechTarget

ZDNet

EE Times

SecurityWeek

The Daily Mail

Assisting Victims of Natural Disaster

When disaster strikes, IEEE-USA's MOVE Community Outreach emergency-relief program goes into action. In 2017, the Mobile Outreach Vehicle responded with extended deployments to help residents of hurricane-hit areas in Houston and Florida. Working in partnership with the Red Cross, MOVE provided short-term communications, computer and power solutions. Volunteers were also deployed to Puerto Rico in November to help assist with communications infrastructure.



The MOVE truck as it prepares to provide disaster relief after Hurricane Irma hits Florida



The Houston Convention Center was transformed into a temporary shelter during Hurricane Harvey.



INSPIRING CHANGE. EMPOWERING PEOPLE.

Elevating, Educating and Inspiring Women Engineers

The 2017 IEEE Women in Engineering International Leadership Conference, held 22-23 May in San Jose, California, hosted over 1,300 attendees from 49 countries. Participating companies included Amazon, Google, Verizon and Intel.

20,089
GLOBAL MEMBERS

WIE MEMBERSHIP
GREW BY
15%



WIE AFFINITY GROUPS
SAW A **9%** INCREASE

LEADERSHIP SUMMITS IN

- INDIA
- MALAYSIA
- PAKISTAN
- POLAND
- SRI LANKA
- UGANDA



Above: Attendees of the WIE ILC 2017
Photo Credit: Maria Clara Magalhaes



Left: 2017 IEEE President Karen Bartleson

Engineering Leaders Discuss Future Technologies

The IEEE Honors Ceremony was preceded by the new IEEE Vision, Innovation and Challenges (VIC) Summit held in San Francisco. The IEEE VIC Summit brought together engineering innovators to discuss the future of technology—what is imminent and what is possible—as well as how some of today's emerging technologies will affect society. The event featured leaders in artificial intelligence, autonomous cars and Internet security.



Top Left: 2017 IEEE Vision Innovation Challenges Summit Panel Discussion on Entrepreneurship: Mario Milicevic, Moderator (left); Kurt Petersen, Band of Angels and Samantha Snabes, re:3D

Bottom Left: VIC Summit presenter Erna Grasz, Asante Africa Foundation

GROWING AWARENESS OF IEEE

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Empowering Entrepreneurs

Technology entrepreneurs drive tomorrow's innovations. IEEE offers a platform for these inventors to collaborate, resources to grow ideas and brings together individuals who have a passion for all things entrepreneurial. Activities relevant to start-up companies and founders are featured, including IEEE N3XT events.



IEEE Entrepreneurship volunteer judges, Samantha Snabes, Co-Founder, re:3D, Bruno Meyer, Manager, Business Development, RTE-France and Allan Tear, Co-Founder, Betaspring RevUp, represented IEEE at the 2017 Hello Tomorrow Global Summit.

IEEE Embraces Technology at SXSW

IEEE played a major part at SXSW, with its sixth annual IEEE Tech for Humanity Series. The 15-event series included panel sessions and topics, ranging from wearables to hearables, brain-computer interfaces to immersive user experiences, AI to AR/VR and virtual care to synthetic biology.



Above: IEEE panel sessions at SXSW 2017 included topics such as augmented reality.

Left: Susan Hassler (left), Editor-In-Chief, *IEEE Spectrum*, interviews IEEE Life Fellow and Google's Chief Internet Evangelist Vint Cerf. Photo Credit: Jessica Klima



INSPIRING CHANGE. EMPOWERING PEOPLE.



Lingshed Monastery Tibetan monk and an IEEE Smart Village volunteer install LED lamps in the 900-year-old prayer room. Photo Credit: Paula Bronstein

Initiating the First Comprehensive IEEE Foundation Fundraising Campaign

The IEEE Foundation, the philanthropic partner of IEEE, launched its first-ever comprehensive fundraising campaign, Realize the Full Potential of IEEE, to raise awareness, forge partnerships and fund initiatives. Funds generated by the campaign will help drive new levels of technological access, innovation and engagement through a variety of far-reaching IEEE global initiatives, all designed to transform lives through the power of technology and education.

By mid-October, the goal to reach at least 40% of the campaign's US\$30 million target was met. The secondary phase of the campaign kicked off in February 2018.

Opening Eyes with VR at the Consumer Electronics Show

Amidst a backdrop of 175,000 attendees and worldwide media attention, IEEE captured imaginations with a virtual reality demo called the IEEE UniVRse at the 2017 Consumer Electronics Show (CES).

IEEE UniVRse invited CES attendees to explore and interact with key VR technologies and learn about IEEE's historical connections to many landmark technologies, from Edison's electric pen to WiFi.



IEEE Life Fellow Marty Cooper, also known as the father of the cellphone, interacts with a replica of the groundbreaking technology he created.

GROWING AWARENESS OF IEEE



EXPANDING IEEE'S PRESENCE AROUND THE WORLD

In 2017, IEEE extended its
influence **around the world.**

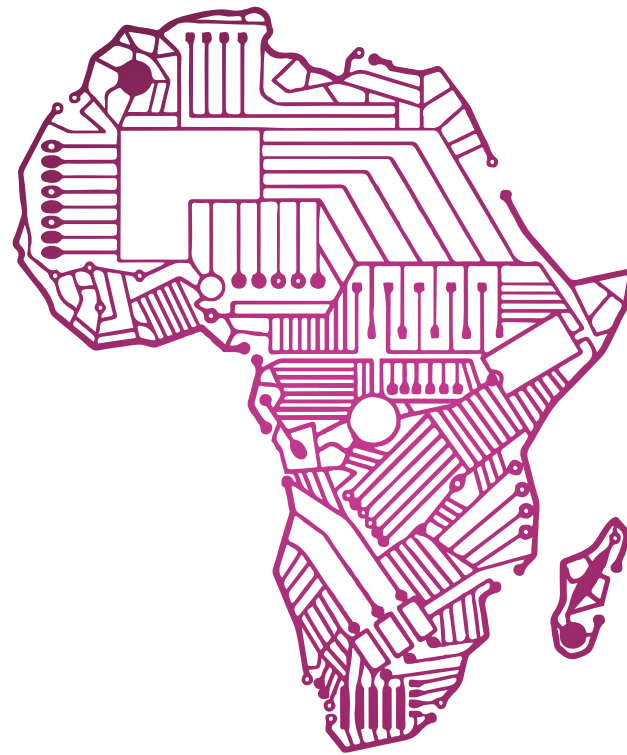
Left: Students receiving degrees after concluding their studies

Inset Photo: Institution of Engineers of Kenya (IEK) President Engineer Michael Okonji (left) and 2017 IEEE President Karen Bartleson at the ceremonial signing of the National Society Agreement (NSA)

Strengthening Engineering Capacity in Africa

The overarching goal of IEEE activities in Africa is the mission to build engineering capacity in underserved African countries. There are three key components:

- 1 **Support engineering education and workforce development**
- 2 **Build a sustainable community of IEEE members and volunteers**
- 3 **Support government policy development and increase opportunities for IEEE to serve as a resource for engineering capacity development**



New Partnership for Africa's Development Planning and Coordinating Agency (NEPAD) Program Manager Dr. Towela Nyirenda-Jere (left) and 2017 IEEE President Karen Bartleson at the signing ceremony of a Memorandum of Understanding between IEEE and NEPAD.

During IEEE President Karen Bartleson's visit to Africa, which included events in Rwanda and Kenya, IEEE signed an agreement with the New Partnership for Africa's Development Planning and Coordinating Agency (NEPAD). NEPAD is the technical body of the African Union that facilitates and coordinates development of continent-wide programs and projects, mobilizes resources and engages the global community, regional economic communities and countries in implementing priority programs and projects. The agreement commits IEEE to support workforce development, scientific and engineering policy development and increased access to technical information.

As part of the Transform Africa Summit, President Bartleson participated as a panelist in a Big Data and Internet of Things (IoT) session and took part in the Smart Africa Women's Summit, an event that highlights the crucial role young women and girls are playing in Africa's digital transformation.



INSPIRING CHANGE. EMPOWERING PEOPLE.



Attendees of the 2017 IEEE Uganda Subsection IEEE Women in Engineering International Leadership Summit

Empowering Young Engineers in Uganda

IEEE is assisting in the effort to cultivate new engineers in Africa. The IEEE Uganda Subsection IEEE Women in Engineering International Leadership Summit at Makerere University in Kampala, Uganda, attracted students from universities across the country. IEEE participated in discussions on innovation, emerging technology, entrepreneurship and effective ways to acquire leadership skills.

IEEE also held activities in Kampala, as the IEEE East African Student and Young Professional Congress gathered for the opportunity to develop soft skills, improve knowledge of technology and receive information on career advancement.



EXPANDING IEEE'S PRESENCE AROUND THE WORLD

Building a Stronger Presence in Europe

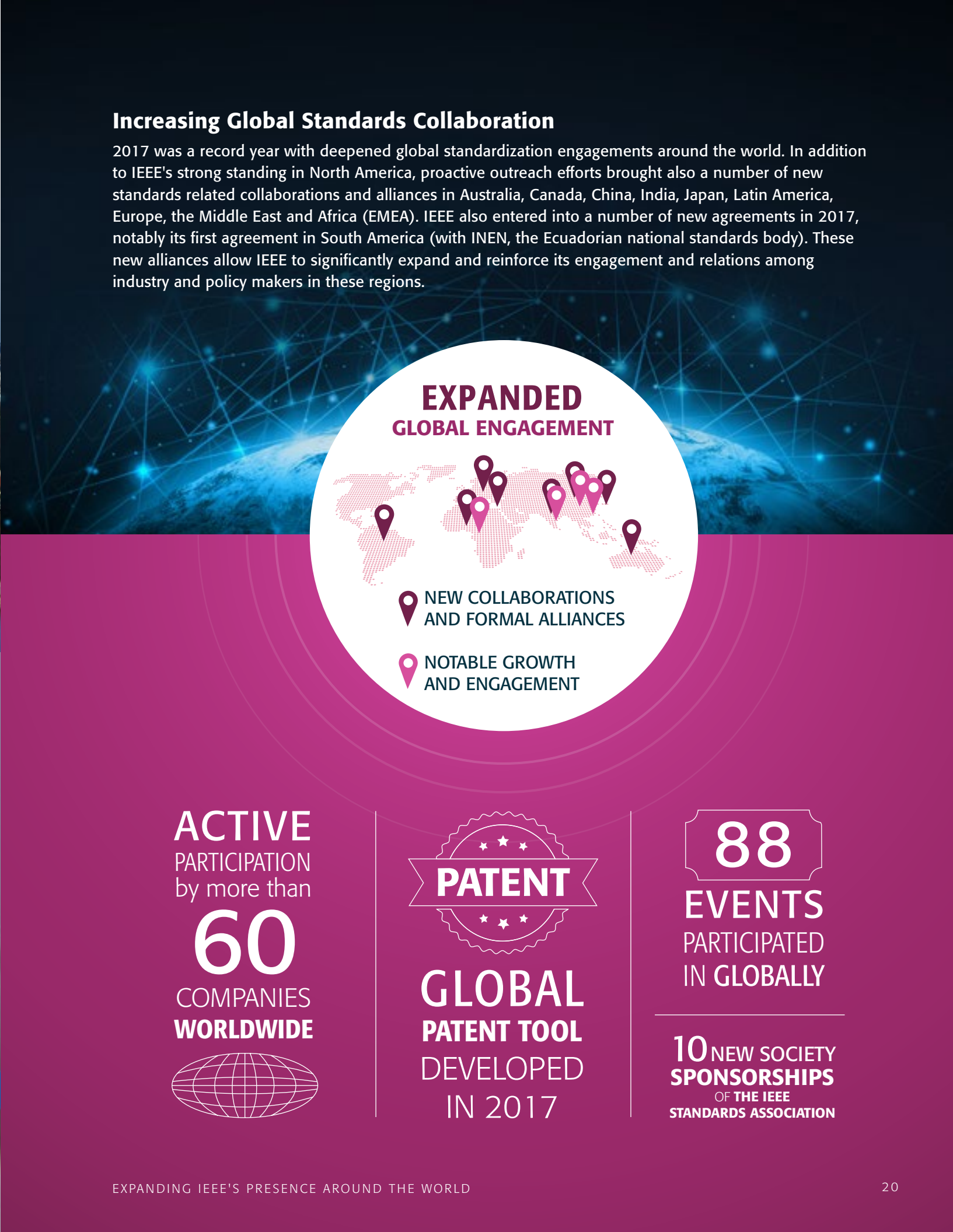
The IEEE Technology Centre officially opened in Vienna, serving as a strong foundation for collaboration to enhance the global science and innovation ecosystem. The Centre provides support and services the technical community, focusing specifically on the needs of industry, academia and governmental institutions.

Bottom: IEEE staff members Konstantinos Karachalios (from left) and Clara Neppel; Marko Delimar, IEEE Ad Hoc Committee on Engagement in Europe chair; 2017 President Karen Bartleson; IEEE staff member Donna Hourican; and 2017 Executive Director Jim Prendergast at the Vienna office ribbon-cutting ceremony.



Increasing Global Standards Collaboration

2017 was a record year with deepened global standardization engagements around the world. In addition to IEEE's strong standing in North America, proactive outreach efforts brought also a number of new standards related collaborations and alliances in Australia, Canada, China, India, Japan, Latin America, Europe, the Middle East and Africa (EMEA). IEEE also entered into a number of new agreements in 2017, notably its first agreement in South America (with INEN, the Ecuadorian national standards body). These new alliances allow IEEE to significantly expand and reinforce its engagement and relations among industry and policy makers in these regions.





ADVANCING TECHNOLOGY FOR THE FUTURE

In 2017, IEEE drove the discussion
of **tech ethics and emerging
technologies** like augmented reality.

Left: Lingshed Monastery at dusk; Located at 11,000 feet above sea level, the 900-year-old monastic village received a solar powered microgrid installed by a team of IEEE volunteers. Photo Credit: Paula Bronstein

Providing Leadership in the Ethics of Tech

IEEE created the the IEEE TechEthics™ program, which drives and coordinates institute-wide activities in technology ethics, with the goal of establishing IEEE as a thought leader and trusted source of information in conversations about the ethical and societal implications of technology.

Activities included:

IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems ensures every stakeholder is educated, trained and empowered to prioritize ethical considerations for the benefit of humanity. The initiative has so far enrolled more than 400 global members, inspired 11 new standards, (P7000 Series), and released version two of its Ethically Aligned Design (EAD) Report.

The 2017 IEEE TechEthics Conference, held 13 October in Washington, D.C., featured luminaries in technology, philosophy, ethics, policy development and more. The highly interactive event included a series of panels that addressed questions related to artificial intelligence, autonomous transportation, neuroscience and ethics education.



Ethically Aligned Design, Version 2

Setting a Record for Standards

Nearly 200 new standardization projects were initiated, and 139 standards were approved in 2017 – a record year on both accounts. IEEE standards drive the functionality, capabilities and interoperability of a wide range of products and services that transform the way people live, work and communicate, and many of them address the importance of social, economic and ethical challenges posed by emerging technologies.



Bringing Engineers Closer at IEEE Collabratec®

IEEE Collabratec, the integrated online community that connects technology professionals, reached several milestones.

2017 HIGHLIGHTS

120,000+
REGISTERED USERS

61%
GROWTH FROM 2016

**TAP INTO A
GLOBAL NETWORK**

33% IEEE
MEMBERS

Reaching High with Nat Geo TV

The mission of IEEE Smart Village is to bring electricity to more than 50 million people who currently do not have power by 2025. In June 2017, *National Geographic's* critically acclaimed *Breakthrough* series devoted its season finale to an in-depth look at IEEE Smart Village, supported by the IEEE Foundation.

This episode of *Breakthrough* documented the arduous trek across the high Himalayas by a hardy team of engineers and volunteers from IEEE Smart Village and the Global Himalayan Expedition to install 14 DC microgrids in the remote monastery village. In addition to India, IEEE Smart Village has supported installations in Cameroon, Haiti, Kenya, Nigeria, Papua New Guinea, South Sudan and Zambia, all with an emphasis on sustainability.



Left: IEEE Smart Village volunteers teach young student monks on LED light bulb assembly. Photo Credit: Paula Bronstein

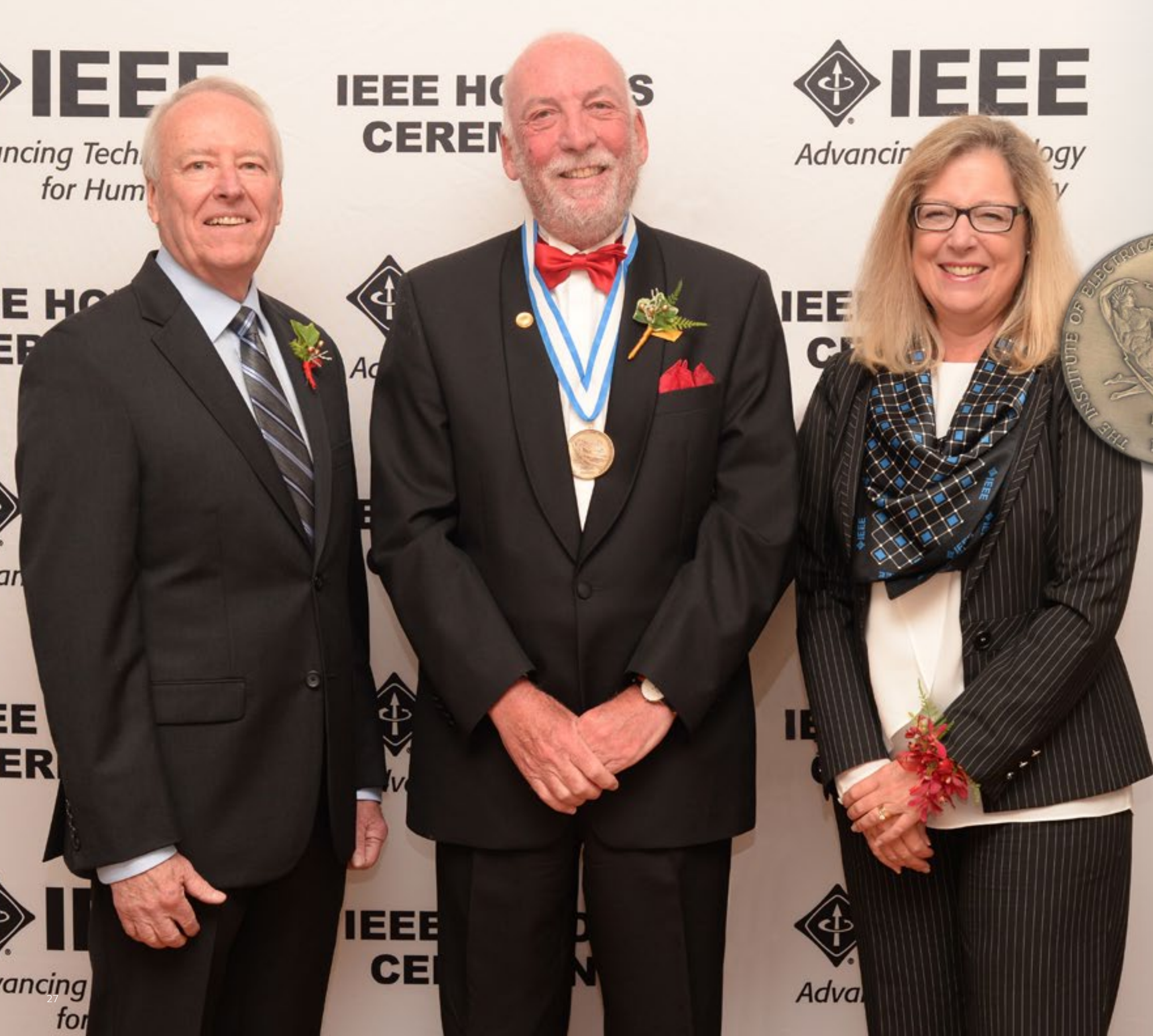
Center: IEEE member Farid Khan volunteers to bring light to the Himalayan mountains. Photo Credit: Paula Bronstein

Right: With no road to most of the high mountain villages across the Himalayas, hardware is hand carried or delivered by pack animals. Photo Credit: Paula Bronstein



Focusing the Future of VR/AR

To guide the evolution of virtual reality and augmented reality (VR/AR), IEEE formed the Virtual Reality and Augmented Reality Working Group, which is developing new standards for VR and AR. In 2017, the group attracted participants from more than 200 companies and institutions worldwide, making it one of the largest initiatives dedicated to VR/AR standardization.



REWARDING EXCELLENCE

IEEE **recognized leaders** who inspired change and empowered people by presenting them with awards of our own.

Left: 2018 IEEE President Jim Jefferies (left), 2017 IEEE Medal of Honor Recipient Kees Schouhamer Immink and 2017 IEEE President Karen Bartleson

Recognizing Kees Schouhamer Immink

Kees Schouhamer Immink received IEEE's highest award, the IEEE Medal of Honor. Immink is regarded as the most prolific contributor to the world's consumer electronics industry in the late 20th century. Immink fueled the "big bang" of digital electronics with pioneering coding techniques that have provided the foundation for multiple generations of optical storage media, from the CD to the Blu-ray disc. The IEEE Medal of Honor is sponsored by the IEEE Foundation.



Standing Out in the World of Publishing

IEEE Spectrum, the flagship magazine and website of IEEE, won five Merit Awards for cover design, story design, photography and story illustration, at the 2017 Society of Publication Designers Competition. *IEEE Spectrum* also received two Neal Awards for Best Technical Content and Best Single Article. In addition, IEEE magazines had a strong presence at the APEX Awards, garnering prizes in four different categories:

- 1 **IEEE Women in Engineering** magazine in the Magazines, Journals and Tabloids category
- 2 **IEEE Women in Engineering** magazine in the Writing—Interviews and Personal Profiles category
- 3 **IEEE Microwave** magazine in the Writing—Departments and Columns category
- 4 **IEEE Industry Applications** magazine in the Design & Illustration—Best Redesigns category



IEEE Spectrum receives the Neal Award for Best Single Article, "Great Leaps of Light."

Additionally, IEEE-USA's digital publications received more than 30 awards for excellence in 2017, including honors from APEX, Hermes Creative, the Academy of Interactive Visual Arts and Sciences and the Association of Marketing and Communication Professionals.

Honoring Historic Technology Milestones

Each year, the IEEE Milestones in Electrical Engineering and Computing program recognizes exceptional technical achievements that occurred at least 25 years ago. Among the IEEE Milestones recognized in 2017 were:

First Public Demonstration of Television

London, UK 1926

Members of the Royal Institution of Great Britain witnessed the world's first public demonstration of live television on 26 January 1926, at 22 Frith St., London. Inventor and entrepreneur John Logie Baird used the first floor as a workshop for various experimental activities, including the development of his television system. The BBC adopted Baird's system for its first television broadcast service in 1930.



Demonstration of Online Systems

Menlo Park, California, USA 1968

Douglas Engelbart and his team demonstrated their oNLine System (NLS) at Brooks Hall in San Francisco on 9 December 1968. Connected via microwave link to the host computer and other remote users at SRI in Menlo Park, the demonstration showcased many fundamental technologies that would become ubiquitous, including collaborative online editing, hypertext, video conferencing, word processing, spell checking, revision control and the mouse.



Origination of Map-Based Automotive Navigation

Tokyo, Japan 1981

The world's first map-based automotive navigation system, "Honda Electro Gyrolocator," was released in 1981. This system was based on inertial navigation technology using mileage and gyro sensors. It pioneered the onboard display of the destination path of a moving vehicle on overlaying transparent roadmap sheets and contributed to the advancement of automotive navigation systems.



For a full list of IEEE Milestones, visit the Engineering and Technology History Wiki at ethw.org



ENCOURAGING OUTREACH AND DRIVING RESEARCH

IEEE works to bring the **benefits of technology to more people**, while also providing technologists with cutting-edge research to help improve the world.

Left: Natalie Swope, an IEEE Power & Engineering Society Scholarship recipient from Seattle University, tightening the bolts on a solar panel while volunteering with KiloWatts for Humanity (kWh).

Inset Photo: EPICS in IEEE provided a grant to help build and customize battery-powered toy cars for local children with special needs.
Photo Credit: Nipuna Mihiranga Gomes

Supporting Sustainable Development with SIGHT

The Special Interest Group on Humanitarian Technology (SIGHT) is a network of IEEE volunteers around the world who partner with local organizations to apply technology in sustainable development solutions.

Together with the IEEE Humanitarian Activities Committee, IEEE SIGHT funded 12 projects in 11 countries last year, with an estimated 200 IEEE members involved and around 10,000 people benefiting. Projects ranged from developing a wearable vital signs monitor for newborns in Uganda to implementation of the Smart Seedbed project in Guatemala to help local people grow crops more efficiently.



IEEE Life Member C. Satish (left) and IEEE Young Professionals Member Anvesh Kumar are testing if the earth electrode resistance is very low. This is more critical for safety in High Voltage Single Wire Earth Return distribution unlike in traditional distribution systems.

University professors, deans and other professionals from Colombia, India, Ireland and the U.S. attend a workshop held at Purdue University.



Empowering Students, Impacting Communities

Engineering Projects in Community Service (EPICS in IEEE) gives students a platform to experience a career in engineering while, at the same time, aiding communities around the world. From providing solar power to underprivileged kids in Ottawa, to bringing telecommunications capacity to rural communities in Zambia, EPICS in IEEE, which is a priority initiative of the IEEE Foundation, makes a real difference in the lives of people.

In 2017, EPICS in IEEE approved work on engineering-related projects with community organizations. Highlights included a workshop with Purdue University, including university professors and deans from Colombia, India, Ireland and the United States.

Continuing to Lead in Technical Publishing

IEEE maintained its position as one of the top publishers of science and technology journals, continuing to be a trusted source for communicating quality technical information that will help inspire the next breakthrough technologies.

The June 2017 edition of Journal Citation Reports by Clarivate Analytics, which surveys the influence of scholarly research journals, showed a total of 10 IEEE journals ranked number one for Journal Impact Factor in their respective categories.



IEEE Xplore® Digital Library Delivers More Technical Content

The IEEE Xplore digital library expanded its content offerings in 2017, further diversifying its already vast collection of technical information.

Key additions included:

IEEE Xplore®
Digital Library

WILEY
365 eBOOKS IN TELECOM

NOW
PUBLISHERS
439 eBOOKS

OXFORD
UNIVERSITY PRESS
26 JOURNALS

VISITS TO IEEE XPLORE INCREASED **30%** OVER 2016

Growing Readership with New Journals

50,819
ARTICLES PUBLISHED

IEEE launched several new journals in 2017 including:

- **IEEE Control Systems Society Letters**
- **IEEE Communications Standards Magazine**
- **IEEE Transactions on Green Communications and Networking**
- **IEEE Transactions on Emerging Topics in Computational Intelligence**
- **IEEE Journal of Radio Frequency Identification**
- **IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology**
- **IEEE Transactions on Radiation and Plasma Medical Sciences**
- **IEEE Sensors Letters**

Building Greater Access

In 2017, **IEEE Access®**, IEEE's broad scope open access journal:

RECEIVED OVER
10,300
ARTICLE
SUBMISSIONS

PUBLISHED
2,776
ARTICLES

EACH MONTH
5-8 IEEE ACCESS ARTICLES
WERE AMONG TOP 10 DOWNLOADED
IN IEEE XPLORE



ELEVATING ENGAGEMENT

In 2017, IEEE engaged more closely with the global community and increased the public's **recognition of our leadership role.**

Left: Professor Damien Coyle demonstrating a neurotechnology to control a computer game called NeuroSensitm, taken during an exhibition at CultureTech2015. Contrast between the old stained glass windows of the 17th Century Guild Hall in Derry, Northern Ireland, and cutting-edge technology of the 21st century.

Inset Photo: 2017 IEEE Day participants

Shining Down Under

In 2017, more than 1,200 attendees from 97 countries attended IEEE Sections Congress in Sydney, Australia.

Held every three years, IEEE Sections Congress brings together volunteer leaders from around the world to network, collaborate and receive training on how to utilize the various resources at IEEE.



IEEE Fellow Alan Finkel, Chief Scientist of Australia and IEEE Sections Congress keynote speaker

HIGHLIGHTS FROM THE EVENT

OVER
220
TOPICS
COVERED

100+
SPEAKERS

37 ACTIVE
TECHNICAL SOCIETIES/COUNCILS
FROM AROUND THE WORLD

10+
EVENTS
LIVESTREAMED-
GLOBALLY



Inspiring Students at IEEEExtreme

IEEEExtreme 11.0's registration was up 30% over 2016. The 24-hour coding contest brought together IEEE student members to solve programming challenges they might encounter in the real world.



IEEE Xtreme 11.0 participants



Bringing New Energy to IEEE with Young Professionals

IEEE Young Professionals is an international community of members and volunteers who expand their global network, connect with peers locally and give back to the community. Highlights of 2017 included:

58 CUSTOMIZED
LOCAL EVENTS

REACHED

1,206 GUESTS
425 NON-MEMBERS

FORMATION OF 15
NEW AFFINITY GROUPS

Bringing Engineering into the Classroom

The Teacher In-Service Program provides a forum for IEEE volunteers to demonstrate the application of engineering, science and mathematics concepts by sharing their real-world experiences with local pre-university educators. A training workshop was held in Sydney, Australia, following IEEE Sections Congress, with representation from nine regions, 33 sections and 20 countries. Once trained, IEEE volunteers can connect with local teachers and help bring exciting hands-on engineering lessons into their classrooms.

Participants of the Teacher In-Service Program training workshop held the day following IEEE Sections Congress



STEM Collaborations: TryEngineering Together

In collaboration with Cricket Media, IEEE announced plans for a STEM-based eMentoring platform giving companies a resource to mobilize their employees as volunteers to inspire and educate the next generation of engineers, scientists and technical professionals. The goal is to develop students' understanding of and ability to communicate about engineering, computing and technology with mentor support and hands-on learning experiences.



TryEngineering
TOGETHER
Powered by IEEE and In2Books

INSPIRING CHANGE. EMPOWERING PEOPLE.

ELEVATING ENGAGEMENT.

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2017 IEEE BOARD OF DIRECTORS

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MESSAGE FROM THE TREASURER

I am pleased to present the audited financial reports of IEEE. These reports indicate that the overall financial health of the organization continues to be strong as shown by total assets of \$649.0 million exceeding total liabilities of \$257.7 million.

The IEEE Statement of Activities reflects total revenues for 2017 of \$496.7 million, an increase of \$16.3 million, or 3.4% from 2016. Some of the key contributors that drove the increase in revenues are:

- IEEE/IET Electronic Library (IEL) and Open Access Charges for IEEE Journals continued success as one of the top publishers of science and technology journals, earning high rankings in the Journal Impact Factor report by Journal Citation Reports. On the downside, declines occurred in magazine advertisement and printed periodicals.
- Conferences grew in number, attendance size, and authors
- IEEE GlobalSpec (acquired April 29, 2016) with 2017 being the first full year as a subsidiary of IEEE and an addition to IEEE's revenue streams

In 2017, IEEE had total operating expenses of \$511.9 million. This represents an increase of \$21.8 million, or 4.5% from 2016. Some of the key contributors that drove the increase in expenses are:

- IEEE GlobalSpec (acquired April 29, 2016) with 2017 being the first full year as a subsidiary of IEEE
- Goodwill impairment and intangible asset amortization
- Expansion of global offices
- On the upside, non-profit operations recorded a surplus in line with improved operational efficiencies

The above resulted in a \$15.2 million operating loss for 2017. This was offset by a \$56.0 million net gain from investments which includes realized and unrealized gains and interest and dividends, \$4.1 million pension related non-operating gain and \$4.2 million income tax benefit related to IEEE GlobalSpec.

Overall, IEEE Net Assets increased \$49.1 million to \$391.4 million from the 2016 year-end balance of \$342.3 million.

Grant Thornton LLP, the independent auditors for IEEE, met with the IEEE Audit Committee to discuss the scope and results of the financial statement audit, the review on the adequacy of IEEE's internal accounting controls, and the quality of IEEE's financial reporting prior to issuing the opinion on the financial statements. IEEE received an unmodified opinion from Grant Thornton LLP in the Report of Independent Certified Public Accountants.

IEEE is tax exempt under Section 501(c)(3) of the Internal Revenue Code. IEEE GlobalSpec is a for profit corporation and is required to pay applicable federal and state income taxes. The IEEE Foundation is a separately incorporated related organization of IEEE; accordingly, its audited financial statements are not included in the accompanying documents.

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

John W. Walz

John W. Walz
2017 IEEE Treasurer



REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Board of Directors of: **The Institute of Electrical and Electronics Engineers, Incorporated**

We have audited the accompanying consolidated financial statements of The Institute of Electrical and Electronics Engineers, Incorporated (the "Institute"), which comprise the consolidated statements of financial position as of December 31, 2017 and 2016, and the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's responsibility for the consolidated financial statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the consolidated financial statements in order to design 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. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of The Institute of Electrical and Electronics Engineers, Incorporated as of December 31, 2017 and 2016, and the changes in their net assets and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Grant Thornton LLP

Iselin, New Jersey
April 19, 2018

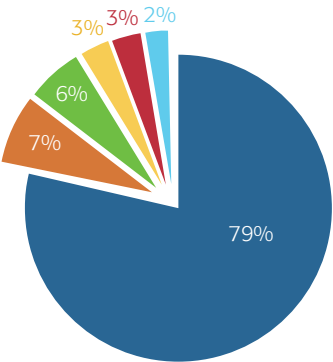
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

As of December 31, 2017 and 2016

ASSETS	2017	2016
CURRENT ASSETS		
Cash and cash equivalents	\$ 16,055,600	\$ 14,749,800
Accounts receivable, less allowance for doubtful accounts of \$3,092,300 in 2017 and \$1,767,800 in 2016	37,902,000	41,952,100
Prepaid expenses and other assets	20,136,300	18,637,800
Investments, at fair value	508,701,300	437,982,300
Investments - other	2,102,800	2,022,000
Total current assets	584,898,000	515,344,000
NONCURRENT ASSETS		
Long-term investments, at fair value	191,400	191,400
Land, buildings, and equipment, net	43,015,100	43,116,000
Goodwill	2,289,700	15,693,700
Intangible assets	18,647,200	24,378,900
Total assets	\$ 649,041,400	\$ 598,724,000
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES		
Accounts payable and accrued expenses	\$ 54,324,000	\$ 54,430,000
Capital lease obligations	228,100	330,700
Accrued pension and other employee benefits	246,300	683,400
Amounts held on behalf of IEEE Foundation, Incorporated	45,435,400	40,414,800
Deferred revenue	124,862,700	121,708,900
Income tax liability	-	5,900
Total current liabilities	225,096,500	217,573,700
NONCURRENT LIABILITIES		
Capital lease obligations, net of current portion	205,300	439,600
Accrued pension and other employee benefits, net of current portion	29,305,100	30,740,400
Deferred tax liabilities	3,070,200	7,704,800
Total liabilities	257,677,100	256,458,500
Commitments and contingencies		
NET ASSETS		
Unrestricted	389,491,300	340,498,900
Temporarily restricted	1,681,600	1,575,200
Permanently restricted	191,400	191,400
Total net assets	391,364,300	342,265,500
Total liabilities and net assets	\$ 649,041,400	\$ 598,724,000

2017 ASSETS

IEEE net assets increased \$49.1M, or 14.3% to \$391.4M as of December 31, 2017 from \$342.3M as of December 31, 2016. This increase was primarily due to investment related gains, which offset a loss from operations.



- INVESTMENTS (CURRENT AND LONG-TERM)
- LAND, BUILDINGS AND EQUIPMENT, NET
- ACCOUNTS RECEIVABLE
- GOODWILL AND INTANGIBLES
- PREPAID EXPENSES AND OTHER ASSETS
- CASH AND CASH EQUIVALENTS

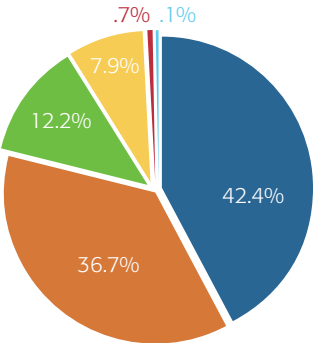
CONSOLIDATED STATEMENT OF ACTIVITIES

For the year ended December 31, 2017

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
REVENUES				
Memberships and public imperatives	\$ 63,258,500	\$ 625,000	\$ -	\$ 63,883,500
Periodicals and media	210,943,100	-	-	210,943,100
Conferences	182,181,700	-	-	182,181,700
Standards	39,414,300	-	-	39,414,300
Other income	251,900	-	-	251,900
Net assets released from restrictions	579,300	(579,300)	-	-
Total revenues	496,628,800	45,700	-	496,674,500
EXPENSES				
Program services:				
Memberships and public imperatives	110,281,300	-	-	110,281,300
Periodicals and media	195,016,300	-	-	195,016,300
Conferences	149,939,500	-	-	149,939,500
Standards	34,626,000	-	-	34,626,000
Total program services	489,863,100	-	-	489,863,100
Supporting services:				
General and administrative	8,630,600	-	-	8,630,600
Goodwill impairment	13,404,000	-	-	13,404,000
Total expenses	511,897,700	-	-	511,897,700
Changes in net assets before nonoperating activities	(15,268,900)	45,700	-	(15,223,200)
NONOPERATING ACTIVITIES				
Investment income, net	55,972,400	60,700	-	56,033,100
Pension and related benefits activity other than net periodic benefit cost	4,079,100	-	-	4,079,100
Changes in net assets before income tax	44,782,600	106,400	-	44,889,000
Benefit for income taxes	4,209,800	-	-	4,209,800
Changes in net assets	48,992,400	106,400	-	49,098,800
Net assets, beginning of year	340,498,900	1,575,200	191,400	342,265,500
Net assets, end of year	\$ 389,491,300	\$ 1,681,600	\$ 191,400	\$ 391,364,300

2017 REVENUES

IEEE experienced an increase in revenue of \$16.3M to \$496.7M in 2017 from \$480.4M in 2016. This increase was primarily due to Periodicals & Media revenue, which saw increases in IEEE GlobalSpec revenue as well as continued strength of the IEEE Xplore platform (IEL Package).



- PERIODICALS
- CONFERENCES
- MEMBERSHIP
- STANDARDS
- PUBLIC IMPERATIVES
- OTHER INCOME

The accompanying notes are an integral part of these consolidated financial statements.

The accompanying notes are an integral part of this consolidated financial statement.

CONSOLIDATED STATEMENT OF ACTIVITIES

For the year ended December 31, 2016

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
REVENUES				
Memberships and public imperatives	\$ 67,923,700	\$ 284,400	\$ -	\$ 68,208,100
Periodicals and media	190,568,800	-	-	190,568,800
Conferences	181,431,400	-	-	181,431,400
Standards	39,613,900	-	-	39,613,900
Other income	537,200	-	-	537,200
Net assets released from restrictions	540,300	(540,300)	-	-
Total revenues	480,615,300	(255,900)	-	480,359,400
EXPENSES				
Program services:				
Memberships and public imperatives	116,897,700	-	-	116,897,700
Periodicals and media	179,410,400	-	-	179,410,400
Conferences	149,211,700	-	-	149,211,700
Standards	36,607,900	-	-	36,607,900
Total program services	482,127,700	-	-	482,127,700
Supporting services:				
General and administrative	7,957,800	-	-	7,957,800
Total expenses	490,085,500	-	-	490,085,500
Changes in net assets before nonoperating activities	(9,470,200)	(255,900)	-	(9,726,100)
NONOPERATING ACTIVITIES				
Investment income, net	27,362,900	29,900	-	27,392,800
Pension and related benefits activity other than net periodic benefit cost	2,717,600	-	-	2,717,600
Changes in net assets before income tax	20,610,300	(226,000)	-	20,384,300
Benefit for income taxes	2,212,700	-	-	2,212,700
Changes in net assets	22,823,000	(226,000)	-	22,597,000
Net assets, beginning of year	317,675,900	1,801,200	191,400	319,668,500
Net assets, end of year	\$ 340,498,900	\$ 1,575,200	\$ 191,400	\$ 342,265,500

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended December 31, 2017 and 2016

	2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES		
Changes in net assets	\$ 49,098,800	\$ 22,597,000
Adjustments to reconcile changes in net assets to net cash provided by operating activities:		
Depreciation and amortization	17,525,200	19,405,100
Goodwill impairment	13,404,000	-
Unrealized gains on investments	(33,247,900)	(7,538,700)
Gains on sale of investments	(13,920,000)	(12,230,900)
Bad debt expense	3,052,500	906,700
Changes in assets and liabilities:		
Accounts receivable	997,600	(10,268,500)
Prepaid expenses and other assets	(1,498,500)	(1,394,000)
Accounts payable and accrued expenses	1,095,500	5,965,800
Accrued pension and other employee benefits	(1,872,400)	339,200
Amounts held on behalf of IEEE Foundation, Incorporated	5,020,600	693,700
Deferred revenue	3,153,800	(5,340,500)
Income taxes	(4,640,500)	(2,220,600)
Net cash provided by operating activities	38,168,700	10,914,300
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from sales of investments	281,062,600	381,596,200
Purchases of investments	(304,694,500)	(346,903,800)
Acquisition of GlobalSpec, Inc., net of cash acquired	-	(34,561,700)
Purchase of land, buildings and equipment	(11,563,400)	(8,843,400)
Net cash used in investing activities	(35,195,300)	(8,712,700)
CASH FLOWS FROM FINANCING ACTIVITIES		
Change in cash overdraft	(1,330,700)	550,600
Payment of capital lease obligations	(336,900)	(450,300)
Net cash (used in) provided by financing activities	(1,667,600)	100,300
Net increase in cash and cash equivalents	1,305,800	2,301,900
Cash and cash equivalents, beginning of year	14,749,800	12,447,900
Cash and cash equivalents, end of year	\$ 16,055,600	\$ 14,749,800
SUPPLEMENTAL DATA		
Interest paid	\$ 121,800	\$ 140,600
Purchases of fixed assets included in accounts payable and accrued expenses	\$ 818,800	\$ 689,600
Acquisition of equipment through capital lease obligations	\$ -	\$ 572,900
Deferred tax liability associated with GlobalSpec, Inc. acquisition	\$ -	\$ 9,925,400

The accompanying notes are an integral part of this consolidated financial statement.

The accompanying notes are an integral part of these consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2017 and 2016

NOTE 1. THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INCORPORATED

The objectives of The Institute of Electrical and Electronics Engineers, Incorporated (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 benefit of the engineering community and the general public.

In 2016, the Institute expanded its activities in furtherance of these objectives with the acquisition of GlobalSpec, Inc., a leading source of news, data and analytics for the global engineering and technical community including the widely known brand name Engineering360. The new for-profit subsidiary of the Institute was renamed IEEE GlobalSpec, Inc. (“IEEE GlobalSpec”) and significantly complements IEEE’s already broad offerings for engineers as well as its emerging position in research analytics, further fueling the organization’s value to the industry through its business-oriented, content rich marketing platforms. Acquisition details are provided in Note 2.

Implementation of the Institute’s objectives is performed by members and volunteer communities organized as regions, sections, chapters, societies, and councils (collectively, “units”), none of which are separately incorporated, and their financial results are incorporated in the Institute’s accompanying consolidated financial statements. These units were formed to serve the technical interests of members and to coordinate 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, various publications, and the development of standards.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The Institute’s consolidated financial statements are presented in conformity with U.S. generally accepted accounting principles (“U.S. GAAP”) and have been prepared on the accrual basis of accounting. The consolidated financial statements include the accounts of IEEE, Inc., Global IEEE Institute for Engineers, Inc., IEEE Global LLC, IEEE International LLC, IEEE Europe GmbH, IEEE Latin America SA, IEEE Broadcast Technology Convention LLC, IEEE Worldwide Limited, IEEE Asia-Pacific Limited, IEEE GlobalSpec, Inc., and IEEE Technology Center GmbH.

Net Asset Classifications

The Institute’s net assets, revenues, expenses, gains and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, the net assets of the Institute and changes therein are classified and reported as follows:

Unrestricted - net assets that are not subject to donor-imposed stipulations. Unrestricted net assets may be designated for specific purposes by actions of the Board of Directors. Unrestricted net assets can be utilized to carry out any of the purposes of the Institute.

Temporarily restricted – represent amounts restricted by donors for specific activities of the Institute or to be used at some future date. The Institute records contributions as temporarily restricted if they are received with donor stipulations that limit their use either through purpose or time restrictions. When a donor restriction expires, that is, when a time restriction ends or a purpose restriction is fulfilled, temporarily restricted net assets are reclassified to unrestricted net assets and reported on the consolidated statement of activities as net assets released from restrictions. However, when restrictions on donor-restricted contributions and investment returns are met in the same accounting period, such amounts are reported as part of unrestricted net assets.

Permanently restricted – include funds wherein donors have stipulated that the principal contributed be invested and maintained in perpetuity. Income earned from these investments is available for expenditure according to restrictions imposed by donors and consideration of the appropriation for expenditure criteria by the Institute pursuant to the New York Prudent Management of Institutional Funds Act (“NYPMIFA”).

Cash and Cash Equivalents

Cash and cash equivalents are defined as cash balances held in bank accounts and highly liquid short-term investments held by the Institute for operating use with original maturities of three months or less from the date of purchase.

Investments

Investments in publicly traded debt and equity securities are recorded at fair value determined on the basis of quoted market prices as of the reporting date. Investments in alternative investments (e.g., commingled funds) that are not readily marketable are reported at fair value as determined by the respective investment manager as of the reporting date. The Institute follows guidance on measuring the fair value of alternative investments, which offers investors a practical expedient for measuring the fair value of investments in certain entities that calculate net asset value (“NAV”). Under this practical expedient, entities are permitted to use NAV without adjustment for certain investments which: (a) do not have a readily determinable fair value and (b) prepare their financial statements consistent with the measurement principles of an investment company or have the attributes of an investment company. Additionally, the Institute follows guidance that removes the requirement to categorize, within the fair value hierarchy, all investments for which the fair value is measured using NAV.

Such valuations involve assumptions and methods that are reviewed by the Institute and have been concluded to be reasonable and appropriate. Because such investments are not readily marketable, their estimated fair value is subject to uncertainty and therefore may differ from the value that would have been used had a ready market for such investments existed. Such difference could be material. However, the risk to the Institute is limited to the amount of the Institute’s investment in each of the respective funds with respect to its ownership interests.

Purchases and sales of securities are reflected on a trade-date basis. Gains and losses on sales of securities are determined on an average

cost basis and are recorded on the consolidated statement of activities in the period in which the securities are sold. Dividends and interest are recognized as earned.

Investments - Other

Investments - other consist of certificates of deposit held to maturity with original maturities greater than three months that are not debt securities and are carried at amortized cost.

Fair Value Measurements

The Institute follows guidance that defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. This guidance provides a consistent definition of fair value, which focuses on an exit price between market participants in an orderly transaction. The guidance also prioritizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used when available to determine the fair value of an instrument as of the reporting date.

Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from independent sources. Unobservable inputs reflect assumptions that market participants would use in pricing the asset or liability based on the best information available in the circumstances. The hierarchy is broken down into three levels based on the transparency of inputs as follows:

Level 1 - Quoted prices are available in active markets for identical assets or liabilities as of the measurement date. A quoted price for an identical asset or liability in an active market provides the most reliable fair value measurement because it is directly observable to the market.

Level 2 - Pricing inputs are other than quoted prices in active markets, which are either directly or indirectly observable as of the measurement date. The nature of these securities include investments for which quoted prices are available but traded less frequently and investments that are fair valued using other securities, the parameters of which can be directly observed.

Level 3 - Securities that have little to no pricing observability as of the measurement date. These securities are measured using management’s best estimate of fair value, where the inputs into the determination of fair value are not observable and require significant management judgment or estimation.

During the year ended December 31, 2017, the Institute adopted Accounting Standard Update (“ASU”) 2015-07, *Disclosures for Investments in Certain Entities that Calculate Net Asset Value per Share (or its Equivalent)*, which removes the requirement to categorize with the fair value hierarchy all investments for which fair value is measured using the NAV per share practical expedient. Accordingly, investments for which fair value is measured using NAV per share as a practical expedient have not been categorized within the fair-value hierarchy, and certain related tables have been properly excluded from the notes to the consolidated financial statements when compared to the prior year.

Inputs are used in applying the various valuation techniques and broadly refer to the assumptions that market participants use to make valuation decisions, including assumptions about risk. Inputs may include price information, volatility statistics, specific and broad credit data, liquidity statistics, and other factors. A financial instrument’s level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. However, the determination of what constitutes “observable” requires significant judgment by an entity. The Institute considers observable data to be that market data that is readily available, regularly distributed or updated, reliable and verifiable, not proprietary, and provided by independent sources that are actively involved in the relevant market.

Revenue

The Institute generates revenues from multiple sources, primarily:

Membership revenues are primarily generated from IEEE and Society membership dues and are recognized over the period to which they pertain.

Periodicals revenues primarily include subscriptions and online products and content. Such revenues are recognized upon delivery of the online product or content or over the related subscription period.

Media revenue primarily includes advertising space sold in newsletters and periodicals and is recognized in the period the newsletter or periodical is issued and distributed.

Conference revenues primarily include registration and sponsorships, and the connected proceedings and articles produced by those conferences. Revenues from conference events are reported in the year in which the respective conference occurs. Revenues from conference proceedings and articles are recognized in the period in which they are sold.

Standards revenues primarily include subscriptions, publications and online products and content relating to technology standards. Such revenues are recognized upon delivery of the online product or content or over the related subscription period.

Public Imperative revenues primarily consist of grants and contributions, including unconditional promises to give. Grants and unconditional promises to give are reported as revenues in the period received. Conditional contributions are recorded as revenue when the conditions on which they depend are substantially met.

Amounts received in advance by the Institute are recorded as deferred revenues until earned.

Public Imperatives

Public imperatives are social good activities that are directed at the public and not an individual or small group of individuals. They are generally related to the promotion of the public’s understanding and appreciation of the Institute’s fields of interest and/or positioning the Institute’s technical expertise in ways to benefit humanity. Typically these activities are not expected to create a financial surplus but rather are funded by the surplus of other activities.

Public Imperatives	2017	2016
Revenues	\$ 3,337,600	\$ 2,366,300
Expenses	(14,268,500)	(14,069,600)
Public Imperatives, net	\$ (10,930,900)	\$ (11,703,300)

* Public Imperative Revenues primarily consist of IEEE-USA Assessments, History Center, and Foundation-related activities.

* Public Imperative Expenses consist of History Center, Grants, certain IEEE-USA activities, and Educational activities, Initiatives, Honors Ceremonies, Presentations and some Society activities.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount and do not bear interest. The Institute reviews a customer’s credit history before extending credit. The Institute maintains allowances for doubtful accounts against certain billed receivables based upon the latest information available regarding whether the receivables are ultimately collectible. Assessing the collectability of customer receivables requires management’s judgment. The Institute determines its allowance for doubtful accounts by specifically analyzing individual accounts receivable, historical bad debts, customer creditworthiness, current economic conditions, and accounts receivable aging trends. Valuation reserves are periodically re-evaluated and adjusted as more information about the ultimate collectability of accounts receivable becomes available. Upon determination that a receivable is uncollectible, the respective receivable balance and any associated reserve are written off. Any payments subsequently received on such receivables are recorded as income in the period received.

Land, Buildings, and Equipment

Land, buildings, and equipment are stated at cost, including interest expense capitalized during the period of construction, or period of development, until the time that it is ready for its intended use, as in the case of internal-use software. Additions and improvements costing more than \$1,500 and with useful lives greater than three years are capitalized. Maintenance and repairs are expensed as incurred.

Assets acquired under capital lease agreements are depreciated over the term of the respective lease agreement to which they pertain. Leasehold improvements are amortized over their useful lives or lease period whichever is shorter.

Depreciation and amortization is provided on a straight-line basis over the following estimated useful lives:

	Years
Buildings	20 - 40
Building improvements	10 - 15
Furniture, equipment and vehicles	5 - 10
Software	3-5
Computers	3

Acquisition of GlobalSpec, Inc.

On April 29, 2016, IEEE, Inc., a subsidiary of the Institute, acquired 100% of the outstanding shares of GlobalSpec, Inc. in a stock purchase agreement. The purchase price of \$34,906,300 was allocated to the net tangible assets acquired, based upon their estimated fair values as of April 29, 2016. Results of IEEE GlobalSpec have been included in the Institute’s accompanying consolidated financial statements since April 29, 2016. The fair values assigned to assets acquired and liabilities assumed at the acquisition date were as follows:

Current assets, including \$344,600 in cash received	\$ 2,483,000
Property, plant and equipment	9,300
Intangible assets	28,200,000
Current liabilities	(1,554,300)
Net assets acquired	\$ 29,138,000
Goodwill, excluding tax goodwill (see Note 12)	\$ 5,768,300

Included in the purchase price allocation above is \$28,200,000 of identifiable intangible assets which primarily relate to registered users and internally developed internal-use technology. The Institute also recorded goodwill of \$5,768,300, relating to the difference between the estimated fair value of net assets acquired and the purchase price. The acquisition generated a deferred tax liability of \$9,925,500 arising from the goodwill and intangible assets that are not expected to be deductible for income tax purposes. During 2017, as part of its annual impairment test, the Institute determined that goodwill was impaired.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net tangible and intangible assets acquired in a business combination and is not amortized. The Institute evaluates goodwill for impairment at least annually and more frequently if certain indicators are encountered that may indicate that the carrying value of goodwill may not be fully recoverable. Goodwill is tested at the reporting unit level with the fair value of the reporting unit being compared to its carrying amount, including goodwill.

The Institute performs its annual impairment test as of March 31 each year. The Institute first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit, related to such goodwill, is less than the carrying amount as a basis to determine whether the two step impairment test is necessary. During the year ended December 31, 2017, the Institute adopted ASU 2017-04 *Simplifying the Test for Goodwill Impairment*.

As a result, the goodwill impairment test only requires a determination of whether the fair value of each reporting unit is less than its carrying value. If the fair value exceeds the carrying value, goodwill is not impaired and no further testing is performed. However, if the carrying amount exceeds the fair value, the Institute should recognize an impairment charge for the amount by which the carrying amount exceeds the fair value, not to exceed the total amount of goodwill allocated to that reporting unit.

The Institute completed its annual impairment test of goodwill as of March 31, 2017. The Institute used the carrying value of the reporting unit (IEEE GlobalSpec), inclusive of the assigned goodwill to compare to its fair value. The fair value of the reporting unit was determined using a combination of income approach (discounted cash flow method) and market approach (public company method) techniques. These valuation techniques use estimates and assumptions including, but not limited to,

Impairment of Long-Lived Assets and Intangible Assets

Long-lived assets, including land, buildings, equipment, and intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. If the carrying amount of the long-lived asset (or asset group) exceeds its fair value and the carrying amount is not recoverable, an impairment charge is recognized. An impairment loss is measured as the amount by which the long-lived asset (or asset group) exceeds its fair value. Fair value is determined through various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary.

Intangible assets with definite lives are amortized over their estimated useful lives. The Institute amortizes intangible assets on a straight line basis over periods ranging from three to twenty years and records amortization expense as part of supporting services in its consolidated statement of activities. The weighted average useful life of intangible assets is estimated at six years.

The following tables present identified intangible assets as of December 31, 2017 and 2016:

	2017				
	Amortization Period	Gross Amount	Accumulated Amortization	Net Amount	
INTANGIBLE ASSETS					
Registered users	5 years	\$ 12,600,000	\$ 4,200,000	\$	8,400,000
Internally developed internal-use technology	4 years	11,700,000	4,875,000		6,825,000
Other (a)	3 - 20 years	3,900,000	477,800		3,422,200
Total		\$ 28,200,000	\$ 9,552,800	\$	18,647,200

	2016				
	Amortization Period	Gross Amount	Accumulated Amortization (b)	Net Amount	
INTANGIBLE ASSETS					
Registered users	5 years	\$ 12,600,000	\$ 1,680,000	\$	10,920,000
Internally developed internal-use technology	4 years	11,700,000	1,950,000		9,750,0000
Other (a)	3 - 20 years	3,900,000	191,100		3,708,900
Total		\$ 28,200,000	\$ 3,821,100	\$	24,378,900

(a) Represents the value associated with trade name, long-form content and customer relationships.
(b) Accumulated amortization is for the period April 29, 2016 through December 31, 2016.

the determination of appropriate market comparables, projected future cash flows, discount rate, growth rate, and projected future economic and market conditions (Level 3 inputs). Upon completion of the annual impairment testing, it was determined that the carrying value of the reporting unit exceeded its fair value. As such, the Institute recorded a goodwill charge of \$13,404,000 which was reported as an operating expense in the accompanying 2017 consolidated statement of activities and a reduction of goodwill on the accompanying 2017 consolidated statement of financial position. The goodwill impairment was due to not meeting revenue expectations. Changes in the net carrying amount of goodwill were as follows:

Balance at December 31, 2016	\$ 15,693,700
Impairment adjustment	(13,404,000)
Balance at December 31, 2017	\$ 2,289,700

The Institute recorded amortization of identified intangible assets of \$5,731,700 and \$3,821,100 for the years ended December 31, 2017 and 2016, respectively. The following table presents annual amortization of identified intangible assets for each of the five succeeding fiscal years:

YEAR	Registered Users	Internally Developed Internal-Use Technology	Other	Total
2018	\$ 2,520,000	\$ 2,925,000	\$ 286,700	\$ 5,731,700
2019	2,520,000	2,925,000	242,200	5,687,200
2020	2,520,000	975,000	220,000	3,715,000
2021	840,000	-	220,000	1,060,000
2022	-	-	220,000	220,000

Accounts Payable and Accrued Expenses

Cash overdrafts are included in accounts payable and accrued expenses. At December 31, 2017 and 2016, cash overdrafts amounted to \$80,200 and \$1,410,900, respectively.

Concentration of Market and Credit Risks

Cash, cash equivalents and investments are exposed to interest rate, market, and credit risks. The Institute maintains its cash and cash equivalents in various bank deposit accounts that may exceed federally insured limits at times. To minimize risk, the Institute’s cash accounts are placed with high-credit quality financial institutions, and the Institute’s investment portfolio is diversified with several investment managers in a variety of asset classes. The Institute regularly evaluates its depository arrangements and investments, including performance thereof.

Operating Measure

The Institute classifies its consolidated statement of activities into operating and nonoperating activities. Operating activities include all income and expenses related to carrying out the Institute’s mission. Non-operating activities include interest and dividends, realized and unrealized gains (losses) on investments, and pension and other employee benefit related activity other than net periodic benefit cost.

Income Taxes and Tax Status

The Institute is qualified under Section 501(c)(3) of the Internal Revenue Code (“Code”) as an organization exempt from federal income tax and applicable state income tax and is classified as a publicly supported charitable organization under Section 509(a)(2) of the Code. Nevertheless, the Institute may be subject to tax on income unrelated to its exempt purpose, unless that income is otherwise excluded by the Code. The Institute has historically generated unrelated business income activities and filed a federal Form 990-T. As of the year ending December 31, 2016, the Institute’s unrelated business activities have resulted in the creation of a net operating loss (“NOL”) totaling \$5,769,898; since the Institute did not reasonably anticipate utilizing these NOLs, it booked a full valuation asset against the deferred tax asset.

As a result of its acquisition of IEEE GlobalSpec in 2016, the Institute is generating new streams of unrelated business income. For the year

ending December 31, 2017, the Institute will utilize approximately \$4,100,000 of its existing NOLs. As of December 31, 2017, the Institute’s NOL carryforward is projected to be \$1,640,065; this results in a deferred tax asset of \$331,785 and since the Institute reasonably anticipates utilizing these losses in future years, no valuation allowance will be recorded. Accordingly, as of December 31, 2017, the Institute recognized a deferred tax asset of \$331,785 that is netted with deferred tax liabilities on the accompanying 2017 consolidated statement of financial position.

The Institute follows guidance that clarifies the accounting for uncertainty in tax positions taken or expected to be taken in a tax return, including issues relating to financial statement recognition and measurement. This section provides that the tax effects from an uncertain tax position can be recognized in the financial statements only if the position is “more-likely-than-not” to be sustained if the position were to be challenged by a taxing authority. The assessment of the tax position is based solely on the technical merits of the position, without regard to the likelihood that the tax position may be challenged. As of December 31, 2017 and 2016, management has determined that there are no significant uncertain tax positions that would require recognition or disclosure in the accompanying consolidated financial statements.

On December 22, 2017, the Tax Cuts and Jobs Act (“TCJA”) was enacted, instituting fundamental changes to the federal tax system. The new legislation contains some key tax provisions that will impact the Institute effective January 1, 2018, which includes the reduction of both the corporate and unrelated business income tax rate to 21%, a change in the manner in which unrelated business income is computed, as well as various provisions impacting other items of income and deduction.

Deferred income taxes are recognized for the temporary differences between the tax bases of assets and liabilities and their financial-reporting amounts at each year-end on the basis of enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. Valuation allowances are recognized if based on the weight of available evidence, it is more likely than not that all or some portion of any deferred tax asset will not be realized. The benefit or provision for income tax represents the income tax benefit or payable for the year and the change in deferred tax assets and liabilities during the period.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Subsequent Events

The Institute evaluated its December 31, 2017 consolidated financial statements for subsequent events through April 19, 2018, the date the consolidated financial statements were available to be issued. The Institute is not aware of any material subsequent events which would require recognition or disclosure in the accompanying consolidated financial statements.

NOTE 3. INVESTMENTS

As of December 31, 2017, the Institute’s investments, at fair value, by level within the fair value hierarchy, consist of the following:

	2017		
	Level 1	Net Asset Value	Total
<i>Common stock:</i>			
Consumer	\$ 23,422,300	\$ -	\$ 23,422,300
Technology	41,436,800	-	41,436,800
Financial services	37,284,500	-	37,284,500
Healthcare	28,783,200	-	28,783,200
Industrials	15,761,200	-	15,761,200
Energy	10,183,900	-	10,183,900
Other	10,925,700	-	10,925,700
Total common stocks	167,797,600	-	167,797,600
<i>Mutual funds:</i>			
Growth funds	32,349,700	-	32,349,700
Fixed income funds	109,372,800	-	109,372,800
Money market funds	64,549,400	-	64,549,400
Other funds	27,013,300	-	27,013,300
Total mutual funds	233,285,200	-	233,285,200
U.S. Government securities	18,803,500	-	18,803,500
Commingled funds	-	87,648,400	87,648,400
	\$ 419,886,300	\$ 87,648,400	\$ 507,534,700
Cash held for investment			1,455,900
Add: receivables for securities sold and accrued interest			467,800
Less: liabilities for securities purchased and accrued fees			(565,700)
Total investments, at fair value		\$	508,892,700

As of December 31, 2016, the Institute’s investments, at fair value, by level within the fair value hierarchy, consist of the following:

2016						
	Level 1		Net Asset Value		Total	
Common stock:						
Consumer	\$	28,385,300	\$	-	\$ 28,385,300	
Technology		32,500,000		-	32,500,000	
Financial services		41,021,800		-	41,021,800	
Healthcare		25,106,600		-	25,106,600	
Industrials		14,027,900		-	14,027,900	
Energy		11,747,100		-	11,747,100	
Other		7,057,600		-	7,057,600	
Total common stocks		159,846,300		-	159,846,300	
Mutual funds:						
Growth funds		24,814,600		-	24,814,600	
Fixed income funds		104,906,800		-	104,906,800	
Money market funds		39,196,400		-	39,196,400	
Other funds		20,867,900		-	20,867,900	
Total mutual funds		189,785,700		-	189,785,700	
U.S. Government securities		18,468,400		-	18,468,400	
Commingled funds		-		64,399,300	64,399,300	
	\$	368,100,400	\$	64,399,300	\$ 432,499,700	
Cash held for investment						5,846,000
Add: receivables for securities sold and accrued interest						870,200
Less: liabilities for securities purchased and accrued fees						(1,042,200)
Total investments, at fair value					\$	438,173,700

The Institute’s policy is to recognize transfers in and transfers out of levels at the end of the reporting period.

The categorization of the investments within the fair value hierarchy presented above is based solely on the pricing transparency of the respective instrument and does not necessarily correspond to the Institute’s perceived risk associated with the respective investment security.

The Institute uses, as a practical expedient for fair value, a NAV per share or its equivalent for purposes of valuing certain investments which: (a) do not have a readily determinable fair value and (b) prepare their financial statements consistent with the measurement principles of an investment company or have the attributes of an investment company.

The following table lists such investments by major category as of December 31, 2017 and 2016:

2017							
Type	Strategy	NAV In Funds	# of Funds	Remaining Life	\$ Amount of Unfunded Commitments	Redemption Terms	Redemption Restrictions
Commingled funds	One fund seeks to achieve total return in excess of the Morgan Stanley Capital International All Country World ex USA Index through investing in a diversified portfolio of international equities; and, one fund seeks to outperform the Russell 2000 Index over a 1 to 3 year period; and one fund seeks to maximize portfolio returns while minimizing risk through an asset allocation based on measurements of the investible universe of institutional real estate.	\$ 87,648,400	3	To be determined by the respective fund manager.	N/A	One fund permits redemption upon last business day of each calendar month; one fund has daily redemption upon notice; and, one fund has quarterly redemption with 60 days notice.	N/A
2016							
Type	Strategy	NAV In Funds	# of Funds	Remaining Life	\$ Amount of Unfunded Commitments	Redemption Terms	Redemption Restrictions
Commingled funds	One fund seeks to achieve total return in excess of the Morgan Stanley Capital International All Country World ex USA Index through investing in a diversified portfolio of international equities; and, one fund seeks to outperform the Russell 2000 Index over a 1 to 3 year period; and one fund seeks to maximize portfolio returns while minimizing risk through an asset allocation based on measurements of the investible universe of institutional real estate.	\$ 64,399,300	3	To be determined by the respective fund manager.	N/A	One fund permits redemption upon last business day of each calendar month; one fund has daily redemption upon notice; and, one fund has quarterly redemption with 60 days notice.	N/A

The Institute’s certificates of deposits total \$2,102,800 and \$2,022,000 as of December 31, 2017 and 2016, respectively, are classified as investments - other on the accompanying consolidated statements of financial position. These investments do not qualify as securities, as defined by relevant guidance, and as such, fair value disclosures are not provided.

Investment income, net, for the years ended December 31, 2017 and 2016, are reflected in the accompanying consolidated statements of activities and consists of the following:

IEEE	2017	2016
Interest and dividends, net	\$ 8,865,200	\$ 7,623,200
Net realized and unrealized gains on investments	47,167,900	19,769,600
IEEE investment income, net	\$ 56,033,100	\$ 27,392,800

For the years ended December 31, 2017 and 2016, investment returns related to amounts held on behalf of IEEE Foundation, Incorporated, that have not been reflected in the accompanying consolidated statements of activities, consists of the following:

IEEE FOUNDATION, INCORPORATED	2017	2016
Interest and dividends, net	\$ 793,500	\$ 695,700
Net realized and unrealized gains on investments	4,376,400	1,824,900
IEEE Foundation investment income, net	\$ 5,169,900	\$ 2,520,600

Investment expenses, which are netted with interest and dividends, amounted to \$1,598,000 and \$1,351,100 in 2017 and 2016, respectively.

NOTE 4. LAND, BUILDINGS, AND EQUIPMENT, NET

Land, buildings, and equipment, carried at cost, net of the related accumulated depreciation and amortization, at December 31, 2017 and 2016 consist of the following:

	2017			2016		
	Cost	Accumulated Depreciation and Amortization	Net	Cost	Accumulated Depreciation and Amortization	Net
Buildings	\$ 17,956,600	\$ 14,169,900	\$ 3,786,700	\$ 17,956,600	\$ 13,742,900	\$ 4,213,700
Furniture, equipment, vehides and computers	84,903,700	63,650,400	21,253,300	83,995,100	60,808,500	23,186,600
Software	18,297,900	14,589,700	3,708,200	17,945,500	15,022,400	2,923,100
Building improvements	19,314,900	13,737,100	5,577,800	18,548,800	12,704,900	5,843,900
	140,473,100	106,147,100	34,326,000	138,446,000	102,278,700	36,167,300
Land	873,000	-	873,000	873,000	-	873,000
Building improvements in progress	3,151,800	-	3,151,800	1,715,200	-	1,715,200
Information systems upgrade in process	4,664,300	-	4,664,300	4,360,500	-	4,360,500
Total	\$ 149,162,200	\$ 106,147,100	\$ 43,015,100	\$ 145,394,700	\$ 102,278,700	\$ 43,116,000

Depreciation and amortization expense amounted to \$11,793,500 and \$15,584,000 for the years ended December 31, 2017 and 2016, respectively, excluding amortization of intangible assets of \$5,731,700 and \$3,821,100 as of December 31, 2017 and 2016, respectively.

Furniture and equipment include assets acquired under capital leases of \$1,823,000 and \$4,183,200 as of December 31, 2017 and 2016, respectively. Accumulated amortization of assets recorded under capital leases amounted to \$1,330,300 and \$3,401,800 at December 31, 2017 and 2016, respectively.

NOTE 5. DEBT OBLIGATIONS

The Institute maintains a credit facility to borrow up to an aggregate amount of \$50,000,000. The credit facility consists of \$35,000,000 with Wells Fargo Bank, N.A. and \$15,000,000 with HSBC Bank, N.A. USA and matures on June 1, 2019. The commitment fees charged amounted to \$139,000 and \$147,000 in 2017 and 2016, respectively. The credit facility was not utilized in 2017 and 2016; the Institute had no outstanding borrowings under the credit facility in either year.

The Institute is required to maintain certain financial ratios under this agreement with its Lenders. At December 31, 2017 and 2016, the Institute was in compliance with all financial ratios.

NOTE 6. CAPITAL LEASE OBLIGATIONS

The approximate annual rental payments due under capital lease obligations for equipment are as follows:

Year	Amount
2018	\$ 265,300
2019	200,900
2020	9,300
2021	9,300
2022	800
Total minimum lease payments	485,600
Less: Amount representing interest	(52,200)
Present value of minimum lease payments	\$ 433,400

NOTE 7. PENSION AND OTHER POST-RETIREMENT BENEFITS

The Institute sponsors two qualified pension plans and one nonqualified pension plan and other post-retirement benefit plans for its employees. In November 2006, the Board of Directors approved the freezing of its qualified employee benefit plans as of June 30, 2007 and the implementation of a defined contribution plan effective July 1, 2007. Accordingly, as of June 30, 2007, no further benefits will accrue under the qualified employee benefit plans after that date.

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, 2017, and a statement of the funded status as of December 31, 2017 and 2016:

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Reconciliation of benefit obligation:				
Obligation at January 1	\$ 89,952,900	\$ 86,074,100	\$ 5,938,900	\$ 6,516,300
Service cost	240,000	240,000	212,500	234,700
Interest cost	2,800,700	2,769,400	201,500	190,900
Actuarial loss (gain)	2,884,400	3,630,500	504,500	(866,800)
Benefit payments	(3,677,900)	(2,761,100)	(162,200)	(136,200)
Obligation at December 31	\$ 92,200,100	\$ 89,952,900	\$ 6,695,200	\$ 5,938,900

Reconciliation of fair value of plan assets:

Fair value of plan assets at January 1	\$ 69,213,600	\$ 65,738,400	\$ -	\$ -
Actual return on plan assets	8,940,400	6,220,900	-	-
Employer contributions	18,000	15,400	162,200	136,200
Benefit payments	(3,677,900)	(2,761,100)	(162,200)	(136,200)
Fair value of plan assets at December 31	\$ 74,494,100	\$ 69,213,600	\$ -	\$ -

Funded status at December 31	\$ (17,706,000)	\$ (20,739,300)	\$ (6,695,200)	\$ (5,938,900)
Accumulated benefit obligation	\$ 92,200,100	\$ 89,952,900	\$ 6,695,200	\$ 5,938,900

At December 31, 2017 and 2016, the funded status of the plans is reported on the consolidated statements of financial position as follows:

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Current liabilities	\$ (15,000)	\$ (14,000)	\$ (231,300)	\$ (218,300)
Noncurrent liabilities	(17,691,000)	(20,725,300)	(6,463,900)	(5,720,600)
Net Amount Recognized	\$ (17,706,000)	\$ (20,739,300)	\$ (6,695,200)	\$ (5,938,900)

Cumulative amounts recognized in changes in unrestricted net assets and not yet recognized in net periodic benefit cost as of December 31, 2017 and 2016 consist of:

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Net loss	\$ 19,859,300	\$ 24,440,200	\$ 1,096,800	\$ 595,000
Prior service cost	-	-	-	-
Total	\$ 19,859,300	\$ 24,440,200	\$ 1,096,800	\$ 595,000

The following table provides the components of net periodic benefit cost for the plans for 2017 and 2016:

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Service cost	\$ 240,000	\$ 240,000	\$ 212,500	\$ 234,700
Interest cost	2,800,700	2,769,400	201,500	190,900
Expected return on plan assets	(2,977,100)	(2,517,200)	-	-
Amortization of transition obligation	-	-	-	-
Amortization of net loss	1,502,000	1,776,500	2,700	1,100
Net periodic benefit cost	\$ 1,565,600	\$ 2,268,700	\$ 416,700	\$ 426,700

Amounts recognized in changes in unrestricted net assets for the years ended December 31, 2017 and 2016 consist of:

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Net (gain) loss	\$ (3,078,900)	\$ (73,200)	\$ 504,500	\$ (866,800)
Amortization of net loss	(1,502,000)	(1,776,500)	(2,700)	(1,100)
Amortization of transition obligation	-	-	-	-
Pension related benefits activity other than periodic benefit cost	\$ (4,580,900)	\$ (1,849,700)	\$ 501,800	\$ (867,900)

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

	Pension Benefits	Other Benefits
Net loss	\$ 1,089,600	\$ 32,800

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 fair value of plan assets are amortized over the average remaining service period of active participants.

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

	Pension Benefits		Other Benefits	
	2017	2016	2017	2016
Weighted-average assumptions as of December 31				
Discount rate	3.42%	3.88%	3.51%	4.01%
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	
	2017	2016	2017	2016
Weighted-average assumptions as of December 31				
Discount rate	3.88%	4.06%	4.01%	4.18%
Expected return on plan assets	4.00%	4.00%	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. An increase in the reimbursement amount is not assumed.

Contributions

There are no required contributions due to the qualified pension plans during 2018 under the Internal Revenue Service's ("IRS") minimum funding regulations.

IEEE expects to contribute approximately \$15,000 to its nonqualified pension plan and approximately \$231,000 to its other post-retirement benefit plans during 2018.

Expected Benefit Payments

	Pension Benefits	Other Benefits
2018	\$ 5,613,800	\$ 231,300
2019	4,361,800	241,900
2020	3,863,800	248,300
2021	4,253,400	259,200
2022	5,260,700	277,000
2023 to 2027	26,928,858	1,558,000

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 economic conditions change significantly. The expected rate of return for each plan is based upon its expected asset allocation. Market performance over a period of earlier years is evaluated covering a wide range of economic conditions to determine whether there are reliable reasons for projecting forward any past trends.

IEEE's pension and post-retirement plan asset allocation at the end of 2017 and 2016, and the target asset allocation for 2017 and 2016 by asset category based on asset fair values are as follows:

Asset Category	Target Asset Allocation	Pension Assets at December 31		Post-Retirement Assets at December 31	
		2017	2016	2017	2016
Equity securities	10%	10%	14%	N/A	N/A
Debt securities	90%	86%	84%	N/A	N/A
Cash and cash equivalents	-	4%	2%	N/A	N/A
Total	100%	100%	100%	N/A	N/A

Third-party investment professionals manage IEEE's pension plan assets, rebalancing assets as the Institute deems appropriate. IEEE's investment strategy with respect to its pension plan assets is to maintain a diversified investment portfolio across several asset classes targeting an annual rate of return of 4.0% in 2017 and 2016, respectively. 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 post-retirement 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 liability driven investing. The majority of the assets are matched against the pension liability.

The Institute's investment objectives for the pension plans are to minimize the volatility of the pension assets relative to pension liabilities and to offset the required contributions. The current target asset allocations are 10% equity securities and 90% debt securities. The investment guidelines further allow the managers to keep up to 5% in cash and cash equivalents.

Investment strategies and policies for the pension plans reflect a balance of risk-reducing and return-seeking considerations. The objective of minimizing the volatility of assets relative to liabilities is addressed primarily through asset - liability matching.

All plan assets are externally managed. Investment managers are not permitted to invest outside of the asset classes or strategy for which they have been appointed. The Institute uses investment guidelines to ensure investment managers invest solely within the investment strategy for which they have been retained.

The following table prioritizes the inputs used to measure and report the fair value of the Institute's pension plan assets at December 31, 2017:

	2017					
	Level 1	Level 2	Net Asset Value		Total	
Common stock:						
Consumer	\$ 606,800	\$ -	\$ -	\$ -	\$ 606,800	
Technology	1,352,500	-	-	-	1,352,500	
Industrials	444,200	-	-	-	444,200	
Healthcare	423,200	-	-	-	423,200	
Financial services	593,900	-	-	-	593,900	
Energy	151,800	-	-	-	151,800	
Other	309,600	-	-	-	309,600	
Total common stocks	3,882,000	-	-	-	3,882,000	
Equity mutual funds	3,799,600	-	-	-	3,799,600	
Corporate bonds	-	61,891,300	-	-	61,891,300	
Municipal bonds	-	639,500	-	-	639,500	
Foreign bonds	-	1,058,800	-	-	1,058,800	
Collective trust fund	-	-	1,815,300	-	1,815,300	
	\$ 7,681,600	\$ 63,589,600	\$ 1,815,300	\$ -	\$ 73,086,500	
Cash held for investment					668,200	
Add: receivables for securities sold and accrued interest					739,400	
Total pension plan investments					\$ 74,494,100	

The following table prioritizes the inputs used to measure and report the fair value of the Institute's pension plan assets at December 31, 2016:

	2016					
	Level 1	Level 2	Net Asset Value		Total	
Common stock:						
Consumer	\$ 898,700	\$ -	\$ -	\$ -	\$ 898,700	
Technology	1,211,500	-	-	-	1,211,500	
Industrials	520,700	-	-	-	520,700	
Healthcare	687,400	-	-	-	687,400	
Financial services	648,000	-	-	-	648,000	
Energy	216,700	-	-	-	216,700	
Other	297,200	-	-	-	297,200	
Total common stocks	4,480,200	-	-	-	4,480,200	
Equity mutual funds	4,954,200	-	-	-	4,954,200	
Corporate bonds	-	54,029,400	-	-	54,029,400	
Municipal bonds	-	2,959,900	-	-	2,959,900	
Foreign bonds	-	1,015,200	-	-	1,015,200	
Collective trust fund	-	-	1,003,600	-	1,003,600	
	\$ 9,434,400	\$ 58,004,500	\$ 1,003,600	\$ -	\$ 68,442,500	
Cash held for investment					3,200	
Add: receivables for securities sold and accrued interest					794,700	
Less: liabilities for securities purchased and accrued fees					(26,800)	
Total pension plan investments					\$ 69,213,600	

The Institute's policy is to recognize transfers in and transfers out of levels at the end of the respective reporting period.

The Institute uses, as a practical expedient for fair value, a NAV per share or its equivalent for purposes of valuing certain investments which: (a) do not have a readily determinable fair value and (b) prepare their financial statements consistent with the measurement principles of an investment company or have the attributes of an investment company. The following table lists such investments by major category as of December 31, 2017 and 2016:

2017							
Type	Strategy	NAV in Funds	# of Funds	Remaining Life	\$ Amount of Unfunded Commitments	Redemption Terms	Redemption Restrictions
Collective trust fund	Seeks the highest level of current income possible consistent with the preservation of capital and maintenance of liquidity.	\$ 1,815,300	1	Subject to the determination of the respective fund manager	N/A	Daily redemption, upon notice.	N/A
2016							
Type	Strategy	NAV in Funds	# of Funds	Remaining Life	\$ Amount of Unfunded Commitments	Redemption Terms	Redemption Restrictions
Collective trust fund	Seeks the highest level of current income possible consistent with the preservation of capital and maintenance of liquidity.	\$ 1,003,600	1	Subject to the determination of the respective fund manager	N/A	Daily redemption, upon notice.	N/A

The Institute also has a defined contribution 401(k) Savings and Investment Plan (the "Plan") for eligible employees, who are eligible to participate after the start of the next pay period following 30 days of employment. Under the Plan, employees may generally contribute between 2% to 16% of their salary; however, not in excess of IRS limitations. The Institute provides a 100% matching contribution up to 4% of each employee's salary. The Institute contributed \$4,683,400 and \$4,760,400 on behalf of eligible employees to the Plan in 2017 and 2016, respectively. Amounts payable at December 31, 2017 and 2016 totaled \$0 and \$156,700, respectively, and are included in the current portion of accrued pension and other benefits in the accompanying consolidated statements of financial position.

The Institute has established a Defined Contribution Retirement Plan under which it makes contributions to accounts established for each employee according to a predetermined schedule of contributions. The employee's retirement benefit is the value of the account. All contributions under the Defined Contribution Retirement Plan are made by the Institute and are not funded through salary deductions (employee contributions). Vesting occurs at the completion of each year of service at a rate of 25% per year until 100% after four years. The Institute contributed \$9,280,200 and \$9,431,600 to this plan in 2017 and 2016, respectively. Amounts payable at December 31, 2017 and 2016 totaled \$0 and \$294,400, respectively, and are included in the current portion of accrued pension and other benefits in the accompanying consolidated statements of financial position.

Effective September 1, 2002, the Institute implemented a 457(b) plan for those highly compensated employees who have reached the IRS maximum 401(k) contribution for the year. These employees have the option of continuing their contributions up to the maximum dollar amount under section 457(e) (15) of the Internal Revenue Code of 1986, as amended. All other criteria for eligibility follow the same guidelines as the 401(k) plan. The amounts of \$5,150,200 and \$4,294,500 pertaining to obligations due under the 457(b) plan are accrued and included in accrued pension and other employee benefits at December 31, 2017 and 2016, respectively, and the related 457(b) plan assets are included in investments on the accompanying consolidated statements of financial position.

NOTE 8. ADDITIONAL INFORMATION PRESENTED BY ACTIVITY

The following presents the Institute's consolidated financial results presented in a traditional surplus or loss format for the years ended December 31, 2017 and 2016. This format differs from the accompanying consolidated statements of activities presented on pages 44 and 45 which present the financial results by the types of products and services sold. The surplus and loss presents the same data pertaining to the nature of activities.

	2017		2016	
Net Revenues	\$	493,336,900	\$	477,993,100
Less: Cost of revenues		232,963,000		226,616,000
Direct Contribution to surplus (loss)	\$	260,373,900	\$	251,377,100
Expenses:				
Selling	\$	37,547,200	\$	34,243,500
Marketing		33,443,500		32,125,500
Product design		8,025,600		7,697,700
Supporting services		172,245,900		175,333,200
Goodwill Impairment		13,404,000		-
Contribution to surplus (loss)	\$	(4,292,300)	\$	1,977,200
Public imperatives, net		(10,930,900)		(11,703,300)
Nonoperating activities:				
Investment income (loss), net	\$	56,033,100	\$	27,392,800
Pension credit		4,079,100		2,717,600
Surplus (loss) before tax		44,889,000		20,384,300
Income tax benefit		4,209,800		2,212,700
Net surplus (loss) after tax	\$	49,098,800	\$	22,597,000

A description of each line item is discussed below:

Revenues: Net earnings from the sales of products and services.

Cost of Goods Sold: Direct costs incurred in producing or providing products and services that are sold and generate revenue.

Selling: Expenses incurred in the effort to sell products or services, includes commissions and other related expenses.

Marketing: Expenses incurred in an effort to possibly generate additional sales of existing products or services, including brand awareness, promotions, displays, and media.

Product Design: Expenses incurred in relation to developing new products and services to be sold in the future.

Supporting services: This is also referred to as general and administrative expenses. This caption includes operational support and shared services. Operational support includes expenses that are indirectly related to the sale of products and services which generate revenue (e.g., costs associated with conference and event management, volunteer engagement and executive or governance functions). Shared services include general overhead such as Human Resources, Finance, Information Technology, Facilities and other related expenses. The presentation of supporting services, as reported on pages 44 and 45, reflects an allocation of such costs amongst the lines of operation specifically benefited.

Public Imperatives: Public imperatives are outreach and public awareness efforts to inform the public and members about technology and the engineering profession.

NOTE 9. NET ASSETS AND ENDOWMENT FUNDS

Temporarily restricted net assets are available for the following purposes at December 31, 2017 and 2016:

	2017		2016	
Grant funds held for specific purposes	\$	902,400	\$	853,100
Funds held for awards, medals and other specific purposes		779,200		722,100
	\$	1,681,600	\$	1,575,200

Net assets were released from donor restrictions by incurring expenses satisfying the restricted purposes for the years ended December 31, 2017 and 2016 as follows:

	2017		2016	
Grant funds released for specific purposes	\$	575,700	\$	521,700
Funds released for awards, medals and other specific purposes		3,600		18,600
	\$	579,300	\$	540,300

Permanently restricted net assets at December 31, 2017 and 2016 consist of assets that have been restricted by donors to be invested in perpetuity to provide a permanent source of income. The Institute's donor-restricted endowment consists of eleven (11) individual funds established principally for awards.

On September 17, 2010, the State of New York passed the NYPMIFA, its version of the Uniform Prudent Management of Institutional Funds Act ("UPMIFA"). All not-for-profit organizations formed in New York must apply this law. The Institute classifies as permanently restricted net assets, unless otherwise stipulated by the donor: (a) the original value of gifts donated to its permanent endowment, (b) the original value of subsequent gifts to its permanent endowment and (c) accumulations to its permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the funds.

The remaining portion of the donor-restricted endowment fund not classified in permanently restricted net assets is classified as temporarily restricted net assets until such amounts are appropriated for expenditure by the Institute in a manner consistent with the uses, benefits, purposes and duration for which the endowment is established and the standard of prudence prescribed by NYPMIFA.

In accordance with NYPMIFA, the Institute considers the following factors in making a determination to appropriate or accumulate donor-restricted endowment funds: the purpose, duration, and preservation of the endowment fund; expected total return on endowment investments; general economic conditions; the possible effects of inflation and deflation; other resources of the Institute; and, the investment policy of the Institute.

The Institute has adopted investment management and spending policies for its endowment assets which totaled \$565,200 and \$516,000 as of December 31, 2017 and 2016, respectively. This supports the objective of providing a sustainable and increasing level of endowment income distribution to support the Institute's activities while seeking to maintain the purchasing power of the endowment assets. The Institute's primary investment objective is to maximize total return within reasonable and prudent levels of risk while maintaining sufficient liquidity to meet disbursement needs and ensure preservation of capital.

To satisfy its long-term rate-of-return objectives, the Institute relies on a total return strategy, the objective of which is to achieve a return consisting of a combination of current income and capital appreciation, without regard to an emphasis on either, recognizing that changes in market conditions and interest rates will result in varying strategies in an attempt to optimize results. The endowment portfolio is diversified among various investment classes and strategies to help reduce risk.

The following table summarizes the Institute’s total return on endowment investments and the changes in endowment net assets for the year ended December 31, 2017:

	2017			
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor restricted endowment funds	\$ -	\$ 373,800	\$ 191,400	\$ 565,200
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment assets, beginning of year	\$ -	\$ 324,600	\$ 191,400	\$ 516,000
Dividends and interest	-	10,000	-	10,000
Net realized and unrealized appreciation				
in fair value of endowment assets	-	42,400	-	42,400
New gifts	-	-	-	-
Endowment return used for operations	-	(3,200)	-	(3,200)
Endowment assets, end of year	\$ -	\$ 373,800	\$ 191,400	\$ 565,200

The following table summarizes the Institute’s total return on endowment investments and the changes in endowment net assets for the year ended December 31, 2016:

	2016			
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor restricted endowment funds	\$ -	\$ 324,600	\$ 191,400	\$ 516,000
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment assets, beginning of year	\$ -	\$ 317,200	\$ 191,400	\$ 508,600
Dividends and interest	-	8,300	-	8,300
Net realized and unrealized appreciation				
in fair value of endowment assets	-	17,300	-	17,300
New gifts	-	-	-	-
Endowment return used for operations	-	(18,200)	-	(18,200)
Endowment assets, end of year	\$ -	\$ 324,600	\$ 191,400	\$ 516,000

NOTE 10. COMMITMENTS AND CONTINGENCIES

Operating Leases

At December 31, 2017, minimum rental commitments due under noncancellable operating leases for office space and computer equipment are as follows:

Year	Amount
2018	\$ 3,981,400
2019	3,796,600
2020	3,427,700
2021	3,328,000
2022	2,834,600
Thereafter	11,566,400
	\$ 28,934,700

The leases for the office space are subject to escalation. Total rent expense for noncancellable operating leases amounted to \$4,919,300 and \$4,320,400 in 2017 and 2016, respectively.

Letters of Credit

At December 31, 2017, the Institute had irrevocable standby letters of credit with Wells Fargo Bank, N.A., in the amounts of \$583,000 and \$45,100, which serve as security deposits as required by the terms of its lease agreements with Three Park Avenue Building Company, LP and 2001 L Street, LLC, respectively.

At December 31, 2017, the Institute had issued standby letters of credit in relation to certain dealers agreements and VAT tax payments totaling \$108,200 with HSBC Bank USA, N.A. The Institute is charged 2% of the face amount, upon issuance, of the standby letters of credit.

Litigation

The Institute, in the normal course of its operations, is a party to various legal proceedings and complaints, some of which are covered by insurance. While it is not feasible to predict the ultimate outcomes of such matters, management of the Institute is not aware of any claims or contingencies, which are not covered by insurance, that would have a material adverse effect on the Institute’s consolidated financial position, changes in net assets or cash flows.

NOTE 11. RELATED-PARTY TRANSACTIONS

IEEE Foundation, Incorporated

The Institute has transactions with IEEE Foundation, Incorporated (the “Foundation”), a related organization, which performs activities in support of the scientific and educational functions and programs of the Institute. The Institute made cash contributions of \$382,000 and \$369,000 in 2017 and 2016, respectively, to the Foundation.

The Foundation has no staff and thus, receives certain accounting and administrative services from IEEE. The Foundation reimbursed IEEE for the cost of such services, which amounted to \$773,100 and \$748,000 during 2017 and 2016, respectively. The Institute provided fundraising administrative services (contributed services) during 2017 and 2016 that were not reimbursed by the Foundation, that were valued at \$1,256,500 and \$1,235,500 during 2017 and 2016, respectively.

The Institute held on deposit \$45,435,400 and \$40,414,800 from the Foundation at December 31, 2017 and 2016 respectively, and is separately reported on the accompanying consolidated statements of financial position. The Institute invests these amounts on behalf of the Foundation. Receivables due from the Foundation include grants receivable of \$2,078,900 and \$1,368,300 at December 31, 2017 and 2016, respectively, and other receivables of \$74,100 and \$65,100 at December 31, 2017 and 2016, respectively, and are included in accounts receivable on the accompanying consolidated statements of financial position. Amounts due to the Foundation of \$116,800 and \$162,300 at December 31, 2017 and 2016, respectively, are included in accounts payable and accrued expenses on the accompanying consolidated statements of financial position.

NOTE 12. INCOME TAXES

IEEE, Inc. and IEEE GlobalSpec, subsidiaries of the Institute, are considered for-profit entities under the Code. For these subsidiaries, income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect management’s best assessment of estimated current and future taxes paid. Significant judgments and estimates are required in determining the consolidated income tax expense.

For the tax year ending December 31, 2017, the total consolidated effective tax rate for IEEE, Inc. and IEEE GlobalSpec was 20.12%. For the tax year ending December 31, 2016, the total consolidated effective tax rate for IEEE, Inc. and IEEE GlobalSpec was 32.64%. Due to temporary differences between the tax basis of assets acquired in the IEEE GlobalSpec acquisition and the amounts reported in the financial statements, IEEE, Inc. recorded tax goodwill and a deferred tax liability of approximately \$9.9 million at the date of acquisition. As of December 31, 2017 and 2016, deferred tax liabilities were reported due to temporary differences between reported amounts in the financial statements and amounts reported for tax purposes which relate primarily to net operating losses and intangible assets.

For the years ended December 31, 2017 and 2016, the provision (benefit) for income taxes consisted of the following:

	2017	2016
Current:		
Federal	\$ -	\$ -
State	25,900	7,900
	25,900	7,900
Deferred:		
Federal	(4,031,400)	(1,957,200)
State	(204,300)	(263,400)
	(4,235,700)	(2,220,600)
Provision (benefit) for income taxes	\$ (4,209,800)	\$ (2,212,700)

In the fourth quarter of 2017, the Institute recorded an estimate of tax effects of the TCJA impact on deferred tax assets and liabilities from the reduction in the U.S. Federal corporate tax rate from 35% to a flat rate of 21%. Accordingly, as of December 31, 2017, the \$4,031,400 deferred federal provision benefit is primarily attributed to the reduction in the U.S. Federal corporate tax rate.

The effective rate differs from the statutory rate due to non-deductible expenses, change in corporate tax rate and state taxes. As of December 31, 2017 and 2016, management has assessed that a valuation allowance is not required based on the long-range forecast of future taxable income.

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